



ANNUAL REPORT 2020

BANPU PUBLIC COMPANY LIMITED



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Detail 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



Banpu is a leading International Versatile Energy Provider offering the best-in-class energy solutions with our extensive expertise in integrated energy in 10 countries across Asia-Pacific. With our **Greener & Smarter** strategy, Banpu deploys smart innovation and technologies to support more eco-friendly business operation, which creates business growth and a good steady return for our investors while maintaining sustainable benefits for all stakeholders.

3 BANPU'S CORE GROUPS OF BUSINESSES

Banpu harnesses the stronger integration between 3 core groups of businesses to create a business ecosystem that promotes the synergy of the businesses, and provides integrated energy solutions throughout the supply chain in line with global energy and environmental trends.



Energy Resources

Coal and gas including related operations such as marketing, trading, logistics, fuel procurement and transmission



Energy Generation

Thermal and renewable power plants



Energy Technology

Total solar energy solutions, energy storage and system, electric vehicle, smart community, and energy management system



SMARTER ENERGY FOR SUSTAINABILITY



Banpu determines to provide the world with energy sustainability through the delivery of affordable, reliable, and eco-friendly energy. We have gained the trust of stakeholders with our commitment on "**Smarter Energy for Sustainability**" by encouraging our stakeholders to go along and embrace the priority of and adherence to the environmental, social, and corporate governance (ESG) principles. The Company believes that our ability to build a sustainable partnership, promote sustainable people development, and deliver sustainable energy solutions are the crucial factors for us to **grow sustainably and create more values to the world.**

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 Vongkusolkiet 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.

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.**”

Heading into the fourth decade of business operations both locally and internationally, Banpu is now positioned as an **International Versatile Energy Provider** of the best-in-class energy solutions with our extensive expertise in integrated energy solutions. The Company operates in 10 countries across Asia-Pacific, namely Thailand, Indonesia, China, Australia, Lao PDR, Mongolia, Singapore, Japan, the United States of America and Vietnam. Steering the **Greener & Smarter** strategy, Banpu leverages smart technology and innovation to drive growth and strengthen Banpu Group's business ecosystems. The Company harnesses global energy trends toward Decentralization, Decarbonization, and

Digitalization through our three core groups of businesses: **Energy Resources** (coal and gas including related operations such as marketing, trading, logistics, fuel procurement and transmission), **Energy Generation** (thermal and renewable power plants), and **Energy Technology** (total solar energy solutions, energy storage and system, electric vehicle, smart community, and energy management system). Banpu endeavors to create energy sustainability for the world through the delivery of affordable, reliable, and eco-friendly energy.

Banpu has sustainably fulfilled the energy demands of consumers, communities, and society by embracing environmental, social and governance or **ESG principles** in our business conduct throughout nearly four decades. Aside from that, Banpu prioritizes the practice of “**Banpu Heart**” **corporate culture**, which comprises its three core values: Passionate, Innovative, and Committed. Adherence to the corporate culture has significantly empowered Banpu to cope with any changes and crises to build stakeholder confidence in line with our brand promise...

OUR WAY IN ENERGY

BANPU GROUP'S MAP OF OPERATIONS



1 
Thailand



1 Thermal Power Plant

2 
Lao PDR



1 Thermal Power Plant

3 
Vietnam



1 Wind Farm



1 Wind Project

4 
Singapore



1 Sales and Logistics Hub

5 
Indonesia



5 Coal Mines



2 Coal Projects



2 Ports

6 
Mongolia



3 Coal Projects

7 
China



2 Coal Mines



4 Thermal Power Plants



7 Solar Farms

8 
Japan



9 Solar Farms



7 Solar Projects

9 
Australia



5 Coal Mines



3 Coal Projects



2 Ports

10 
**The United States of America
(Pennsylvania and Texas)**



2 Shale Gas Sites

Note: The map excludes operations of solar rooftop, energy storage and system, electric vehicle, and smart community.

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 Thermal and New Energy Technologies

Foster our Corporate Values,
Operational Excellence,
and Uphold Banpu's Reputation for Integrity,
Professionalism and Best Practices

FINANCIAL HIGHLIGHTS

Sales Revenues

2,283
Million USD

-17%

EBITDA

563
Million USD

-20%

Net (Loss) Profit

(56)
Million USD

Total Assets

9,377
Million USD

+16%

Total Liabilities

6,562
Million USD

+21%

Total Equity

2,815
Million USD

+7%

Energy Resources

Coal Business

Sales Volume

38.8
Mt



Gas Business

Net Production*

~700
MMcfd



Energy Generation

Power Business

Total Committed
Capacity

3,309
MW



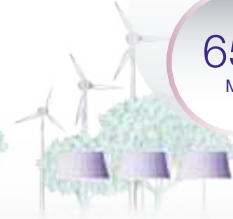
Committed Thermal
Equity-based Capacity

2,403
MW



Committed Renewables
Equity-based Capacity

657
MW



Energy Technology

Solar Rooftop & Floating Solutions Business

Equity-based
Capacity

249
MW



Energy Storage Business

Total Production
Capacity

1.0
GWh



Smart Community Development Business

Smart City Project
under Development

5
Projects



Electric Vehicle (EV) Business

Launched e-Ferry

BANPUNEXT
e-Ferry



EV Market
Expansion

Model
FOMM
One



EV Tuk Tuk Service
Provided



2,500
Passengers/Day

*Included capacity from the Barnett Shale invested on 1 October 2020

For the Year Ended

		31 December 2020	31 December 2019	31 December 2018
Financial Position				
Total Assets	(Million USD)	9,377	8,069	8,454
Total Liabilities	(Million USD)	6,562	5,434	5,279
Total Equity	(Million USD)	2,815	2,635	3,175
Issued and Paid-up Share Capital	(Million USD)	147	150	150
Operational Results				
Sale Revenues	(Million USD)	2,283	2,759	3,481
Cost of Sales	(Million USD)	(1,822)	(2,051)	(2,253)
Gross Profit	(Million USD)	460	708	1,228
Selling and Administration Expenses	(Million USD)	(365)	(439)	(419)
Royalty Fee	(Million USD)	(183)	(241)	(291)
Other Revenues	(Million USD)	155	173	65
Other Expenses	(Million USD)	(31)	(95)	(82)
Profit from Operation	(Million USD)	36	107	502
Share of Profit from Joint Ventures	(Million USD)	135	206	264
Interest Expenses	(Million USD)	(173)	(182)	(170)
Financial Expenses	(Million USD)	(6)	(5)	(5)
Corporate Income Tax	(Million USD)	(9)	(78)	(189)
Indemnity Payment	(Million USD)	-	-	(86)
Non-controlling Interests	(Million USD)	(39)	(61)	(109)
Net (Loss) Profit	(Million USD)	(56)	(14)	205
EBITDA	(Million USD)	563	701	1,178
Financial Ratios				
Gross Profit Margin	(%)	20	26	35
Net (Loss) Profit to Total Revenues	(%)	(2.3)	(0.5)	5.8
Returns on Assets	(%)	(0.6)	(0.2)	2.5
Returns on Equity	(%)	(2.0)	(0.5)	6.4
Interest Coverage Ratio	(times)	2.5	2.4	3.8
Net Debt to Equity	(times)	1.47	1.23	1.02
Data per Share				
Earnings per Share	(USD)	(0.011)	(0.003)	0.040
Book Value per Share	(USD)	0.55	0.51	0.61
Dividend per Share	(THB)	0.30*	0.60	0.70

*The Company announced a total dividend of THB 0.30 per share arising from its performance during the period from 1 January 2020 to 31 December 2020, of which THB 0.15 was paid on 25 September 2020. The remaining dividend of THB 0.15 per share for 2020 performance will be paid on 30 April 2021.

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

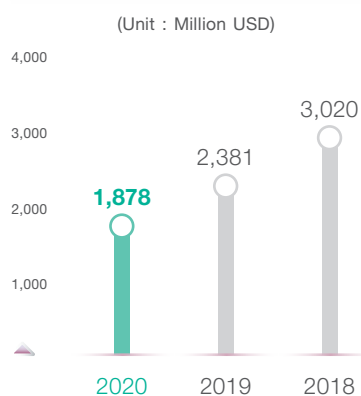
OPERATIONAL RESULTS

For the Year Ended

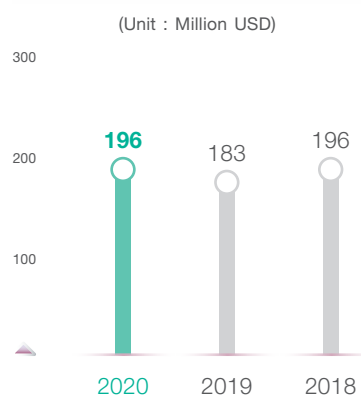
	2020	2019	2018
Coal Sales Volume			
(Million Tonnes)			
Sources - Indonesia (ITMG)	19.63	23.10	21.49
Other Sources	1.56	2.27	2.52
Sources - Indonesia	21.19	25.37	24.01
Sources - Australia	12.50	10.50	13.70
Sources - China (Traded Coal)	0.96	0.31	0.31
Sources - Others	0.02	-	-
Total Coal Sales Volume	34.67	36.18	38.03
Revenue			
(Million USD)			
Revenue from Indonesia (ITMG)	1,084	1,550	1,801
Revenue from Other Sources	56	121	183
Revenue from Indonesia	1,140	1,671	1,984
Revenue from Australia	698	694	1,014
Revenue from China (Traded Coal) and Other Sources	41	16	23
Revenue from Coal Business	1,878	2,381	3,020
Revenue from Power Business	196	183	196
Revenue from Gas Business*	120	105	144
Revenue from Fuel Business	49	79	95
Revenue from Other Businesses	38	12	26
Total Revenues	2,283	2,759	3,481
Gross Profit Margin			
(%)			
Gross Profit Margin - Indonesia (ITMG)	31	34	45
Gross Profit Margin - Other Sources	5	8	11
Gross Profit Margin - Indonesia	30	32	42
Gross Profit Margin - Australia	6	15	27
Gross Profit Margin - China (Traded Coal)	2	0	4
Gross Profit Margin - Coal Business	21	27	37
Gross Profit Margin - Power Business	25	19	21
Gross Profit Margin - Gas Business	11	31	47
Gross Profit Margin - Fuel Business	-1	2	5
Gross Profit Margin - Other Businesses	25	47	44
Total Gross Profit Margin	20	26	35

* Included revenue from the Barnett Shale invested on 1 October 2020

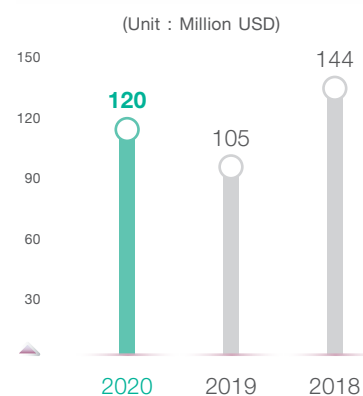
Revenue from Coal Business



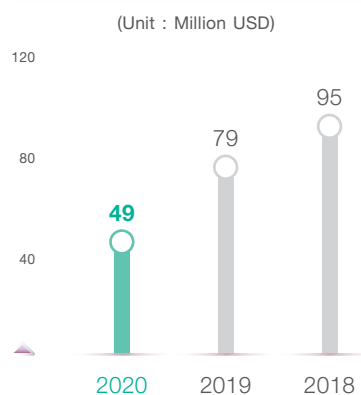
Revenue from Power Business



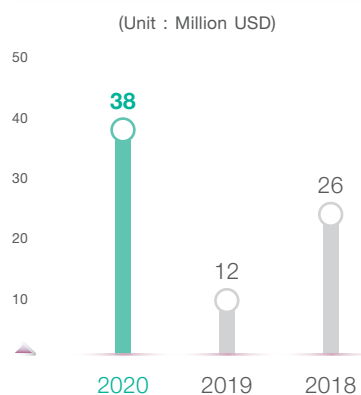
Revenue from Gas Business*



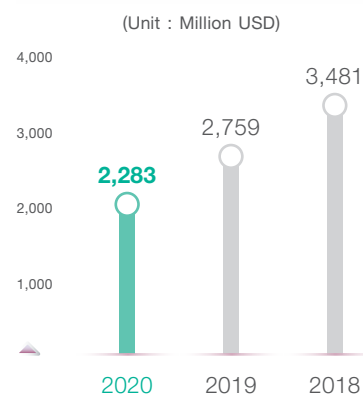
Revenue from Fuel Business



Revenue from Other Businesses



Total Revenues



* Included revenue from the Barnett Shale invested on 1 October 2020

THE BOARD OF DIRECTORS' REVIEW

Although 2020 was indeed a tough and challenging year due to the coronavirus disease 2019 (COVID-19) pandemic, posing extensive impacts on the global economy and society, the Board of Directors still placed great importance on sustainable growth. Banpu has embraced the environmental, social, and governance (ESG) principles in business operations for nearly four decades to create stable favorable returns for shareholders and investors as well as sustainable benefits for all stakeholders. Today, we have smooth business operations in ten countries worldwide under the **Greener & Smarter strategy**. While, we, as a leading integrated energy solutions company, are always on the lookout for new business opportunities to satisfy customers' changing needs with technological and innovation development.

This year, the Board of Directors and management held a joint discussion to review and approve the strategic plan and business direction for 2021-2025 using the sustainability development plan to determine business strategies for the next five years, reinforcing the **Greener & Smarter strategy**. The focuses are on building competitiveness, creating added value for stakeholders, and adapting to changing economic and industrial environments.

Apart from that, the Board of Directors has reviewed the Board's structure and nominated knowledgeable, competent, and experienced Board members to strengthen the Board's structure in alignment with the Company's direction. All the efforts enable the Board to better advise and support the management through crucial business transformation to foster sustainable growth and competitiveness, and cater to future energy demands in the **"New Normal"** environment with our standpoint on **"Smarter Energy for Sustainability"**.

The Board of Directors has always adhered to good governance, transparency, and accountability and supported the fight against corruption. In the past year, on behalf of the Board of Directors, the Chairman of the Board and the Chairman of the Audit Committee signed a self-assessment form on anti-corruption practices to apply for the renewal of certification of Banpu as a member of the Private Sector Collective Action Against Anti-Corruption (CAC) for the second time, which will be valid for another period of three years.

On this occasion, the Board of Directors would like to express our sincere gratitude to all our valued customers, stakeholders, and relevant parties, both in Thailand and abroad, for your unwavering trust and continued support. We commit to steering Banpu Group's businesses toward being an **international versatile energy provider**, with adherence to good corporate governance principles and responsibility to society, the environment, and the world to create long-term sustainable value for all our stakeholders.



“

**Banpu has always
foster sustainable growth**
and competitiveness, and cater to future
energy demands in the **“New Normal”**
environment with our standpoint on
“Smarter Energy for Sustainability”

”



Mr. Chanin Vongkusolkrit
Chairman of the Board of Directors



CHIEF EXECUTIVE OFFICER'S REVIEW

The global economic crisis caused by the Covid-19 pandemic has accelerated disruptive mega-trends and accentuated the importance of Banpu's Greener & Smarter transformation.

Banpu's strategy since 2015 has been designed to achieve a rapid transition to a more sustainable business model: one which balances and integrates conventional sources of energy supply with lower carbon gas and cutting-edge clean energy technologies. In 2020, we made some bold moves to accelerate this transformation with a major expansion of our Gas business in the U.S. and some exciting growth around our Clean Energy Tech businesses in Asia under Banpu NEXT. Banpu NEXT's portfolio of solar rooftop and smart city solutions, lithium-ion battery manufacturing, e-mobility services, e-ferries and electricity trading is gradually being developed and integrated into a smart energy ecosystem.

With top ESG performance scores on the Dow Jones Sustainability Indices, **Banpu is quickly becoming the Pacific Rim's leading 'energy transition' story.** Banpu is back on the radars of international investors and set to deliver strong and sustainable returns to both shareholders and stakeholders in the coming years.

Financial Performance

The severe economic disruption caused by the Covid-19 pandemic, including lower gas and coal prices, inevitably affected Banpu's financial results in 2020. The group recorded a consolidated net loss for the year of USD 56 million after a foreign exchange translation gain of USD 81 million and a derivatives gain of USD 23 million.

The group's diversified business structure and efficient operating systems provided a level of resilience which limited the overall cashflow impact. Despite the challenging macro-economic conditions, Banpu was able to generate consolidated group EBITDA¹ of USD 563 million in 2020: USD 340 million from the group's Coal business, USD 169 million from the Power business and USD 54 million from the Gas business. Banpu's financial gearing was kept at manageable levels, with the group's TRIS credit rating confirmed at 'A+ with stable outlook'².



¹ Earnings before interest, tax, depreciation and amortization

² Banpu corporate rating for senior unsecured debentures

“ With top ESG performance scores on the Dow Jones Sustainability Indices, **Banpu is quickly becoming the Pacific Rim’s leading ‘Energy Transition’ story.** Banpu is back on the radars of international investors and set to deliver strong and sustainable returns to both shareholders and stakeholders in the coming years. ”



Mrs. Somruedee Chaimongkol
Chief Executive Officer





Energy Resources

U.S. Gas Business

Banpu completed its acquisition of the Barnett shale business from Devon Energy Corporation on 1 October 2020 for a total consideration of USD 570 million. This brings Banpu's total U.S. gas sector investments to USD 1.1 billion so far. The acquisition date was accelerated from the initial completion date of 31 December to take advantage of the anticipated gas price rebound in the U.S. allowing Banpu to realize additional profit contributions in the fourth quarter. With the Barnett assets, Banpu has become one of the Top 20 gas producers in the U.S. with production of approximately 700 million cubic feet equivalent per day (MMcfe).

During the course of 2020, Banpu restructured its U.S. Gas business from a fund management structure to a simple corporation structure known as BKV, 95.2% owned by Banpu. This has given Banpu greater control over its U.S. Gas business, as well as the ability to raise capital for future growth. In December 2020, Oaktree Capital Management, a global investment management firm with over USD 140 billion assets under management, showed its confidence in BKV by investing USD 100 million in preferred stock.

The Henry Hub benchmark price averaged USD 2.03 per MMBtu in 2020, 21% lower than the average for 2019. In 2020, BKV generated total EBITDA of USD 54 million, slightly lower than in 2019 due to the lower average gas prices. With the addition of Barnett shale assets at the end of the year, attributable gas sales increased 64% year-on-year to 113 MMcfe.

Coal Sales and Market Analysis

Banpu group coal sales in 2020 totaled 38.8 million tonnes (Mt) versus 40.7 Mt in the previous year. Total coal sales from Banpu's Indonesian mines were 21.2 Mt, with 12.5 Mt from the group's Australian mines and 5.1 Mt, from China operations³. Production from Banpu's Indonesian and Chinese mines decreased, while output from Australian mines increased.

Sales to ASEAN customers were up at 8.3 Mt while sales to customers in China decreased by 22% in 2020 to 9.8 Mt. In South Asia, although sales were down in India (to 0.8 Mt), coal sales to Bangladesh increased by 18% to 1.3 Mt. Sales to customers in Japan, Korea and Taiwan remained stable at 9.4 Mt while sales to domestic customers in Australia were up by 52% from 2019 to 9.1 Mt.

The benchmark NEX Index⁴, representing thermal benchmark prices at Newcastle in Australia for high-grade export coal, decreased 24% to an average level of USD 59 per tonne in 2020 versus USD 77 per tonne in 2019. Banpu group's weighted average coal selling price was USD 54 per tonne in 2020 compared to USD 66 per tonne in 2019.

Indonesia Coal Business

PT. Indo Tambangraya Megah Tbk (ITM) is listed on the Indonesian stock exchange and is approximately 68%-owned by Banpu. ITM recorded EBITDA of USD 187 million in 2020, down from the previous year

³ Indonesia on 100% consolidated basis, Australia and China on equity basis

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

due primarily to a 17% decrease in average selling prices (USD 53.8 per tonne in 2020 versus USD 65 in 2019) and decrease in sales volume (21.2 Mt in 2020 versus 25.4 Mt in 2019).

Coal output at ITM decreased by 21% in 2020 to 18.4 Mt: 9.0 Mt from Indominco, 4.3 Mt from Trubaindo, 3.0 Mt from Bharinto, 1.1 Mt from Embalut and 1.0 Mt from Jorong. ITM average unit costs decreased to USD 49 per tonne from USD 58 per tonne due to mine plan optimization initiative, lower royalty, fuel and overhead costs.

Australia Coal Business

Centennial's EBITDA in 2020 was equivalent to USD 131 million, down on the previous year due mainly to lower average selling prices (AUD 81 per tonne versus AUD 94 per tonne).

Output at Centennial's mines was up by 32% at 12.4 Mt compared to 9.3 Mt in 2019. This increase was mainly due to the additional 50% interest in Springvale acquired in December 2019. In addition, production increased across all our Australian mines. Clarence achieved a slight increase in production from 1.6 Mt to 1.8 Mt, and Airly increased to 1.6 Mt from 1.2 Mt. For the Northern operations, Mandalong production went up 33% from 2019 to 5.2 Mt and Myuna output increased to 1.0 Mt.

China and Mongolia Coal Business

EBITDA from our coal operations in China was USD 23 million in 2020, a significant decrease from 2019. Gaohe's average selling price fell by 16% to USD 74 per tonne and sales volume decreased 12% to 8.1 Mt. Output decreased slightly to 8.9 Mt due to difficult mining conditions. At Hebi Zhong Tai (40%-owned by Banpu) in Henan Province, output also decreased slightly from 1.5 Mt to 1.3 Mt. In Mongolia, work continued on pilot projects and feasibility studies.



Energy Generation

Despite the Covid-19 pandemic, Banpu Power EBITDA in 2020 increased to USD 169 million, from around USD 145 million in 2019. Banpu Power has a combination of thermal power and renewable power assets in North Asia and the Greater Mekong region. The total operating capacity of Banpu Power's power generation assets on an equity-basis reached 3.1 equity gigawatts (GWe) by year end 2020, an increase of 22% compared to the previous year. This growth was due to the completion of the Shanxi Lu Guang power plant, two Japan solar projects (Yamagata and Yabuki), and the acquisition of the Vietnam wind project, Mui Dinh. The Company also has a pipeline of over 200 MW currently under development, due for commissioning between now and 2023. Banpu is well-positioned to reach its growth target of 6.1 GWe for its power business by 2025.

Thermal Power Business - Greater Mekong Region

Banpu Power has two major thermal 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, renamed HPC, a 1,878 MW coal-fired mine-mouth power plant in Laos.

In 2020, BLCP performed at a high level of plant efficiency with its Equivalent Availability Factor (EAF)

at 90%. BLCP's EBITDA was down on the year at USD 107 million though due to the availability payment structure decline.

HPC implemented a preventive maintenance program to improve reliability and ensure sustainable long-term performance. HPC had an EAF for the year of 82% despite the extended maintenance of unit 3 during the year. EBITDA decreased slightly by 3% year-on-year to USD 380 million.

Thermal Power Business - China

Banpu Power has three coal-fired combined heat-and-power (CHP) operations in China (Luannan, Zouping and Zhengding) with total capacity of 539 MWe. These CHP operations achieved an aggregate EBITDA of USD 43 million in 2020, a 57% increase on the previous year.

Construction of both Units 1 and 2 of the new 1,320 MW Shanxi Lu Guang coal-fired power plant has been completed, raising Banpu's total thermal power generation capacity to 2.4 GWe. Unit 2 is ready to commission and supply heat to Changzhi City by the first quarter of 2021, while Unit 1 is scheduled to supply power and heat by the second half of 2021.

Renewable Energy Business

Banpu's solar PV business includes approximately 407 MW of operating capacity: 177 MW in China, 88 MW in Japan and 142 MW from Sunseap. During the year, Banpu completed two new solar projects in Japan: 20 MW Yamagata project and 7 MW Yabuki project while Sunseap added another 74 MW to the portfolio. Banpu also has another 132 MW of new solar PV project capacity under development due for commissioning between now and 2023.

Banpu's solar business in China generated EBITDA of USD 22 million in 2020 (+15% year-on-year) supported by strong demand and favorable weather conditions. The average capacity factor remained stable at 14%. Power sold was 220 GWh, a 3% increase from 2019.

Banpu's solar business in Japan recorded cash distributions of USD 4 million, up 37% year-on-year, due to an increase in power sold from the COD of the Yamagata and Yabuki projects despite unfavorable weather conditions. The average capacity factor in 2020 was reported at 13%. Power sold was 129 GWh, an increase of 45% from 2019.

Banpu acquired the Mui Dinh wind farm in Vietnam with 38 MW of operating capacity and is developing an 80 MW onshore wind project in the south of Vietnam, in Soc Trang Province, called Vin Chau. Vin Chau phase 1's development progress is at 41%, having completed construction of access road for heavy equipment transportation, started piling work on turbine foundation and started construction of transmission line. The pre-feasibility study results of additional 50 MW of Vin Chau phase 2 and 3 had been submitted and is awaiting approvals.

Energy Technology

Solar Rooftop Business

Banpu NEXT has a committed solar rooftop portfolio of 249 MW, including a 48.6% stake in Sunseap. In 2020, Banpu NEXT exercised rights to purchase additional shares in Sunseap from USD 150 million, increasing shareholding in the company from 38.5% to 48.6%. Sunseap has a solar rooftop and floating solar portfolio of approximately 436 MW across Southeast Asia, China and Taiwan. Banpu's attributable equity interest in Sunseap is equivalent to around 212 MW from both solar rooftop and floating solar.

Energy Storage Systems Business

Banpu NEXT has a 47.7% shareholding in Durapower, a Singaporean battery manufacturing company focused on lithium-ion battery systems for the electric vehicle market. Durapower's production facilities are located in Suzhou in China. Durapower maintained its production capacity of 1 GWh in 2020, with plans to expand to 3.0 GWh by 2025.



Electric Vehicle Business

Banpu NEXT has a 21.5% stake in Japan's leading compact electric vehicle developer, FOMM and a 30.7% stake in an electric tuk-tuk company, Urban Mobility Tech (UMT). UMT also has an on-demand tuk-tuk sharing digital application. In 2020, Banpu supported 2,500 passengers daily with a ride-hailing initiative in partnership with tuk tuk sharing service provider MuvMi. We now have 98 electric vehicles under management. In 2020, we also launched and sold Thailand's first electric ferry.

Smart City and Smart Infrastructure Business

In September 2020, Banpu NEXT partnered with the Khon Kaen City Development Network to conduct

a feasibility study on building a comprehensive ecosystem of clean and smart energy services in the city. The study includes solar power and smart electricity transmission. Banpu NEXT also launched an AI-driven smart community platform in collaboration with Phuket Smart City to upgrade the city's systems for dealing with infectious diseases, crime, and environmental threats. Banpu is now engaged in five smart city projects, with plans to increase that number to nine by 2025.

Proprietary Technology Development

Banpu's digital transformation has intensified with the Covid-19 pandemic. Through its Digital Center of Excellence (DCOE) established in 2018, Banpu has put over 80 digital products into development. In 2020, exciting innovations included the Melak Digital Centre (MDC), a system that uses big data to analyze production processes and supply chain for Banpu's Indonesian control room; Global Procurement Excellence (GPE), a procurement system to improve cost efficiency; Geophysical Logging System (GLOG), an AI system which indicates best times and strategic locations for drilling; and SwitchDin, an energy management system for all Australian mines which uses Internet of Things (IoT), cloud platforms, and other cutting-edge technologies.

Corporate Social Responsibility

In 2020, alongside supporting educational, sports, social enterprise, charities and disaster relief projects, Banpu rapidly expanded its corporate social responsibility (CSR) program across its countries of operation to respond to critical challenges triggered by the Covid-19 pandemic.

In Thailand, in collaboration with Mitr Phol, Banpu established a joint foundation to deploy funding over USD 15 million for the procurement and supply of medical and health equipment, including negative pressure rooms, a Respiratory Care Unit (RCU) and Personal Protective Equipment (PPE). Banpu supported the Thai Red Cross Society to produce 400,000 'Blood Hero' masks to encourage Thais to donate blood, as blood donations fell significantly during the pandemic.

Banpu NEXT collaborated with UMT to provide electric three-wheelers to Chulalongkorn hospital to facilitate the transportation of patients, as well as with app-based car sharing service company HAUPCAR to provide a fleet of 50 electric vehicles with contactless service to transport medical personnel to patients too ill to visit the hospitals.

Economic impacts of the pandemic led the Company to drive social enterprises through 'UpImpact by Banpu Champions for Change' under Banpu Champions for Change program, a series of webinars and workshops to enhance social enterprises' skills by experts to support Thai social entrepreneurs generate income and run their businesses sustainably throughout the pandemic.

In China and Indonesia, Banpu supported local governments and communities through medical equipment donations and sponsorship. In the U.S. food supplies and donations were supplied to some of the hardest-hit communities in Denver.

For the 14th consecutive year, Banpu granted over USD 45,000 to schools in southern border provinces to support youth education and development.

Banpu and Thammasat University moved their Thammasat-Banpu Innovative Learning Program online, and covered topics including community development, life skills, and innovation in the classroom in their webinar. In November, the Company hosted Energy on Board activity by Banpu B-Sports Thailand. The activity involved an 'Energy Sustainability' workshop for university students who qualified to join board game design competition. In December, Banpu organized a special edition of 'Power Green Camp' for students to embark on a field trip to Kaeng Krachan National Park for learning and doing volunteer activities to encourage biodiversity conservation.

Environment, Social and Governance Performance

Banpu embraces the growing trend towards sustainable investment and best practice ESG reporting (Environmental, Social, Governance). Building sustainable stakeholder value through environmental care, social investment and best practice corporate governance has been at the heart of our philosophy for nearly four decades.

Banpu was honoured to have been listed on the Dow Jones Sustainability Indices (DJSI) in 2020 for the seventh consecutive year. The DJSI is managed by the world's most prestigious sustainability rating agency, RobecoSAM. Banpu has maintained its status as the global Industry Leader in the Coal & Consumable Fuels Industry with the top Total Sustainability Score in 2020. Banpu obtained top scores in all ESG areas for 2020 with an overall score three times the industry average.

During the year Banpu maintained its 'A' rating in the MSCI ESG Ratings 2020 assessment and was included in the Thailand Sustainability Investment (THSI) shortlist by the Stock Exchange of Thailand for a fifth consecutive year. Banpu was also pleased to achieve an 'Excellence' scoring in the Corporate Governance Report of Thailand Listed Companies

in 2020 as published by the Securities & Exchange Commission of Thailand (SEC), the Thai Institute of Directors Association (IOD) and the Stock Exchange of Thailand (SET).

Ensuring that we continue to improve our ESG performance - and that our transition to a Greener & Smarter future delivers sustainable returns to both shareholders and stakeholders alike, will remain a top priority throughout 2021 and beyond.

Strategic Review and Outlook

In 2015, we launched a new strategy designed to harness disruptive mega-trends for the long-term benefit of our shareholders and stakeholders, a strategy rooted in the objective of becoming a leading international versatile energy provider. To this end, Banpu has been actively implementing a transformation to a **'Greener & Smarter'** business model and business structure. The transformation has involved establishing a strong position in the U.S. shale gas sector, listing Banpu Power on the Stock Exchange of Thailand, expanding our renewable energy portfolio and launching Banpu NEXT, Banpu's flagship company for developing clean energy technology businesses.

Banpu has aligned its strategy with the United Nations Sustainable Development Goals (SDGs). We have set our own sustainable development goals for all core businesses including reductions in greenhouse gas emissions. By 2025, our aim is for lower carbon businesses to comprise more than 50% of our asset portfolio.

Gas is now a core Banpu business which we will continue to expand across the value chain with support from our strategic partnership with Oaktree Capital Management. In parallel, we plan to invest to ramp up production and capture upside from increasing gas prices and increase the reserve life of our gas assets through effective production development programs and improved cost efficiencies.

Banpu NEXT is leveraging the '3Ds' – digitalization, decentralization and decarbonization – to establish an integrated clean energy tech portfolio throughout Asia-Pacific: renewable energy generation, solar rooftop solutions, energy storage systems, energy management systems, e-mobility, smart infrastructure and electricity trading. Banpu NEXT 2025 growth targets include: 0.5 GW of solar rooftop capacity; 3.0 GWh per annum of energy storage systems production capacity; servicing 10,000 passengers daily with over 5,500 EVs; 100 e-ferries sold; 9 smart infrastructure projects; and 1,000 GWh per annum of electricity trading.

The Banpu group is proud to be a multi-cultural family with operations in ten countries around the world. To emphasize the importance of a people-centered organization in transition, since 2018 Banpu has redefined its corporate culture and named it **'Banpu Heart'**. Banpu Heart comprises three core values: **Passion** for our vision of leading the transition to ever more sustainable energy in Asia Pacific, realized through **Innovation** by harnessing new technologies and an Integrated Energy Solutions approach which emphasizes ecosystem-thinking and synergy-capture, with a real sense of urgency and **Commitment**. Going forward, we are dedicated to developing Sustainable People who embrace the Banpu Heart and Sustainable Partnerships which integrate and develop our resources globally to deliver Sustainable Energy Solutions. Banpu's ultimate strategic goal is simply **'Smarter Energy for Sustainability'**.

This is an exciting time to be part of the Banpu journey. It is a genuine privilege for me to serve Banpu's board of directors, management, staff, shareholders and stakeholders. I would like to thank you all for your active support and engagement in 2020, and look forward to working with you all again in 2021.

SUMMARY OF MAJOR CHANGES AND DEVELOPMENT IN 2020 AND MAJOR CURRENT EVENTS



20 February 2020

The Board of Directors Meeting approved the Company's dividend payment for the 2020 operating profits during 1 January – 31 December 2019, at a dividend rate of THB 0.60 per share. Previously, an interim dividend had been paid out to shareholders for the operating profits during 1 January – 30 June 2019, at a rate of THB 0.35 per share on 27 September 2019. The remaining dividend for the operating profits during 1 July – 31 December 2019 was proposed to be paid out to the shareholders at a rate of THB 0.25 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 2020.

27 February 2020

Banpu NEXT Co., Ltd. (Banpu NEXT) was completely established, through an amalgamation between Banpu Infinergy Co., Ltd. (BPIN), Banpu's 99.99% owned subsidiary, and Banpu Renewable Energy Co., Ltd. (BRE), an indirect subsidiary 78.57% owned by Banpu through Banpu Power Public Company Limited (BPP), which holds 99.99% of BRE. Banpu and Banpu Power each hold an equal proportion of 50% of the total issued and outstanding shares in Banpu NEXT with its registered capital of THB 7,919 million.

10 March 2020

The Company completed a share repurchase program through the Stock Exchange of Thailand, covering the period from 3 September 2019 to 10 March 2020. The total number of 87,344,000 shares were repurchased, equal to 1.69% of the total issued and paid-up shares, with the value of THB 1,157.14 million.



8 April 2020

The Board of Directors Meeting approved the appointment of Mr. Piriya Khempon as a Board member whose term of office is equal to Mr. Sudiarso Prasetyo, who resigned as he has reached the age of retirement. The practice follows Banpu's corporate governance principles that set mandatory retirement of all directors at age 72.

15 April 2020

Banpu North America Corporation (BNAC), a subsidiary of Banpu, adjusted the Purchase and Sales Agreement details to acquire a gas operation in the Barnett Shale in the U.S. The value of investment capital was changed from USD 770 million to USD 570 million, with the future net worth of benefits for the seller not exceeding USD 260 million in 4 years, from 1 January 2021 – 31 December 2024. The value of added benefits depends on the annual averaged Henry Hub price starting from USD 2.75 per MMBtu, or the average yearly West Texas Intermediate (WTI) price starting from USD 50 per barrel. The purchase and sale's completion date was changed from by the second quarter of 2020 to by 31 December 2020.

1 May 2020

BNAC, a subsidiary of Banpu, converted its interest as a limited partner in BKV Oil & Gas Capital Partners, L.P., to a capital contribution in BKV Corporation (BKV). BKV was registered under the U.S. laws with its authorized share capital of USD 1,500 million. After the restructuring, BANPU owns 95.2% of BKV's stake through BNAC and has indirect control of BKV subsidiaries, including BKV Chaffee Corners, LLC., BKV Chelsea, LLC., BKV Operating, LLC., and BKV Barnett, LLC at an equal shareholding percentage. As part of this transaction, Banpu, through BKV, also indirectly holds the same shareholding percentage in Kalnin Ventures LLC., a limited liability company established to provide investment management support services, which being integrated into a part of a Banpu group.



19 June 2020

The 2020 Annual General Shareholders' Meeting approved the increase of debenture limit and offering of debentures with a total value of not exceeding THB 20,000 million to replace the previously approved limit which shall not be re-issued.

26 June 2020

Banpu NEXT, a Banpu's subsidiary, established its new subsidiary – Banpu NEXT Green Leasing Company Limited – to provide energy services, leasing, hire purchase, and services related to the electric vehicle business.

3 August 2020

BRE Singapore Pte. Ltd. (BRES), a subsidiary of Banpu NEXT, entered into an acquisition agreement of the 37.6-MW El Wind Mui Dinh Wind Farm in Ninh Thuan Province, Vietnam. The value of the acquisition deal was USD 66 million, or approximately THB 2,065 million, which will be equally paid by Banpu and Banpu Power's internal cash flow. The power plant achieved the commercial operation date (COD) on 23 April 2019 and is entitled to Feed-in Tariff (FiT) scheme of US Cents 8.5 per kWh. It supplies electricity through the national grid system under the 20-year Power Purchase Agreement (PPA) with Vietnam Electricity (EVN).



El Wind Mui Dinh Wind Farm
in Ninh Thuan Province, Vietnam.



28 August 2020

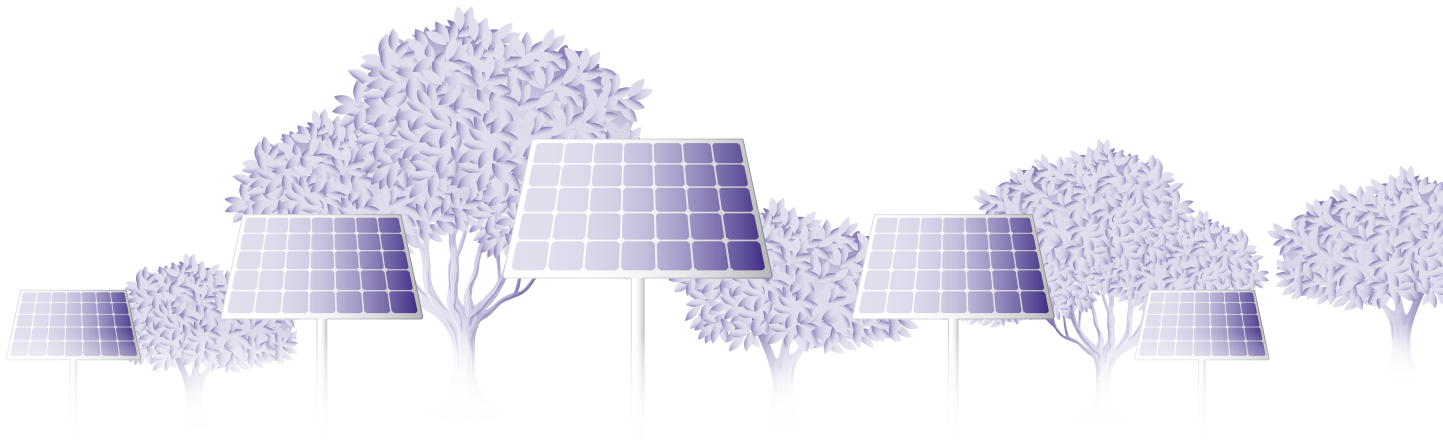
The Board of Directors Meeting approved the Company's reduction of the paid-up registered share capital by deducting 87,344,000 shares, accounting for 1.69% of the total paid-up shares. It approved the interim dividend payments from accumulated profits and operating profits for the period from 1 January – 30 June 2020 at the rate of THB 0.15 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 25 September 2020.

23 September 2020

The Company decreased its registered capital by writing off 87,344,000 repurchased equity shares and amended the registered capital with the Department of Commerce from the registered and paid-up 5,161,925,515 shares to 5,074,581,515 shares at a par value of THB 1.

1 October 2020

BKV, a subsidiary of Banpu, completed its acquisition of assets in the Barnett Shale in the U.S., with a transaction of USD 570 million. Banpu was entitled to deduct cash flow from the Barnett Shale's operation, including revenue enhancements and other expenses since 1 September 2019 for a total of USD 80.2 million, from the total investment. As Banpu had already paid a deposit of USD 170 million, the cash balance paid on 1 October 2020 was USD 319.8 million, equivalent to approximately THB 10,105 million.



19 November 2020

Banpu Renewable Singapore Pte. Ltd. (BRS), a subsidiary of Banpu, announced that the 20-MW Yamagata Solar Power Plant in Yamagata Prefecture, Japan, in which it invested 100% stake under TK structure, achieved Commercial Operation Date (COD) as planned on 16 November 2020. Yamagata Solar Power Plant entered into a Purchase and Sale Agreement with Tohoku Electric Power Co., Inc. with a Feed-in Tariff (FiT) scheme for 20 years at the price of JPY 36 per kWh. The power plant will supply electricity to approximately 5,000 households. It was then renamed as “Kawanishi Dahlia Solar Power Plant”.



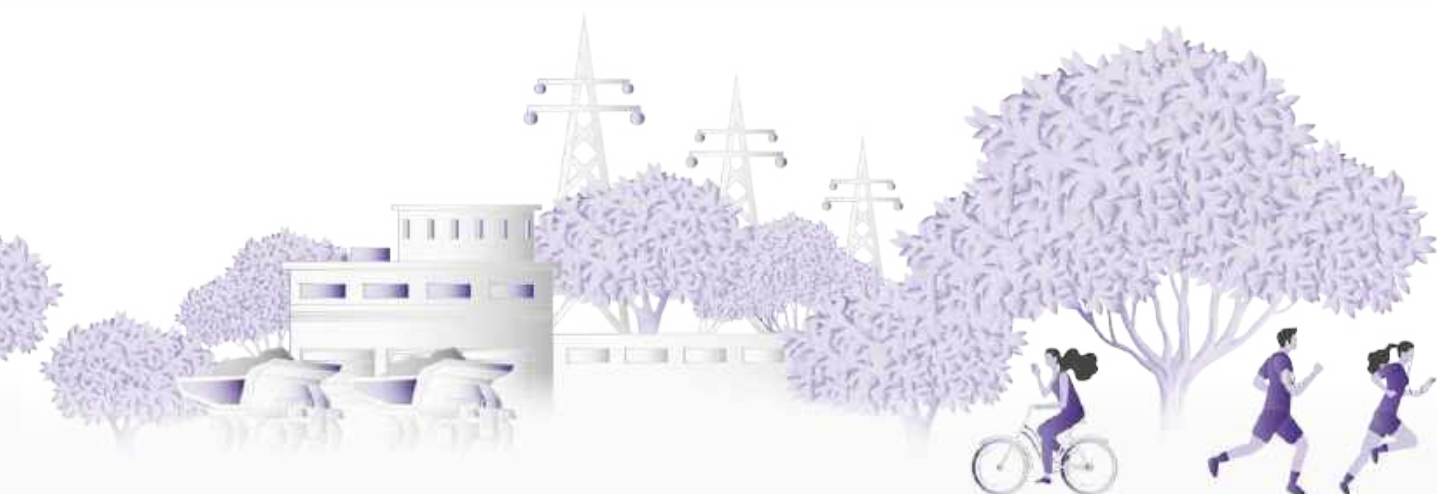
Yamagata Solar Power Plant
in Yamagata Prefecture, Japan,

16 December 2020

Aizu Energy Pte. Ltd. (AZE), a subsidiary of Banpu, announced that the 7-MW Yabuki Solar Power Plant in Fukushima Prefecture, Japan, in which it invested 75% stake under TK structure, achieved COD as planned. Yabuki Solar Power Plant had entered into a Purchase and Sale Agreement with Tohoku Electric Power Co., Inc. with a Feed-in Tariff (FiT) scheme for 20 years at the price of JPY 36 per kWh. The power plant will supply electricity to approximately 1,700 households. The power plant was later renamed as “Sawadee Yabuki Hatsudensho Solar Power Plant”.



Yabuki Solar Power Plant
in Fukushima Prefecture, Japan



17 December 2020

BKV, a subsidiary of Banpu, received USD 100 million investment in the Company's preferred stocks from Oaktree Capital Management L.P. (Oaktree), who pledged further investment in BKV upon opportunities in the natural gas-related business in the U.S..

The strategic partnership with Oaktree brings additional support towards realizing BKV's aspiration of becoming a leading in technology-driven natural gas exploration and production (E&P), in line with Banpu's goal to continually and sustainably expand its natural gas business in the U.S..

25 December 2020

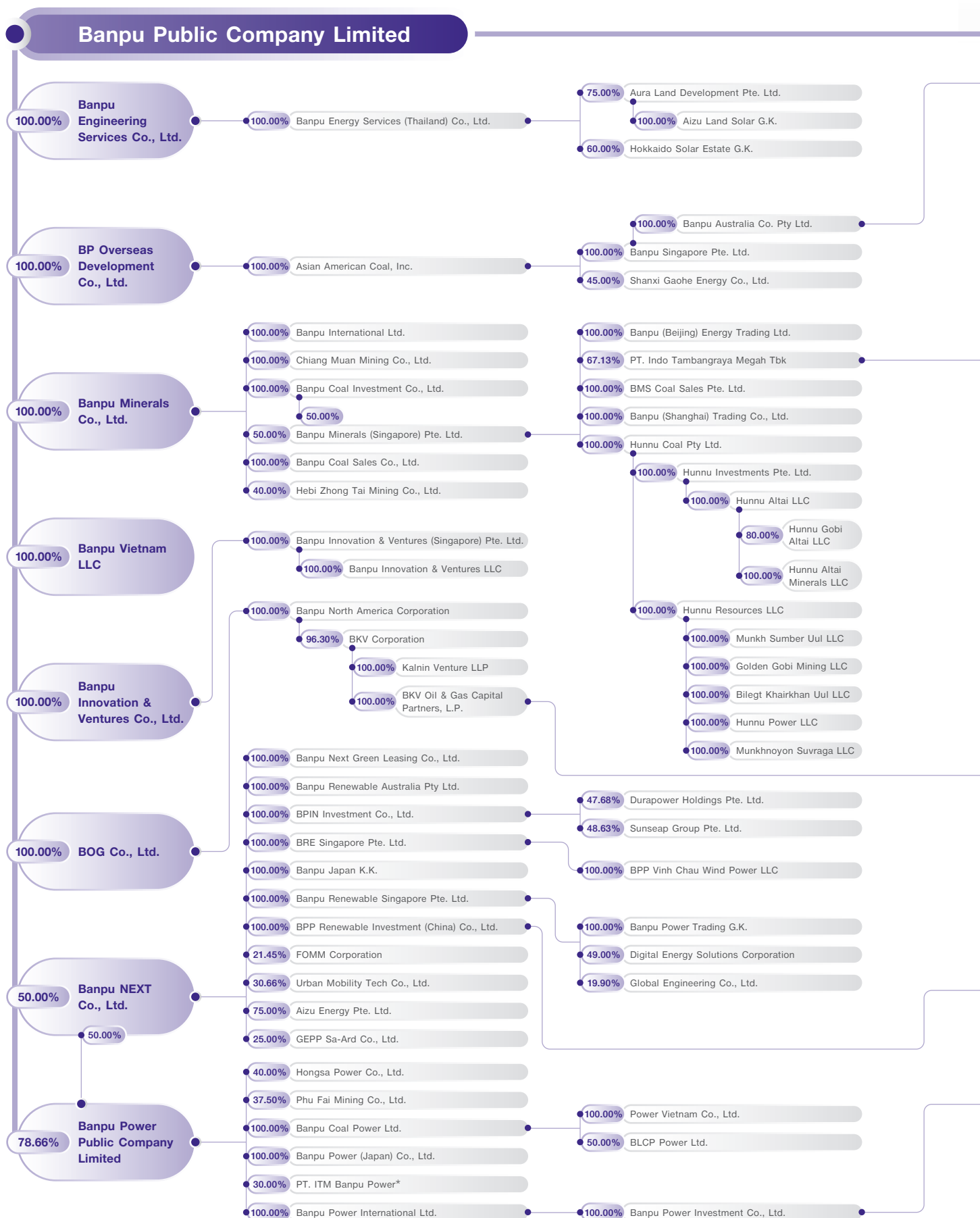
TRIS Rating Co., Ltd. affirmed credit ratings of Banpu Public Company Limited and senior unsecured debentures at A+ with a stable rating outlook. The ratings continue to reflect the Company's leading position in the coal industry in the Asia-Pacific region, diverse customer base, geographically diverse coal reserves, reliable stream of income from power business, and strategic move to be an international versatile energy provider.

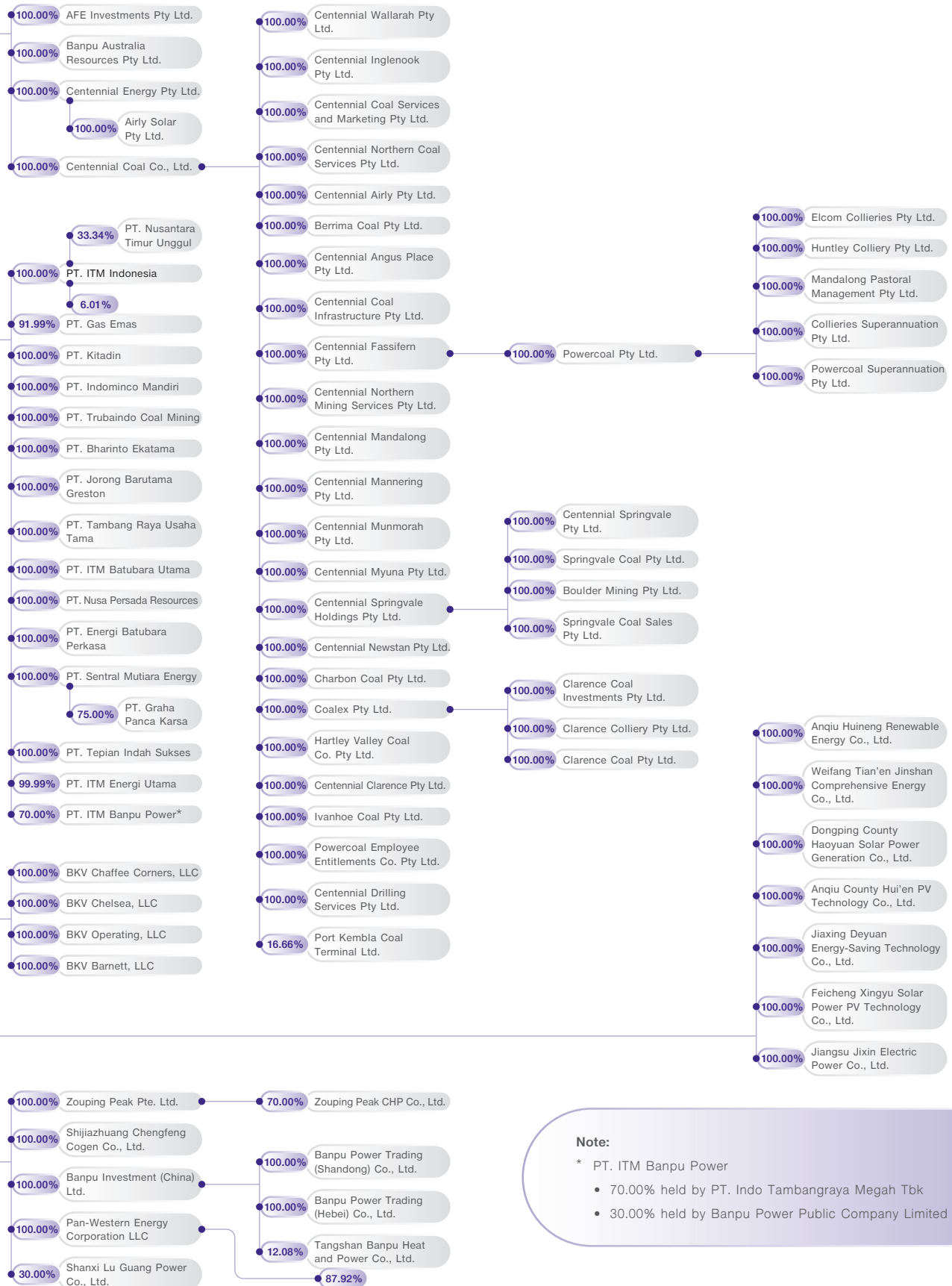
22 February 2021

The Board of Directors Meeting approved the Company's dividend payment at a rate of THB 0.30 per share for the 2020 operating results from 1 January – 31 December 2020, of which an interim dividend at the rate of THB 0.15 per share was paid out on 25 September 2020. The remaining THB 0.15 per share dividend for the operating results from 1 July – 31 December 2020 was to be paid out. The Meeting thus proposed the Company to pay a dividend at the rate of THB 0.15 per share from accumulated profits and operating profits from 1 July – 31 December 2020, which are appropriated from the corporate tax-exempted profits, on which shareholders are not entitled to tax credits. The dividend payment is scheduled on 30 April 2021.

BANPU GROUP STRUCTURE

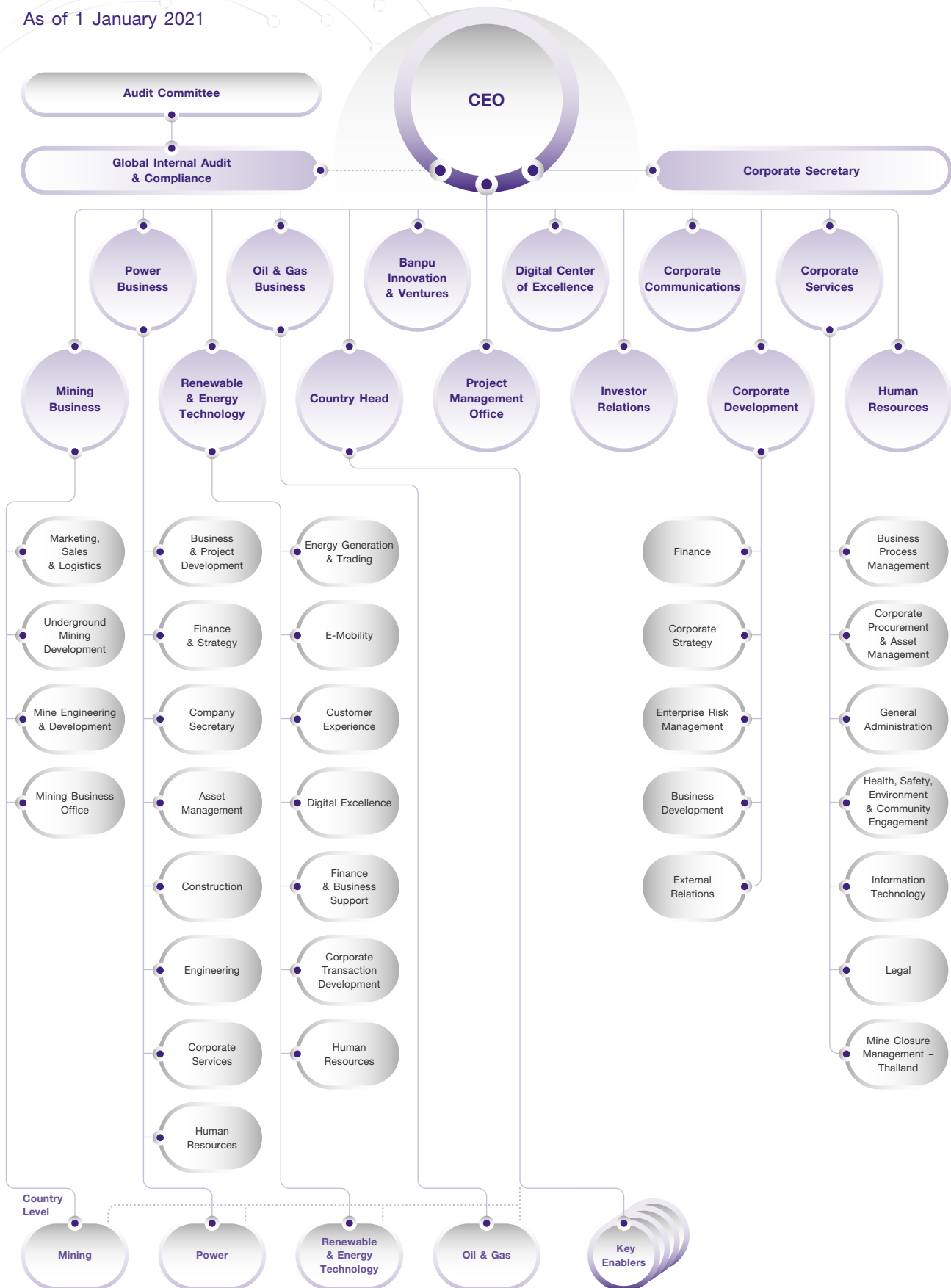
As of 31 December 2020





ORGANIZATIONAL STRUCTURE

As of 1 January 2021



MANAGEMENT STRUCTURE

The Company's management structure as of 31 December 2020 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 38% 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 Vongkusolkrit	Chairman of the Board of Directors
2. Mr. Teerana Bhongmakapat	Chairman of the Audit Committee/ Independent Director
3. Mr. Rawi Corsiri	Chairman of the Corporate Governance and Nomination Committee/ Director
4. Mr. Buntoeng Vongkusolkrit	Chairman of the Compensation Committee/ Director
5. Mr. Suthad Setboonsarng	Independent Director
6. Mr. Pichai Dusdeekulchai	Independent Director
7. Mr. Teerapat Sanguankotchakorn	Independent Director
8. Mr. Piriya Khempon	Independent Director*
9. Mr. Anon Sirisaengtaksin	Director

10. Mr. Metee Auapinyakul	Director
11. Mr. Ongart Auapinyakul	Director
12. Mr. Verajet Vongkusolkrit	Director
13. Ms. Somruedee Chaimongkol	Director

Remarks: Board of Director Meeting 4/2020 appointed Mr. Piriya Khempon to be new Director effective from 8 April 2020 onwards.

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 Vongkusolkrit, 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 Chairman of the Board of Directors

To ensure effective management and clear division of duties over Banpu's policy formulation and operation, the role to lead the Board, and the supervision of management's performance, Banpu stipulates that the Chairman of the Board of Directors and the Chief Executive Officer must not be the same person. The Chairman of the Board of Directors' duties and responsibilities are to convene the Board of Directors and Shareholders meeting, determines the agenda for Board meetings together with the Chief Executive Officer, and in the case of an equality of votes, the Chairman of the Board of Directors shall give the casting vote.

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 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 2020, the Board of Directors attended seminars and trainings as follows:

Name	Training Course/ Seminar	Institution/ Speaker	Date of Training/ Seminar
Mr. Chanin Vongkusolkrit (Chairman)	Knowledge Sharing: Update the Trends for Energy Generation Markets and Investment Opportunity	Banpu Public Company Limited	25 September 2020
	Knowledge Sharing: Board Effectiveness in Accordance with New CG Code	Mr. Kulvech Janvatanavit Thai Institute of Directors (IOD)	5 October 2020
	Knowledge Sharing: Global Megatrends	Dr. Somprawin Manprasert	5 October 2020

Name	Training Course/ Seminar	Institution/ Speaker	Date of Training/ Seminar
Mr. Teerana Bhongmakapat (Independent Director, Chairman of the Audit Committee and Member of the Compensation Committee)	<ul style="list-style-type: none"> IT Security Awareness for Top Management 	ACIS Professional Center Co., Ltd.	30 November 2020
	<ul style="list-style-type: none"> Director's Briefing "Corporate Strategy Beyond the Crisis, a Chairman/ Board Perspective" 	Thai Institute of Directors (IOD) and Bain & Company	17 December 2020
Mr. Rawi Corsiri (Director, Chairman of the Governance and Nomination Committee)	<ul style="list-style-type: none"> Knowledge Sharing: Update the Trends for Energy Generation Markets and Investment Opportunity 	Banpu Public Company Limited	25 September 2020
	<ul style="list-style-type: none"> Knowledge Sharing: Board Effectiveness in Accordance with New CG Code 	Mr. Kulvech Janvatanavit Thai Institute of Directors (IOD)	5 October 2020
	<ul style="list-style-type: none"> Knowledge Sharing: Global Megatrends 	Dr. Somprawin Manprasert	5 October 2020
Mr. Buntoeng Vongkusolkrit (Director and Chairman of the Compensation Committee)	<ul style="list-style-type: none"> Executive Seminar 2020 "Building Profitable and Sustainable Growth" 	Mitr Phol Sugar Corporation., Ltd.	16 - 17 October 2020
Mr. Suthad Setboonsarng (Independent Director, Member of the Audit Committee and Member of the Compensation Committee)	<ul style="list-style-type: none"> The 58th Philippine Economic Society (PES) Annual Meeting and Conference "Recent Rice Sector Reforms in Southeast Asia" 	Philippines Economic Society (PES)	9 November 2020
	<ul style="list-style-type: none"> The 3rd East Asia Energy Forum "Role of Carbon Capture Utilization and Storage (CCUS)/ Carbon Recycling in ASEAN/ East Asia" 	The Economic Research Institute for ASEAN and East Asia (ERIA), The Energy Research Institute Network (ERIN) and The Ministry of Industry-Vietnam	17 November 2020
Mr. Pichai Dusdeekulchai (Independent Director and Member of the Audit Committee)	<ul style="list-style-type: none"> Director Briefing "The Roles of Directors during COVID-19: Financial Reporting, Leadership and Beyond" 	Thai Institute of Directors (IOD) and KPMG Thailand	12 June 2020

Name	Training Course/ Seminar	Institution/ Speaker	Date of Training/ Seminar
Mr. Teerapat Sanguankotchakorn (Independent Director and Member of the Compensation Committee)	<ul style="list-style-type: none"> Director Briefing "The Roles of Directors during COVID-19: Financial Reporting, Leadership and Beyond" 	Thai Institute of Directors (IOD)	12 June 2020
	<ul style="list-style-type: none"> Board War Room "Personalized Marketing vs Data Privacy: Engaging your Customers While Protecting their Identities" 	Thai Institute of Directors (IOD)	10 July 2020
	<ul style="list-style-type: none"> Director Briefing "Finding Creative Solutions to Business Dispute during Pandemic Time" 	Thai Institute of Directors (IOD) and Thailand Arbitration Center	14 July 2020
Mr. Piriya Khempon (Independent Director and Member of the Governance and Nomination Committee)	<ul style="list-style-type: none"> Director Certification Program (DCP#298/2020) 	Thai Institute of Directors (IOD)	September - November 2020
Mr. Anon Sirisaengtaksin (Director and Member of the Governance and Nomination Committee)	<ul style="list-style-type: none"> 2020 PTIT Special Lecture "Thailand's Density: Water Crisis and Development Philosophy" 	Petroleum Institute of Thailand	7 August 2020
Mr. Metee Auapinyakul (Director)	<ul style="list-style-type: none"> Knowledge Sharing: Update the Trends for Energy Generation Markets and Investment Opportunity 	Banpu Public Company Limited	25 September 2020
	<ul style="list-style-type: none"> Knowledge Sharing: Board Effectiveness in Accordance with New CG Code 	Mr. Kulvech Janvatanavit Thai Institute of Directors (IOD)	5 October 2020
	<ul style="list-style-type: none"> Knowledge Sharing: Global Megatrends 	Dr. Somprawin Manprasert	5 October 2020
Mr. Ongart Auapinyakul (Director)	<ul style="list-style-type: none"> Top Executive Program in Creative & Amazing Thai Services (TOPCATS 2) 	University of the Thai Chamber of Commerce	February - November 2020
Mr. Verajet Vongkusolkrit (Director and Member of the Governance and Nomination Committee)	<ul style="list-style-type: none"> Boards That Make a Difference (BMD#10/2020) 	Thai Institute of Directors (IOD)	10 - 11 August 2020
	<ul style="list-style-type: none"> Executive Seminar 2020 "Building Profitable and Sustainable Growth" 	Mitr Phol Sugar Corporation., Ltd.	16 - 17 October 2020

Name	Training Course/ Seminar	Institution/ Speaker	Date of Training/ Seminar
Ms. Somruedee Chaimongkol (Director and Chief Executive Officer)	<ul style="list-style-type: none"> Knowledge Sharing: Update the Trends for Energy Generation Markets and Investment Opportunity 	Banpu Public Company Limited	25 September 2020
	<ul style="list-style-type: none"> Knowledge Sharing: Board Effectiveness in Accordance with New CG Code 	Mr. Kulvech Janvatanavit Thai Institute of Directors (IOD)	5 October 2020
	<ul style="list-style-type: none"> Knowledge Sharing: Global Megatrends 	Dr. Somprawin Manprasert	5 October 2020

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, and 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 that 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. Suthad Setboonsarng Member
3. Mr. Pichai Dusdeekulchai Member

The current Audit Committee's term of office is three years, from May 2019 to April 2022. The Audit Committee has knowledge and experience in accounting and finance. Mr. Teerana Bhongmakapat, 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 27 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/corporate-governance/the-committee/sub-committees/?type=audit-committee)

3. The Corporate Governance and Nomination Committee

consists of:

1. Mr. Rawi Corsiri	Chairman of the Corporate Governance and Nomination Committee
2. Mr. Piriya Khempon	Member
3. Mr. Anon Sirisaengtaksin	Member
4. Mr. Verajet Vongkusolkit	Member

The current Corporate Governance and Nomination Committee's term of office is three years, from May 2019 to April 2022.

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/corporate-governance/the-committee/sub-committees/?type=corporate-governance-and-nomination-committee)

4. The Compensation Committee

consists of:

1. Mr. Buntoeng Vongkusolkit	Chairman of the Compensation Committee
2. Mr. Teerana Bhongmakapat	Member
3. Mr. Suthad Setboonsarng	Member
4. Mr. Teerapat Sanguankotchakorn	Member

The current Compensation Committee's term of office is three years, from May 2019 to April 2022.

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/corporate-governance/the-committee/sub-committees/?type=compensation-committee)

5. The Management*

consists of:

1. Ms. Somruedee Chaimongkol	Chief Executive Officer
2. Mr. Somsak Sithinamsuwan	Head of Mining Business
3. Mr. Kirana Limpaphayom	Head of Power Business

4. Mr. Thiti Mekavichi	Head of Oil and Gas Business**	2. Mr. Suthad Setboonsarng	Independent Director
5. Mr. Sutee Sukruan	Head of Corporate Development	3. Mr. Pichai Dusdeekulchai	Independent Director
6. Ms. Arisara Sakoongaravek	Chief Financial Officer	4. Mr. Teerapat Sanguankotchakorn	Independent Director
7. Mr. Varoj Limjaroon	Head of Human Resources	5. Mr. Piriya Khempon	Independent Director
8. Mr. Jirameth Achcha	Head of Corporate Services		
9. Ms. Udomlux Olarn	Head of Corporate Communications***		

Note:

* Top executives are the next four executives after CEO.

** Mr. Thiti Mekavichi was registered as company's management with the Securities and Exchange Commission on 1 January 2021.

*** Ms. Udomlux Olarn retirement on 1 January 2021.

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 38% of the Company's Board of Directors members

are as follows:

1. Mr. Teerana Bhongmakapat	Independent Director
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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 Business¹

Market and Competition

Market

1. Global Coal Market

Demand for imported coal in 2020 contracted sharply due to lockdown measures in countries worldwide to control the outbreak of Coronavirus (COVID-19). There have been restrictions on social activities, non-essential travel, and business activities. Most economic activities were disrupted, and electricity demand was declining rapidly, resulting in an 8.1% decline in demand for imported coal from the previous year.

The sharp economic contraction caused prices of oil, natural gas, and coal to fall drastically, enabling gas to compete with coal in Europe and for some periods in Asia. As a result, gas-fired power plants increase their operations while coal-fired power generation was reduced, dragging down coal consumption, especially in Europe.

The People's Republic of China remained the world's largest coal importer despite its government's move to limit imports to protect domestic coal business. The impact of the COVID-19 pandemic on China since the beginning of the year had reduced the country's coal demand, while government measures against the outbreak lowered coal production even further. Moreover, imported coal was far cheaper than domestic coal, leading to a huge volume of coal imports in the first half of 2020.

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

The Chinese government had tried to revive the country's economy since mid-February; however, the public still mostly avoided economic activities, resulting in a slow recovery. Since May 2020, electricity demand had rebounded to its pre-crisis level, driven by hot weather and lower hydropower production capacity. The coal-fired power plants' production was also back at the level prior to the COVID-19 crisis.

Several coal mining accidents in China led the Chinese government to enforce mine safety regulations. Many coal mines had to temporarily suspend or reduce their production capacity, resulting in coal production failing to keep up with demand recovery. Coal prices in China had risen rapidly, especially during the year-end winter months when coal demand increased significantly. In short, domestic production constraints and strict import controls sent China's coal prices up further.

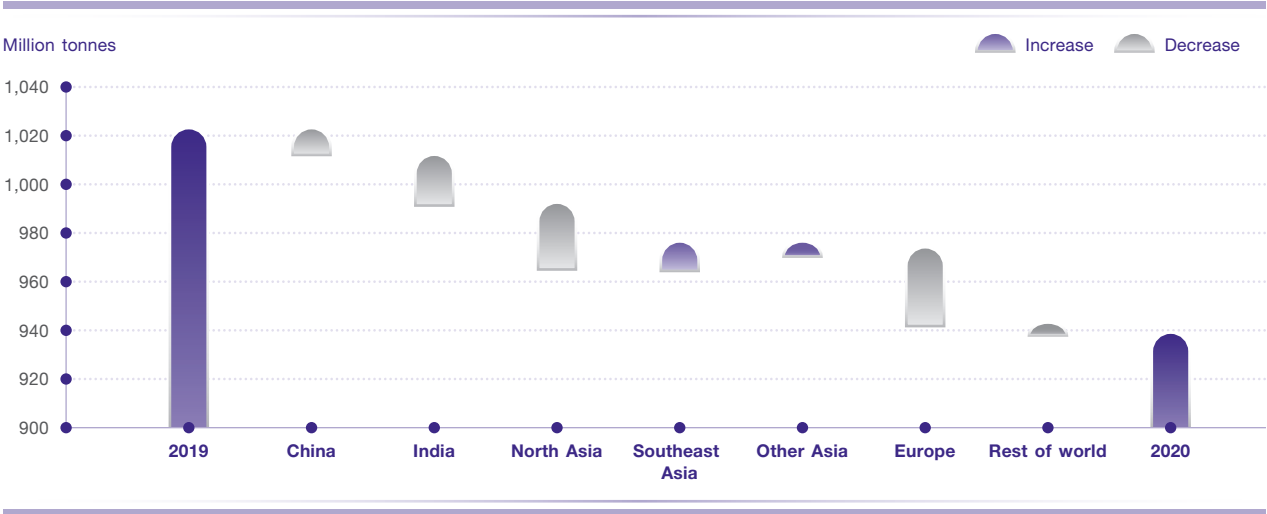
China-Australia trade disputes have been continuing since last year. China has delayed customs clearance of Australian coal imports for a much longer period than any other country, thus, adding costs to Australian coal producers. Nevertheless, coal imports from Australia remained high. Just before the end of 2020, China therefore tightened its restrictions by imposing a ban on coal imports from Australia and asked importers to stop importing Australian coal. Buyers who had purchased Australian coal had to sell off their coal cargoes to other markets, causing Australian coal prices to plunge. After selling off their coal cargoes, Chinese buyers turned to alternative sources for coal, causing coal prices from other countries except Australia to rise rapidly. As a result, more coal buyers from other countries turned to Australian coal, driving up Australian coal prices.

In 2020, Indian coal imports also contracted due to its government's lockdown measures between late March and May to curb the spread of COVID-19. A dramatic drop in electricity demand during the lockdown caused demand for coal to shrink. However, coal production did not suffer much as it

was an essential activity exempted from the measures, leading to an oversupply of domestic coal. Yet, there was a demand for imported coal from coal-fired power plants that are distant from coal sources. Likewise, the steel and cement industries preferred imported

coal with a high calorific value, especially the cement producers who turned to coal as a replacement for expensive petroleum coke. In India, economy picked up slowly because Covid-19 infection rates remained high, stagnating the demand for imported coal.

2020 Thermal coal import demand changes



Source: Marketing, Sales and Logistics Analyst, Banpu Plc

Japan's demand for imported coal decreased due to lockdown measures following the government's declaration of the state of emergency from April to May to control the spread of COVID-19. Although economic recovery was slow as the number of new cases remained high, coal demand decreased only slightly as most nuclear power plants are during a temporary shutdown.

Coal imports in the Republic of Korea (South Korea) fell in early 2020 as the government restricted coal-fired power generation from December 2019 to March 2020 to reduce air pollution. Besides, there was an increase in nuclear power generation. In May 2020, South Korea announced lockdown measures to stop the COVID-19, dragging down electricity demand to the lowest level in five years. From August to November, prices of liquefied natural gas (LNG) under oil-linked contracts fell sharply after the decrease in oil prices three to six months earlier. Lower LNG prices enabled

LNG power plants to compete with coal-fired plants. However, by the end of the year, LNG prices rose thanks to the increased winter demand. Consequently, the cost of electricity from coal-fired plants became lower than that from gas-fired plants. Nevertheless, in December, since the government restricted coal-fired power generation, consumption of imported coal fell sharply in the past year.

Taiwan announced lockdown measures to prevent the spread of COVID-19 fairly early. So, the country was mildly affected by the COVID-19, and its economy rebounded to the pre-crisis level relatively quickly. Therefore, its coal consumption declined only slightly.

Coal demand in Southeast Asian countries was growing, particularly in the Socialist Republic of Vietnam, where coal imports rose significantly over the past year. Vietnam saw commercial commencement of new coal-fired power plants as its electricity demand

increased, while domestic coal production slowed down. Vietnam was not much affected by COVID-19 because the government had declared preventive measures fairly early. Most Southeast Asian countries also imported more coal despite economic contraction, except the Philippines, which imported less coal as a result of strict lockdown measures.

The Islamic Republic of Pakistan saw an increase in coal imports despite the enforced lockdown measures as a new coal-fired power plant commenced commercial operations at the end of the year.

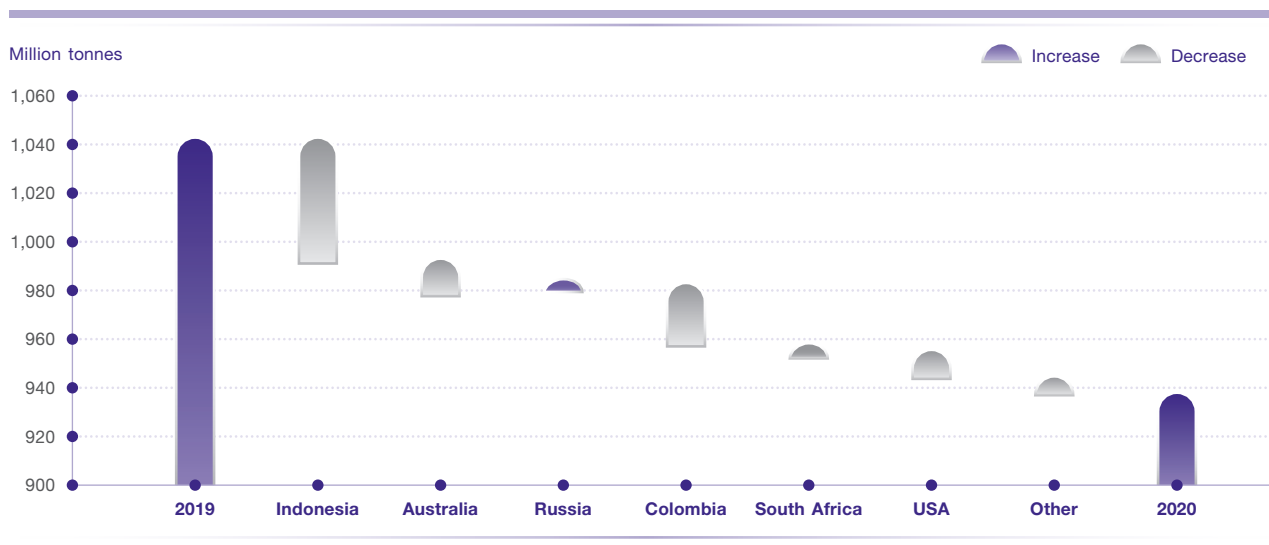
In 2020, coal imports in the European market plummeted due to falling electricity demand caused by lockdown measures to control the spread of COVID-19. Record-low natural gas prices and a steady increase in power generation from renewable sources lowered the demand for coal. Besides, many European countries have accelerated their plans to phase-out coal use in power plants to meet their greenhouse gas emissions reduction targets. Many countries set a target to end coal use in power generation by 2025, which will result in a significant drop in European coal consumption.

In 2020, coal exports have declined, mainly driven by the plunge in global coal demand in spite of the fact that coal mines were exempted from Covid-19 lockdown in almost all countries. Indonesian coal exports dropped the most as the demand for imported coal declined in major importing countries such as China and India.

Australia's coal exports also dropped, driven by trade disputes with China, leading to China's ban on imports of Australian coal. Therefore, Australian coal producers were trying to sell coal to other markets to offset the ban, but the effort could only partially fill the gap because China's coal imports were extremely high.

Coal producers in the Republic of Colombia reduced their production capacity. Many coal mines temporarily suspended their production due to lower coal prices in Europe which is a Colombia's primary market. There has been a strike at some coal mines. Apart from that, coal producers had to comply with the government's COVID-19 control measures. These have caused Colombian coal export volume to drop significantly, making it the country that suffered most from the slump in coal exports after Indonesia.

2020 Thermal coal export supply changes



Source: Marketing, Sales and Logistics Analyst, Banpu Plc

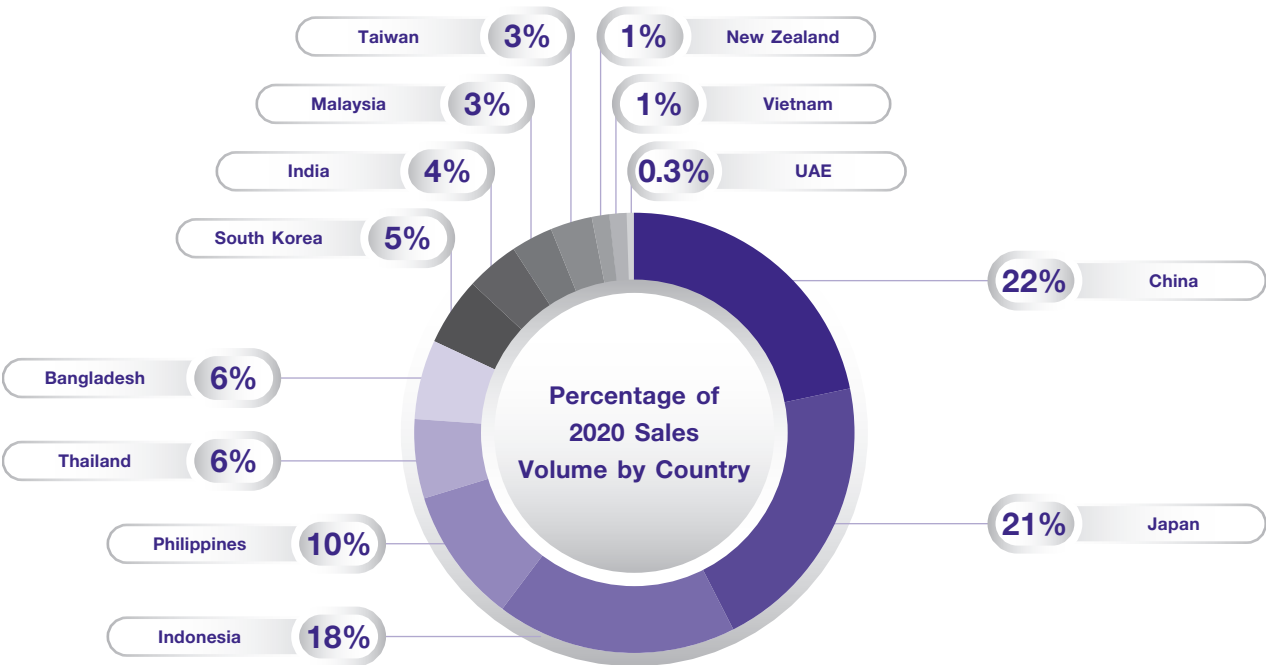
Coal producers in the Russian Federation were trying to increase their exports to Asia as the European market shrank. At the same time, depreciation of Ruble has made Russian coal more competitive in Asian markets. With coal production problems in Colombia, Russia's coal exports to Europe fell only slightly. Russia was the only country enjoying more exports than in the past year despite the sharp demand contraction for imported coal in global market. However, limited rail and terminal capacity has restricted Russian coal exports to the Asian markets. As a result, the growth of Russian coal exports to Asia remained modest.

The Republic of South Africa suffered a mild impact of COVID-19 in the past year as the demand for premium coal from Indian steel and cement industries remained high while the amount of premium coal export was limited. At the end of 2020, South Africa benefited from China's ban on imports of Australian coal as more Chinese buyers turned to South Africa for coal imports.

Last year's U.S. coal exports decreased due to lower demand for coal in Europe as its primary market. Global coal prices which dropped below production cost prompted U.S. coal producers to reduce their exports.

In 2020, Banpu's sales from its Indonesian coal mines amounted to 21.2 million tonnes, a decrease of 16.1% from the previous year caused by a sharp contraction of global coal demand and a drastic decline in coal prices. The largest share of 22% went to China, while the second and third largest shares of 21% and 18%, went to Japan and Indonesia, respectively. The Company increased coal sales to Indonesia by 14% from the previous year because Indonesian buyers were willing to pay higher prices in the situation where global coal prices flopped and coal demand from the steel industry soared. The Company increased coal sales to the Philippines and an emerging market like Bangladesh by 23% and 12%, respectively over the past year as they were high-paying markets.

Percentage of 2020 Sales Volume by Country



2. Coal Market in the Republic of Indonesia

Indonesia's coal production in 2020 was significantly lower than the previous year due to a sharp decline in global coal demand following preventive measures against COVID-19 by international governments. According to its Ministry of Energy and Mineral Resources, Indonesian coal production in 2020 totaled 557 million tonnes, decreasing by 9.5% from the previous year. Nonetheless, coal production was only slightly affected given coal being a primary commodity exempted from the government's COVID-19 control measures.

According to Indonesia's Customs Department, coal exports in the first ten months of 2020 were at 329 million tonnes, falling as much as 14.1% year-on-year. Indonesian exports started to recover around year-end as demand for coal imports from China and India increased. The Company projected Indonesian annual coal exports at approximately 404 million tonnes or 72% of Indonesia's total coal production, a decrease of 12% from the past year,. The country's key export markets were China, India, Japan, South Korea, Taiwan, Southeast Asia, and South Asia.

Coal demand in Indonesia in 2020 was also affected by the COVID-19 pandemic. The Indonesian government enforced nationwide lockdown measures from April to May, restricting social activities and travel. Many industrial plants had been temporarily shut down while electricity demand subsided. However, coal consumption in power plants decreased only slightly as new coal-fired power plants reached their COD, coupled with coal demand from COD of new steel plants. Banpu estimated that Indonesia's domestic coal demand in 2020 was at approximately 136 million tonnes, decreasing 1.4% from last year. 71% of the demand came from power sector, 10% from cement industry, 9% from iron and steel industry, and the rest from other sectors such as textiles, fertilizers, paper, and petrochemicals.

In 2020, Banpu's coal sales in Indonesia were at 3.8 million tonnes, contributing to 18% of the Company's total sales from its Indonesian coal mines, or a 2.8% market share of Indonesia's coal demand. Major buyers were iron and steel plants, accounting for 55% of the total sales. The rest were coal-fired power plants and cement industry at 39% and 6%, respectively.

Last year, the Indonesian government amended its mining law, allowing companies holding a Coal Contract of Work (CCoW) to convert to Special Business Mining License (IUPK). The license is extendable twice for a period of 10 years each with no tender bidding required. The new law also lifted the previous restriction of coal mining production operation area of 15,000 hectares per license.

Besides, the Indonesian government announced a new trade regulation requiring import coal buyers to use only national (Indonesian flagged) carriers for coal transportation. However, just before the regulation came into force on 1 May 2020, the government amended the regulation to only apply to vessels with a capacity of not exceeding 10,000 deadweight tonnage² (DWT) as the number of Indonesian barges was not sufficient for transporting all cargoes.

3. Coal Market in Thailand

During the first ten months of 2020, private sector's total coal consumption in Thailand was approximately 18.7 million tonnes, falling 0.2 million tonnes or 1% year-on-year due to economic contraction following the government's lockdown measures against the spread of COVID-19. The measures also considerably affected coal demand in industrial sector and caused it to decrease sharply. In the first ten months of 2020, cement industry remained the largest coal consumer in the private sector, with an approximate of 6.4 million tonnes in coal consumption, falling 15.6%

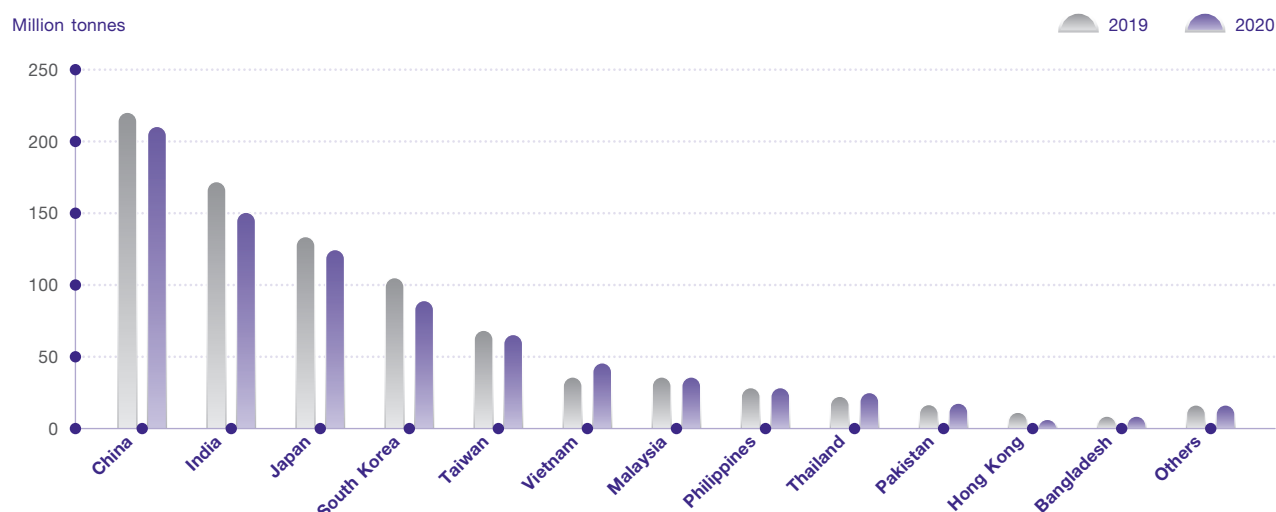
² The sum of the weights (unit: tonne) of cargo, passengers, crew, provisions, water, and fuel that a ship can safely carry. (Source: Port Authority of Thailand)

year-on-year. Independent power producers (IPP) were the second-largest group of coal consumers with consumption at 5.4 million tonnes, growing 3.8% year-on-year despite the decline in overall electricity demand due to the lockdown measures. As power generation from coal has the lowest costs compared to other commercial fuels, coal-fired power plants could maintain full capacity in the past year.

Small power producers (SPP), mainly industrial producers, have also been affected by the lockdown measures. Coal consumption in the first ten months of 2020 was about 1.5 million tonnes, decreasing 19.2% year-on-year.

On the other hand, other industries such as paper, petrochemicals, textiles, and food, as well as coal traders importing coal for stock and sales, had coal consumption and stockpiling in the first ten months of 2020 at about 5.4 million tonnes or an increase of 28% year-on-year. Coal traders had accelerated coal imports for stock and sales when coal prices were low, leading to a considerable increase in coal imports in this group.

Asian Thermal coal import by country



Source: Marketing, Sales and Logistics Analyst, Banpu

Competitions

1. Competition in the Coal Industry

Competition in 2020 had been intense, with a severe contraction of imported coal demand following government lockdown measures in various countries worldwide to cope with COVID-19. Nonetheless, coal production was mildly affected, resulting in an oversupply in the global coal market.

Overall global demand for coal imports in 2020 dropped by 83 million tonnes or 8.1% from 2019, with a total import volume of 939 million tonnes. The Asian countries imported coal at a total volume of 805 million tonnes, down 5.7% from the previous year, accounting for 86% of the global seaborne coal trade.

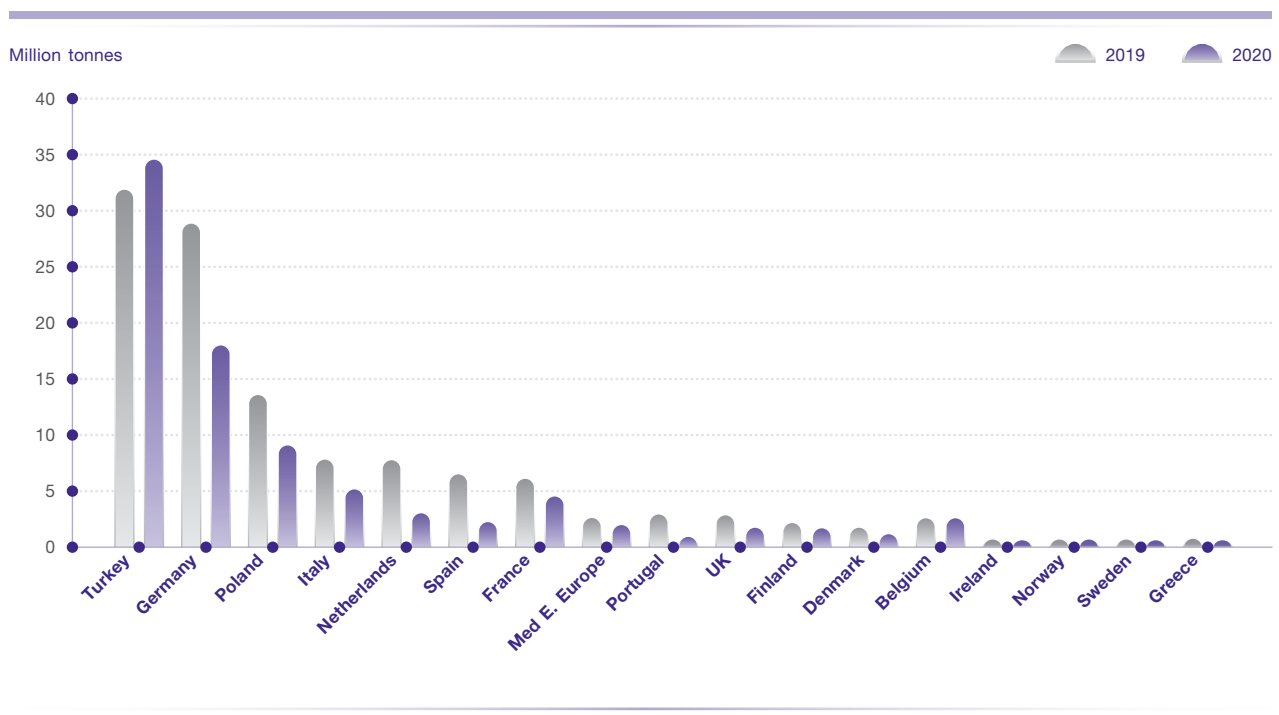
Despite government's stricter coal import restrictions, China remained the world's largest coal importer with a total import volume of approximately 208 million tonnes, falling 4.6% from the previous year. In the past year, the market has been in tight supply because domestic production had been affected by the government's mining security and corruption inspection measures. Meanwhile, demand for coal increased at year-end due to unusually coal winter, driving up China's coal prices significantly.

India was the world's second-largest coal importer with an import volume of approximately 148 million tonnes, dropping 12.4% over 2019. The majority of coal imports were low-quality coal from Indonesia due to its low prices. The shares of coal imports comprised 62% from Indonesia and 24% from South Africa, and the rest from countries like the U.S., Australia, and Russia. However, India was a market that absorbed surplus coal, so coal producers and traders vigorously competed to sell surplus coal to the Indian market, making it a highly competitive market in the past year.

North Asian countries, namely Japan, South Korea, and Taiwan, imported more coal from Russia and South Africa in order to depend less on Australian coal. This group of countries imported about 275 million tonnes of coal, decreasing 8.7% from the past year. South Korea's coal imports dropped the most as its government limited coal-fired power generation to reduce fine dust in winter while nuclear electricity generation was increased. Taiwan also restricted operations of coal-fired power plants in some areas to minimize the fine dust during winter. Coal importers in North Asian countries has been focusing more on high-quality coal to mitigate environmental impact.

Southeast Asia was the only region seeing an increase in coal imports with an import volume of 134 million tonnes, growing from the previous year by 9.8%. As the region's largest coal importer, Vietnam increased its coal imports by 26.3% over the past year. Despite Indonesia being the major producer and exporter in

European Thermal coal import by country



Source: Marketing, Sales and Logistics Analyst, Banpu

this region due to its proximity, the competition among producers in Indonesia was still intense. Furthermore, an increased number of Russian and Australian coal producers entered this market last year, making the market even more competitive.

Europe’s coal imports in 2020 fell 26.9% from the previous year in most countries except the Republic of Turkey, where coal imports increased because coal-fired power plants’ costs were lower than those of gas-fired plants. The dramatic shrink in coal demand led to oversupply in the European market, resulting in fierce competition and a significant decrease in coal prices. Consequently, major coal producers and distributors in Europe, such as Colombia and the U.S., had to reduce their production.

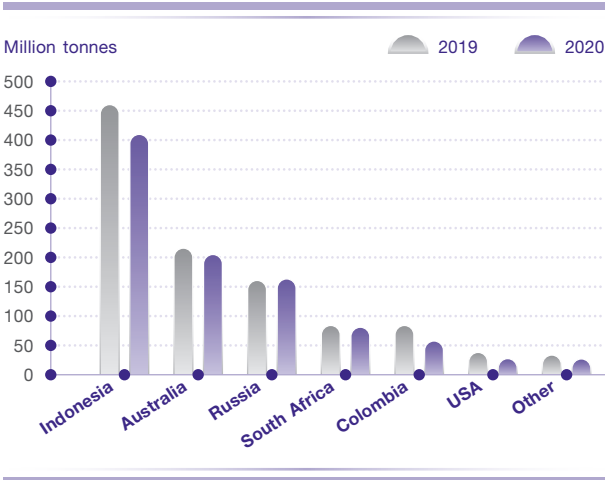
Global coal exports in 2020 were at approximately 936 million tonnes, decreasing 10.2% from the previous year, due to contraction of coal demand following lockdown measures against COVID-19. The six major coal exporters were Indonesia, Australia, Russia, South Africa, Colombia, and the U.S. Their combined export volume accounted for more than 97% of global seaborne coal trade.

Indonesia, the world’s largest coal exporter, exported approximately 404 million tonnes of coal, decreasing 11.3% from the past year. Indonesian coal exports suffered most among coal exporting countries due to falling demand for coal imports of its major customers. Producers tried to cut costs, while many others had to temporarily suspend their production as sales prices fell far below costs.

Australia, the world’s second-largest coal exporter exported approximately 199 million tonnes of coal in 2020, a decline of 5.9% over the previous year. The impact of COVID-19 on Australian coal was relatively low because of its high quality. Major impact on the country coal exports, however, came from the Australian-Chinese trade disputes. China, Australia’s major coal buyer, imposed tightened restrictions on Australian coal imports which caused significant delays in customs clearance process for Australian

coal cargoes compared to those from other countries, incurring additional costs to Australian coal. Despite restrictions, Australian coal could still compete in the Chinese market because of its high quality and competitive prices. At the end of the year, China unofficially imposed a ban on Australian coal by telling coal importers to stop imports from Australia. Australian producers had to sell coal into other markets instead, yet the volume could not fully offset the huge decline of exports to Chinese market.

Global thermal coal export by country



Source: Marketing, Sales and Logistics Analyst, Banpu

Russian coal exports to Non-CIS countries were at approximately 162 million tonnes, increasing 0.9% over the past year. The country attempted to export more coal to Asia to offset shrinking demand from the European market. Ruble depreciation has made Russian coal more competitive in the Asian market. Although Russian premium coal could replace Australian coal in the North Asian market, the lack of rail capacity kept Russian coal from penetrating into the Asian market.

South Africa’s coal exports totaled about 74 million tonnes, down by 3.7% from the previous year, given decreasing coal demand in the global market. Some miners had to shut down their operations temporarily in response to the government’s preventive measures against COVID-19, especially the underground mines.

South Africa has been exporting more low-quality coal due to the country's dwindling reserves of premium coal. Exports of premium coal were at around 10% of its total coal exports. South Africa's premium coal was preferred by Indian steel producers, sending its prices up.

Colombian coal exports in 2020 were at approximately 52 million tonnes, down 32% from the previous year. The decrease was driven by shrinking demand in Europe, Colombia's major market, coupled with Colombian government's lockdown measures. In addition, extremely low coal prices in the European market forced several producers to halt their production. Colombian producers tried to increase sales in Asian market. However, being geographically distant from Asian users, they failed to compete with producers who are closer to the market.

The U.S. exported 23 million tonnes of coal (excluding exports to Canada), plunging 29.5% from the past year owing to a drastic decline in global coal prices, making the U.S. coal uncompetitive.

Coal prices in 2020 suffered from COVID-19 lockdowns since late April and fell rapidly in May due to a plunge in global demand for coal while recovery only began late in the year. The annual average price at Newcastle Port was at USD 58.6 per tonne, falling 24% from the past year.

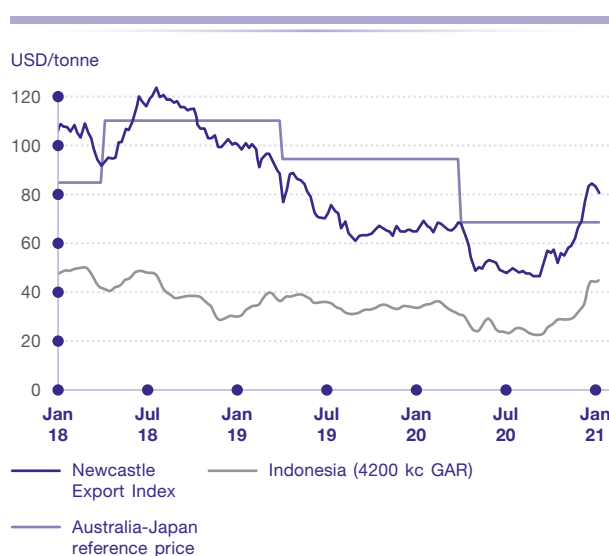
Japanese buyers agreed on the contract price with major coal producers from Australia at USD 68.75 per tonne, which is the Australia-Japan Reference Price for coal delivery in 2020 (April 2020 - March 2021), down 27% from last year. However, as spot prices fell sharply due to the COVID-19 pandemic, most buyers referred more to spot prices rather than the reference price.

China banned on imports of Australian coal in late 2020 but ordered coal from other countries instead. This had tightened supply of other coal producers because there was insufficient supply to meet China's coal demand. As a result, coal prices in other reference markets have increased. Meanwhile, other coal buyers

from other countries bought more coal from Australia because of its lower prices, which consequently led to the increase in Australian coal prices.

Around the end of 2020, North Asia faced unusually cold winter weather, leading to higher demand for coal. Meanwhile, Australian coal producers planned to extend the Christmas holidays to reduce supply in the market. As a result, premium coal prices at Newcastle Port rose to above USD 80 per tonne at year-end.

Thermal Coal Export Price, FOB



Source: IHS

Coal imports in 2021 are expected to rebound from 2020 as global economy is set to recover after the rollout of COVID-19 vaccinations. Most world economies are expected to pick up from its lowest point affected by COVID-19 outbreak in 2020 with Asia, especially Southeast Asia and South Asia at the forefront of global recovery.

North Asian countries, comprising Japan, South Korea, and Taiwan, will turn more to premium coal, particularly South Korea and Taiwan, to minimize air pollution. Demand for premium coal will remain high, and prices will be stable. These countries will also continue their restrictions on coal-fired power generation in winter to reduce fine dust in the air.

European coal demand in 2021 is also expected to recover from significant contraction in 2020 due to the impacts of the COVID-19. However, the coal demand will gradually decrease as European countries plan to shut down coal-fired power plants to reduce carbon dioxide emissions. The plan will affect producers in the U.S. and Colombia, who may have to lower production because of lower demand and inability to compete in the Asian market as their coal sources are too distant from Asian consumers.

In the long run, investment in new coal mines will face challenges in seeking financing as many financial institutions have cut off fossil business funding. On top of that, future development of new coal reserves are likely to be affected by more stringent environmental policies and increasing public opposition. While existing coal reserves are gradually depleting, if there are no new reserves available in time, a tight supply can be expected in the future. Therefore, coal prices should remain high enough to attract investment in new coal projects to replace depleting reserves.

2. Competition in Thailand

In 2020, competition in Thailand was extremely intense as more than 99% of the coal used in the private sector was imported coal, thus attracting numerous coal traders to enter the Thai market. With oversupply in the global market, coal traders were trying to sell off their inventory into Thailand, thus, further intensifying market competition.

In the first ten months of 2020, consumption of imported coal was at 18.7 million tonnes, decreasing 1% year-on-year due to economic contraction following the country's lockdown measures to curb the spread of the COVID-19. Consumption of domestically produced coal was at only 0.16 million tonnes, down 45% year-on-year because of depleting coal reserves. Whereas coal consumption declined, coal imports increased. The coal import volume in the first ten months of 2020 was at 20.6 million tonnes, growing 5.7% year-on-year, as importers imported large volume of coal to refill their

stocks when coal prices were low. Around end of 2019, expecting coal prices to go down further, coal users decided to keep their stock low by using their existing stock and delayed coal imports. Therefore, in 2020, they had to import coal to replenish their stocks.

Thailand's market competition in 2021 is expected to remain intense even though less competition is expected in the global market. As many coal traders do business in the form of buying and selling, they do not need to own coal reserves. Moreover, with a large number of coal producers in the market, coal traders enjoy easy access to coal supplies as there are plenty of choices available.

Competitive Strategies

The COVID-19 pandemic has reduced global coal demand while increasing market competition. Customer visits were also restricted. Banpu has thus aligned its strategies with the changing business environment to stay competitive. Major competitive strategies deployed are as follows:

1. Online Communication

The Company has been using call meeting and video conferencing systems to communicate with customers and relevant parties. Chat programs are also used to speed up communication with customers aside from e-mailing. Choices of chat programs vary from country to country to better fit customer's preference. These allow the Company to maintain a close relationship with customers and promptly respond to their needs.

2. Information Updates

Every quarter, the Company sends emails to customers and stakeholders to inform them of the Company's performance to ensure that the Company can deliver coal to customers as committed. The Company also uses emails to inform customers of various updates, such as the Company's COVID-19 measures. So, customers can rest assured that the Company can deliver coal to them even under unusual circumstances.

3. Product Development

The COVID-19 pandemic has reduced global coal demand and caused oversupply in the global market, thus provide customers with more choices. To improve the quality of its coal, the Company uses the optimization model for coal blending to deliver the coal blend that best suits each customer's needs with the least cost. This strategy allows the Company to optimize its coal and coal purchased from external sources to create the highest added value.

4. Targeting the Right Market

Market segmentation and product quality improvement were part of the Company's efforts to sell its coal to high-yield markets. Meanwhile, lower-quality coals were sold to customers who could use low-quality coal. With this strategy, the Company was able to secure its customer base in major markets amid a huge oversupply in the previous year.

5. Stable Delivery

Focusing on reliable and stable delivery of coal to its customers, Banpu owns a large coal terminal with a vast port stockyard, allowing the Company to efficiently prepare for delivery to customers in terms of quality and quantity. Banpu coal is a strong brand that has been trusted by its customers for a long time.

Major Competitors

Banpu's major competitors in the global market remained relatively unchanged as entry to the coal business is difficult for new players. Major competitors were coal producers from Indonesia, Australia, Russia, and South Africa, e.g., Glencore, Yancoal, PT. Bumi Resources Tbk, PT. Bukit Asam Tbk, PT. Adaro Indonesia Tbk, PT. Kideco Jaya Agung, PT. Bayan Resources Tbk, PT. Golden Energy Mines Tbk, SUEK, and Noble Energy, Inc. Meanwhile, it was tougher for coal producers in the U.S. and Colombia to compete in the Asian market since the coal reserves are too

distant from Asian users, causing them to reduce production. Apart from that, there were numerous small coal traders and producers in the market.

The Company's major competitors in Thailand remained the old-time traders, namely SCG Trading Co., Ltd., Lanna Resources Plc., and Asia Green Energy Plc. Since the majority of coal consumed in Thailand is imported coal, there have been many coal traders entering the market. Furthermore, the fact that the market is easily accessible for both small coal traders in Thailand and foreign competitors has made the market highly competitive.

Pricing Policy

The Company's coal prices are determined based on global sales prices at the time of offering and adjusted to the actual quality of coal. The majority of coal is sold based on the index-linked pricing, and derivative instruments are used in managing price volatility. The coal sales price for power plant in Indonesia, however, is set by Indonesian government at a maximum cap of USD 70/tonne for coal with a gross calorific value (GAR) of 6,322 kcal/kg.

Customer Profiles

Banpu's major customers are large-scale coal-fired power plants in many countries such as Japan, South Korea, Taiwan, China, India, the Philippines, Malaysia, and Indonesia. These power plants owned by large and established companies purchase a large volume of coal annually. They have a strict and transparent supplier selection procedure in place, and usually purchase coal through bidding process for both short-term and long-term contracts, with some purchases made in the spot market. The Company also sells coal to other users in cement, pulp and paper, as well as brick industries. As most of these customers need less coal for their operations than large-scale power plants, they usually buy coal through short-term bidding contracts and sometimes from the spot market.

Distribution and Distribution Channel

The Company has delegated BMS Coal Sales Pte. Ltd., its subsidiary in Singapore, to operate coal trading and marketing activities in Indonesia and Australia. BMS is also in charge of sourcing coal from external sources for sale. The majority of sales are direct offers to coal customers. BMS Coal Sales Pte. Ltd. is responsible for identifying market opportunities, making sales offers, bidding and negotiating with customers as well as coordinating with customers about vessels for coal transport and after-sales services. This enables the Company to efficiently focus on customers and expand its markets.

Natural Gas Business

Market and Competition

Market

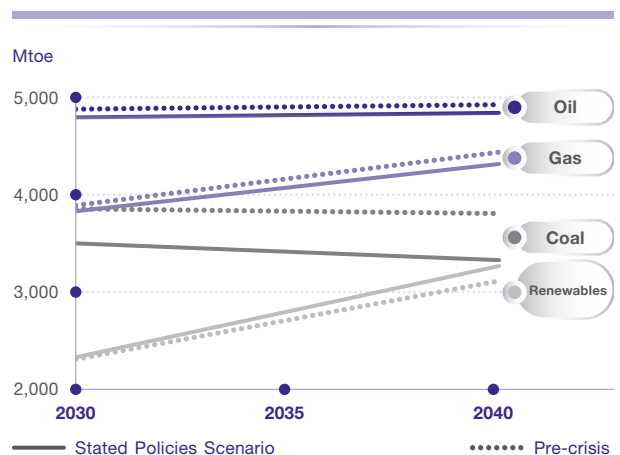
1. 1. Global Natural Gas Market

Global energy markets have been roiled through the COVID-19 pandemic. Most of 2020 were characterized by volatility in commodity markets, and natural gas markets were no exception. In particular, the second quarter saw significant reduction in LNG exports of natural gas, while domestic consumption remained resilient. However, as we entered the third and fourth quarters, strong rebounding in LNG and domestic demand have led to a resurgence of natural gas prices. Overall energy projected demand is expected to remain slightly reduced from the pandemic, and full growth recovery in demand is not expected to occur until at least a few years ahead.

However, global natural gas demand growth prospects continue to remain strong. The most recent International Energy Agency (IEA)'s World Energy Outlook (WEO) 2020 from the shows that while global natural gas demand has been reduced from the prior year's

estimate (IEA's WEO 2019), the overall trend for natural gas demand remains positively upward in their Stated Policies Scenario. The graph below compares primary energy demand forecasted by the IEA.

Total primary energy demand by key fuels in the Stated Policies Scenario relative to the WEO-2019, 2030-2040



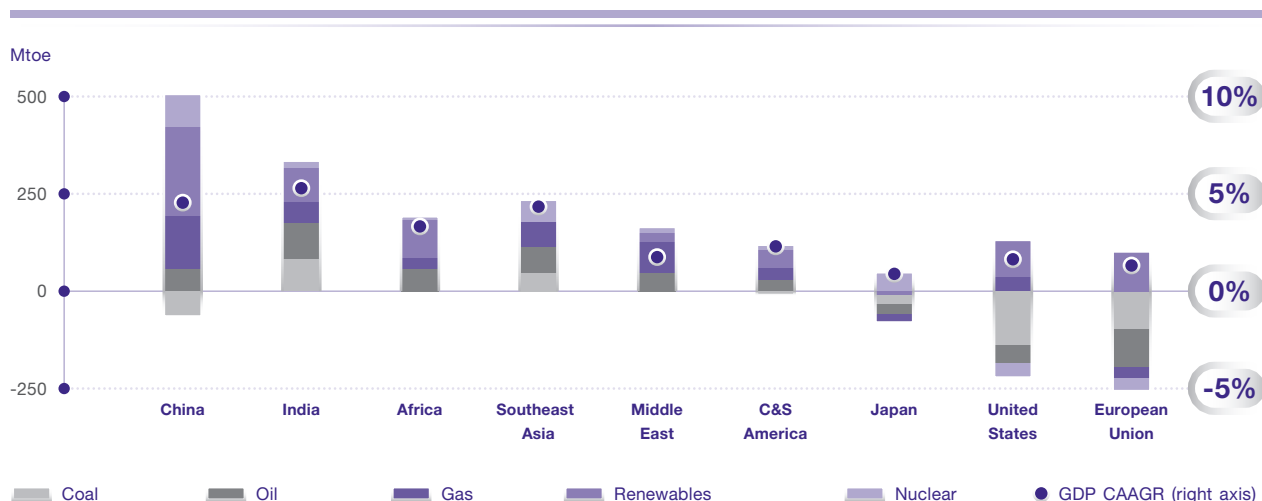
Most primary fuels start the 2030s at or lower than pre-crisis projections, but heading to 2040, renewables rise above prior projections, while coal further diverges downward

Note: Nuclear (not pictured) does not change substantially from pre-pandemic projections, and starts in 2030 at around 800 Mtoe expanding to around 900 Mtoe in 2040.

The continued growth in demand is due to natural gas being an ideal source of primary energy, which is a bridging fuel between fossil fuels and renewables, as its abundance, relative lower costs, relative lower carbon footprint, and flexibility as a heating or transportation fuel. However, unlike many commodities, natural gas is not easily transported given its standard gaseous state. Therefore, pricing for the commodity is typically much regionalized.

In the wake of the COVID-19 pandemic, Asian economies continued their strong gas demand growth with China, India and Southeast Asia projected to be the largest consumers of natural gas. Additional growth in gas and other sources of primary energy demand also include the Middle East and Central & South America. The graph below from the IEA illustrates the projected demand for gas by region under the Stated Policies Scenario.

Changes in primary energy demand by fuel and region in the Stated Policies Scenario, 2019-2030



Renewables see the most growth in all regions, followed by gas, while coal use declines. Demand growth is highest in China and India.

Note: GDP CAAGR : Gross domestic product compound average annual growth rate;

C & S America : Central and South America.

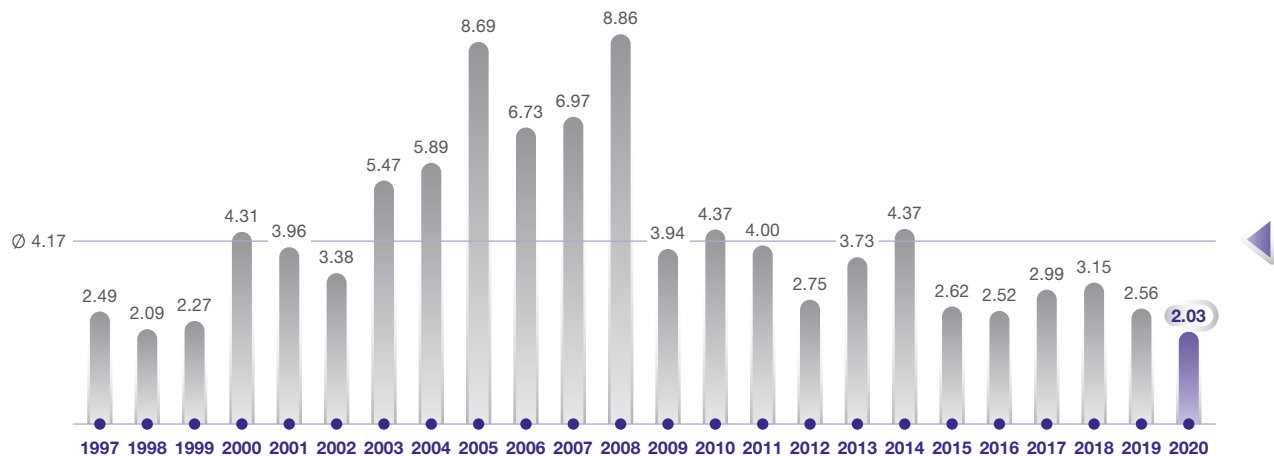
The U.S., Russia and the Middle East continue to be the largest future producers of natural gas. The supply growth in gas expected to be more moderated than previous projections to keep pace with demand.

2. The U.S. Natural Gas Market

The U.S. natural gas market were extremely depressed in 2020, due to lower overall demand in the first half of the year and persistent oversupply throughout the year (including a mild early start to winter in 2020 and 2021). The key natural gas pricing benchmark, Henry Hub, traded on a USD 2.03 per MMBtu. This price represents the lowest average annual price of the benchmark since 1997. This dramatic reduction in price was the result of significant oversupply from unconventional resource plays in the U.S., coupled pandemic reduced demand (especially for LNG demand in the second and the third quarters of 2020). The chart on next page shows average annual Henry Hub prices from 1997 – 2020 as reported by the U.S. Energy Information Administration (EIA).

Historic Henry Hub prices

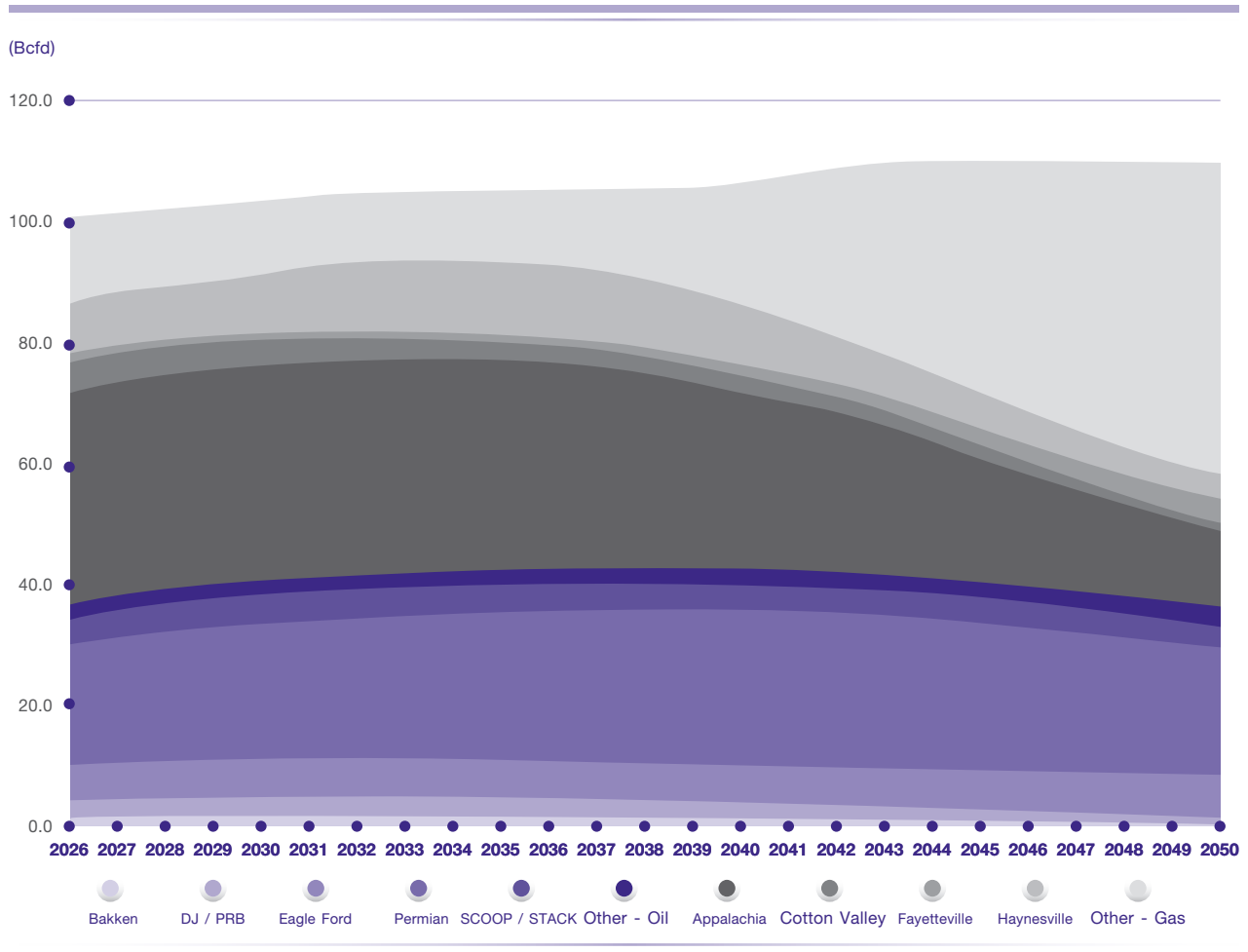
Average of Henry Hub natural gas spot price (Dollars per MMBtu)



Source: EIA website: <https://www.eia.gov/dnav/ng/hist/rngwhhdm.htm>

During the second half of 2020, Henry Hub prices rebounded significantly as economic recovery from the peak of the pandemic shutdowns stimulated resurgent demand. This was particularly true for LNG demand which recovered very strongly from a low of around 3 billion cubic feet per day (Bcfd) to 10-11 billion cubic feet per day in a year end. As well, dramatically lower oil prices (which went negative in April 2020, for the first time on record) have led lower associated gas production. The graph on next page from BTU Analytics shows that the U.S. gas supply is expected to stabilize in the 110 Bcfd range and maintain this flat production plateau for the long-term future. However, a significant amount of the natural gas supply will need to come from additional higher costs basins to supplement the decline in production from the current primary basins in the outer years (2040 and beyond).

The U.S. dry natural gas supply long-term forecasts



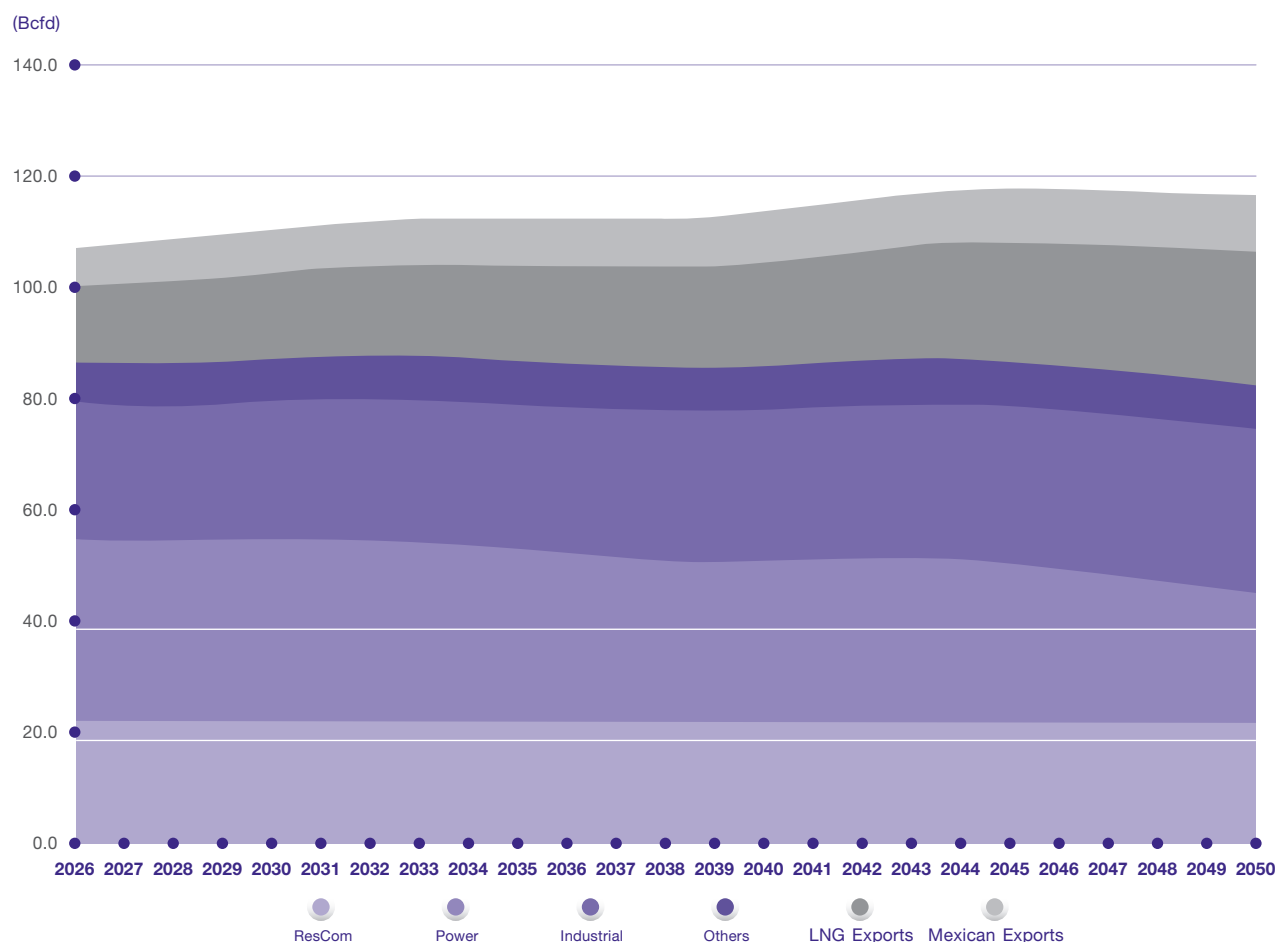
Source: BTU Analytics 2H2020 | Bi-Annual Long Term Gas Outlook

The year of 2020 also saw the election of a new incumbent President of the U.S. President-elected Joseph Robinette Biden and his administration have promised dramatic reform in a variety of policy areas, including achieving a net-zero carbon emissions goal for the U.S. by 2050. While the actual policy measures and mechanisms for achieving such goal are being developed, the incumbent administration has focus on moving the U.S. towards a “greener” future. The Biden administration has further indicated its strong desire to enforce stricter standards for the Energy Industry, with methane emissions and water handling likely to be key focus areas. Along the energy value chain as well, we expect that the new administration will enforce stricter standards particularly around emission standards and

power generation infrastructure. However, given that the president-elected is a long-term veteran of Washington D.C. and his political support base has significant interests in key oil and gas states (like Pennsylvania, New Mexico, and potentially Texas), appears unlikely that extreme policies will ultimately be instituted.

Meanwhile, demand growth expectations for the U.S. market continue to be robust and most forecasts predict that natural gas demand will maintain good growth to match with supply needs. The major growth area for the U.S. demand is projected to be from LNG exports and Mexico exports as domestic demand remains stable. The graph on next page from BTU Analytics shows the long-term forecasts for the U.S. natural gas demand by end-user segment.

The U.S. dry gas demand long-term forecasts (Bcfd)



Source: BTU Analytics 2H2020 | Bi-Annual Long Term Gas Outlook

3. Local Basin Gas Markets

In May 2020, Banpu's investment vehicle for the U.S. natural gas in BKV Oil & Gas Capital Partners, L.P. converted from a fund into a corporation. BKV Corporation is now a consolidated entity in which Banpu holds a majority interests and is focused on continuing to grow its portfolio of the U.S. natural gas assets. BKV Corporation currently has two primary basins within its portfolio. Northeast Pennsylvania Marcellus (called "NEPA") and Barnett assets in the Fort Worth Basin of Texas. Since these markets have their own unique fundamentals, we will explore each of these basin markets separately.

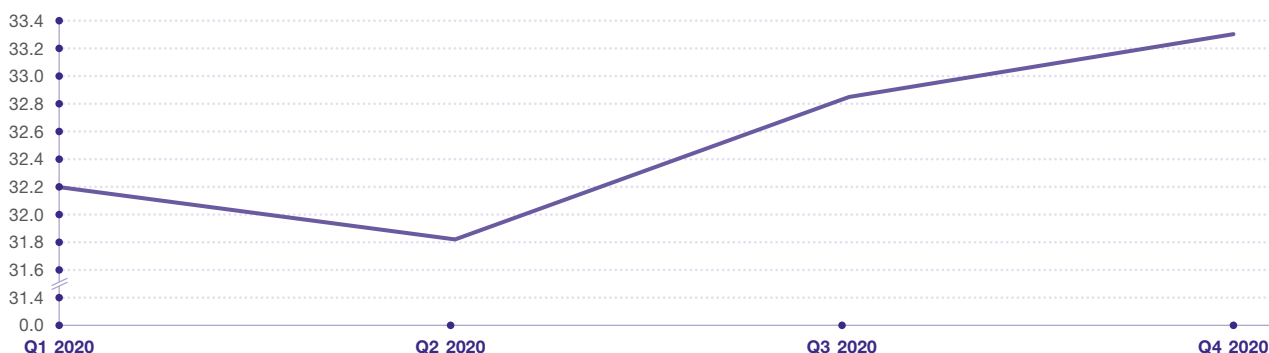
o Northeast Pennsylvania

As of 2020, Banpu produced 62.4 Bcf net or an average of 170.5 million cubic feet per day (MMcfd) with its NEPA portfolio, including both operated and non-operated wells. Within NEPA, like the rest of Appalachia, strong production in the first quarter of 2020, followed by reduction in supply in the second quarter of 2020 due to supply curtailments as prices (including local basis) were extremely low. The second half of the year saw modest rebound in supply as natural gas prices rebounded.

The graph below illustrates the supply dynamics of the Appalachia basin which includes NEPA as well as other sub basins in Southwest Pennsylvania, West Virginia and Ohio.

Appalachia dry gas production by quarter in 2020

Appalachia (Pennsylvania, West Virginia and Ohio) production,
Q1 – Q4 2020

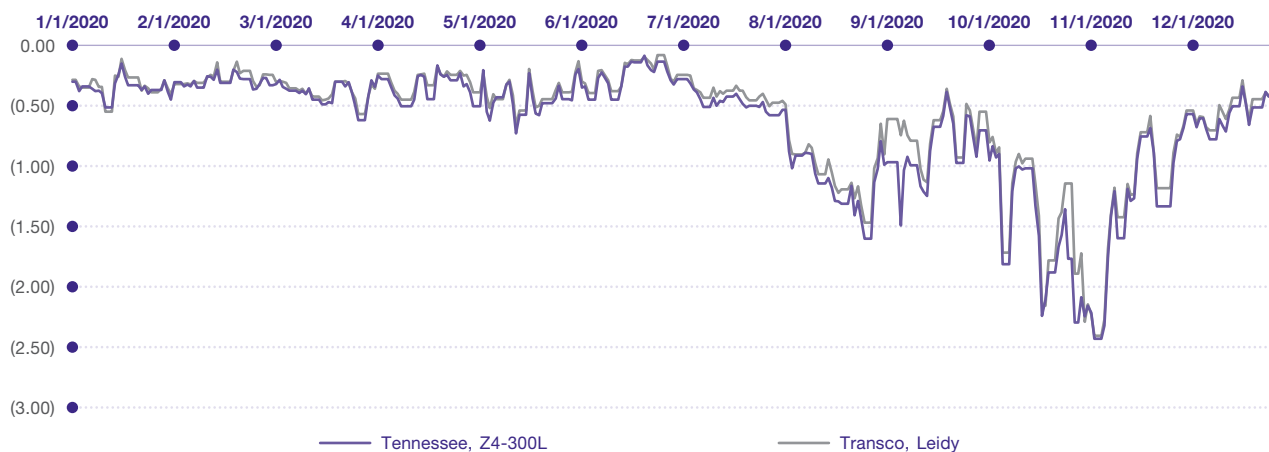


Source: BTU Analytics Gas Basis Outlook | 2Q-4Q 2020

As a result of the oversupply situation in NEPA basis throughout the year, the differentiation between local price and Henry Hub price remained wide throughout most of the year. Only in late of the last quarter of 2020 have local basis narrowed as domestic heating and power generation demand have uplifted local prices to more historic levels.

NEPA historical spot prices

USD/MMBtu, Jan-20 to Dec-20



Source: S&P Platts

o Texas Barnett

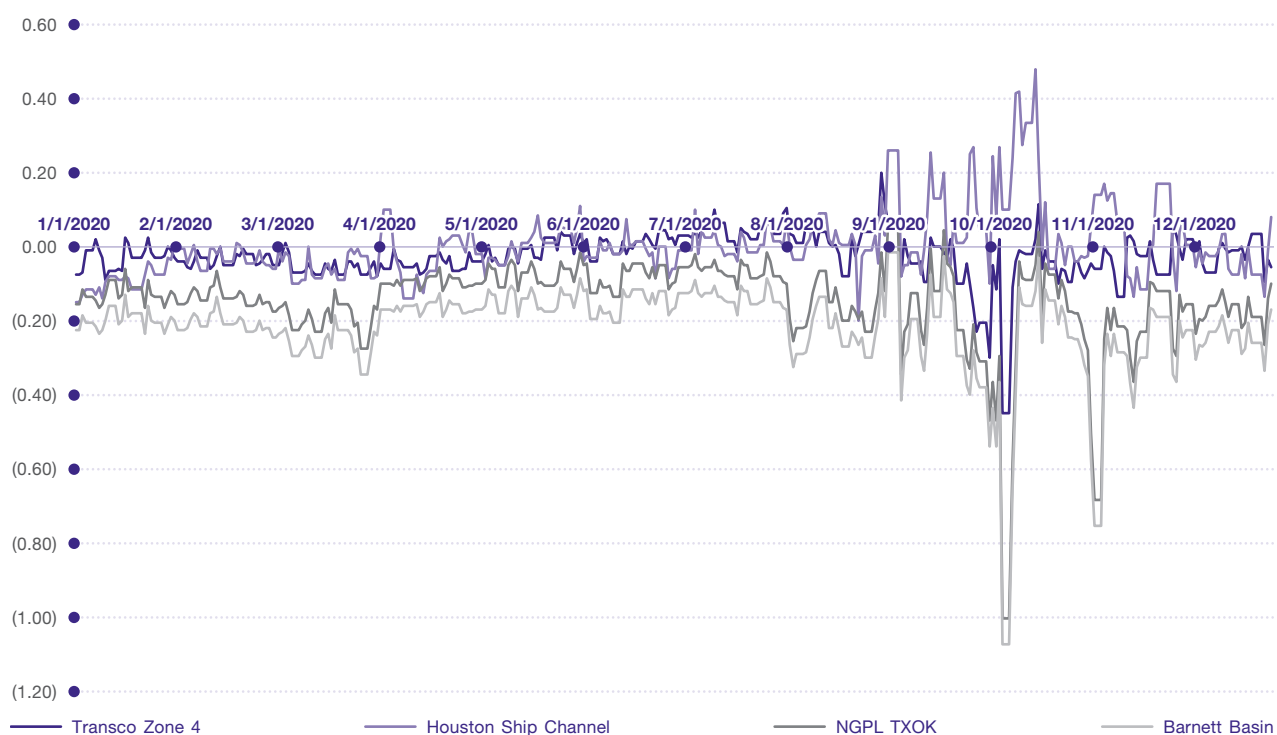
On 1 October, 2020, BKV, an affiliate of Banpu, had closed on the transaction to acquire Devon's Barnett assets. The Barnett position within the overall natural gas portfolio is significant with the last quarter production of 52.7 billion cubic feet equivalent (Bcfe) or approximately 573 million cubic feet equivalent per day (MMcfe). The production from this asset represents 78% BKV Corporations total portfolio of natural gas equivalent production in the last quarter of 2020.

The Barnett local markets have proximity to major demand centers in the gulf coast where LNG exports, Mexico exports and local petrochemical demand are rapidly growing. Therefore, the local prices for gas in the Barnett trade close to Henry Hub prices. The chart below illustrates the basis of local Barnett pricing to Henry Hub pricing over fiscal 2020.

Natural gas sales hubs

(Local price less Henry Hub accessed by Barnett Transaction)

USD/MMBtu, Jan-20 to Dec-20



Source: S&P Platts

For the Barnett assets, the forecasted production is expected to be approximately 70% dry natural gas and 30% natural gas liquids (NGLs)¹ and condensate. The price of NGLs and condensate closely track oil prices versus natural gas prices, thus pro forma for the consolidation of the Barnett asset. Actual natural gas and NGL compositions vary by location in the overall field and by other factors and are finally determined by local plant statements where the fractionation (separation of the natural gas) occurs.

Note: ¹ Natural gas liquids (NGLs) are components of natural gas that are beparted from the gas state in the form of liquids. Combined with ethane, propane, butanes, pentanes.

Competition

The competitive dynamics for natural gas in the U.S. market center around three core dimensions.

1. Local producer competition

The first source of competition is from local competitor upstream oil and gas producers located in Appalachia, Barnett and other competition basins. The chronic oversupply situation forces local gas-on- gas competition as producers seek to access the most attractive sales points. Within the NEPA, there were approximately 10 natural gas producer competitors which it benchmarks its performance against. These competitors are typically publicly listed companies with significant assets in Appalachia either focusing on the Marcellus shale or Utica plays. BKV has competitive cash costs and margins when compared against these peers, which are generally much larger in size on a production basis.

2. Associated gas production

The competitive dynamic for gas production comes from associated gas production. Associated gas production represents the natural gas production occurring from oil focused plays which the natural gas is a by-product of oil production; therefore, not the primary product being pursued. The economics of natural gas production in these plays is mostly irrelevant to the capital deployment focus of these producers, and the marginal costs to produce this natural gas can be negative (making it the lowest source of gas production). For 2020, the expectation of abundant amounts of virtually costless associated gas was greatly reduced due to the decline in oil prices and corresponding oil demand. Further, as the incoming Biden administration has indicated a policy shift towards more stringent and rigorous environmental standards, it has created some uncertainty as to the potential for additional

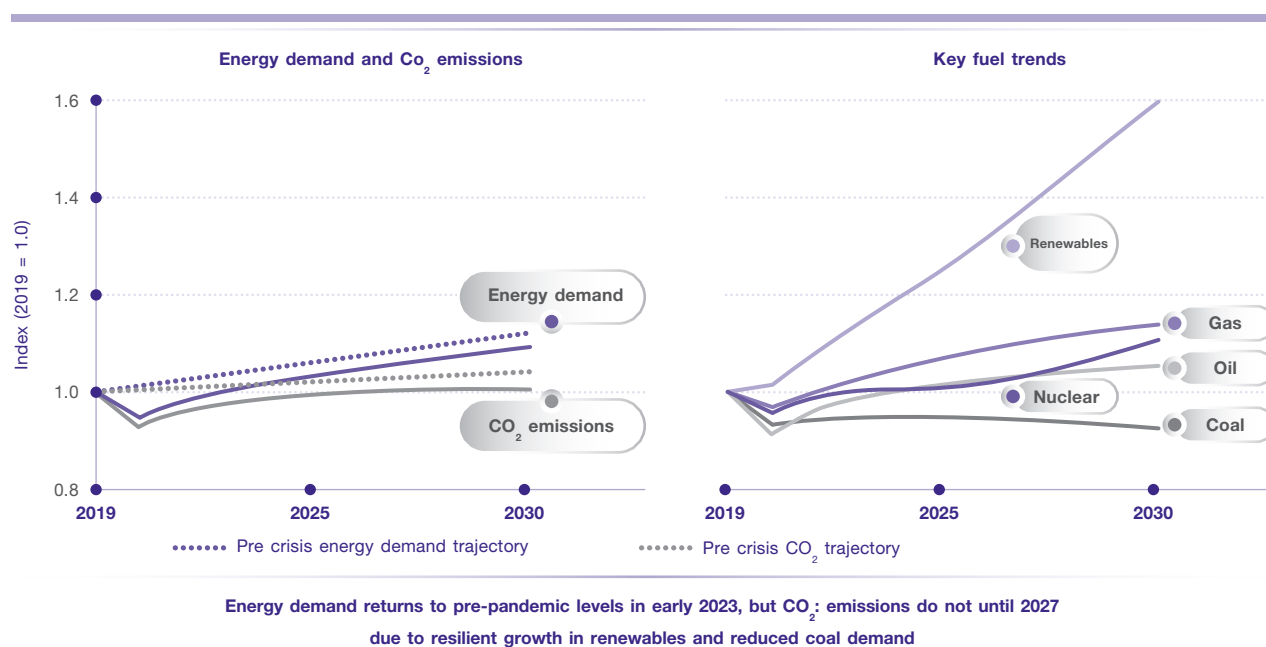
associated gas competition e.g., from historically flared gas, and/or how likely it will be for additional infrastructure to be built to support bringing this associated gas to liquid markets (as in the case of the Permian basin). Overall, it appears the expectation of very significant associated gas supply from oily basins has been greatly reduced in 2020; therefore, marginal dry gas will likely set the price for natural gas in the foreseeable future.

3. Alternative sources of primary energy

The competition from other primary energy sources within the U.S. i.e. coal and renewable energy which compete for local demand, and especially local power generation demand. This competition is concentrated in local coal production and renewable energy production. Both competitive sources of primary energy competition are threats to the continued growth of the U.S. natural gas demand in the power generation sector. However, as carbon neutral goals are increasingly adopted across the globe (including in the U.S.), it is looking increasingly likely that the share of renewables in the global primary energy production will increase rapidly. Natural gas will also increase rapidly versus the current baseline but likely at a slower pace for the renewables. This may be especially true in the power sectors, where significant renewables investment is targeted by the incoming Biden administration. Regardless, renewables and natural gas will be in competition to move towards its stated carbon emission targets.

The graph on next page illustrates IEA's forecasts of renewable energy demand growth (post and pre- COVID-19 pandemic) versus the corresponding primary fuels utilized to supply that demand growth.

Global energy demand and CO₂ emissions trends in the Stated Policies Scenario to 2030



Note: IEA WEO 2020

Competitive Strategies

The market for 2020 by record supply levels in the first quarter of 2020, followed by reductions in supply into the second quarter as prices fell dramatically, leading to an extremely volatile year for all producers. Banpu focused on strong production management, capital efficiency and operating costs management to drive improved margins are one of the most challenging price environments we have yet faced.

1. Production Management

Focused on maintaining base production and deploying capital with only the most efficient returns on capital employed to maintain strong performance in a low commodity price environment.

2. Midstream Projects

Executed a number of compressor projects which lower line pressure by increasing compressor capacity has allowed older wells to flow more gas as a result of lower inlet

(or suction pressure) into the system. These projects have resulted in approximately gross 12-14 MMcfed of additional production uplift in the existing production base.

3. Operations Automation

Deployed the auto tune initiative in all targeted wells by utilizing computer systems and algorithms to optimize the variable settings on plunger lift systems for producing as wells to create very high efficiency and returns on investment.

4. Marketing Arrangements

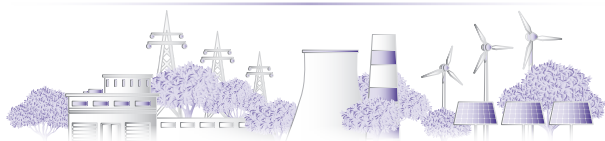
An agreement made by BKV with major pipeline facilities in its markets to provide access to a variety of liquid markets for selling gas to improve its access to natural gas end-customers

Major Competitors

Within Northeast Pennsylvania, there are several competitors, who are both public and private companies, seeking to develop and produce natural gas to similar end markets. These competitors vary in their economic profiles and acreage positions. Examples of some of these potential competitors include Cabot Oil and Gas Corp., Chesapeake Energy Corporation, Chief Oil and Gas, Southwestern Energy Company, Seneca Resources Company, Repsol, etc.

In the Barnett, there are several both public and private producers that will compete with our business. Examples of these potential competitors included Total S.A., XTO Energy Inc. (ExxonMobil), Fleur de Lis, EOG, Lime Rock etc. The graph below illustrates Barnett production by competitor, with BKV Corporation as the largest producer in the basin at 573 MMcfed in the last quarter of 2020.

Energy Generation

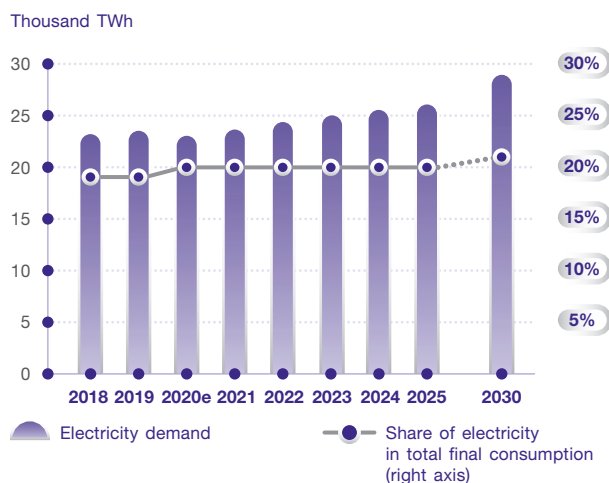


Power Business

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

Market and Competition

Estimated Electricity Demand

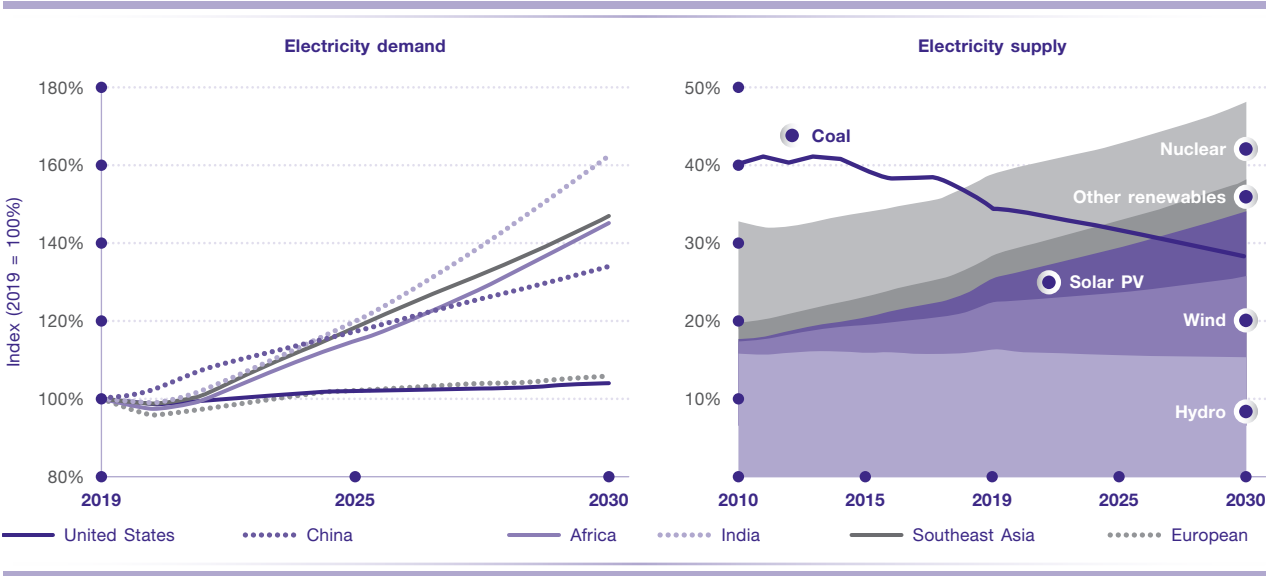


Source : World Energy Outlook (WEO 2020) by the International Energy Agency (IEA)

Note : 2020e is forecast for the year 2020.

In 2020, the coronavirus disease 2019 (COVID-19) pandemic drove the projected global electricity demand down by about 2% from 2019, or about 500 terawatts per hour (TWh). However, the projected electricity demand in 2025 will grow over the previous year by 10% or more than 26,000 TWh. Global electricity demand is expected to grow continuously to reach 29,000 TWh by 2030. The increased electricity demand in the service and industrial sectors account for a 21.4% share of electricity in total final energy consumption by 2030.

Estimated Electricity Demand and Supply by Source

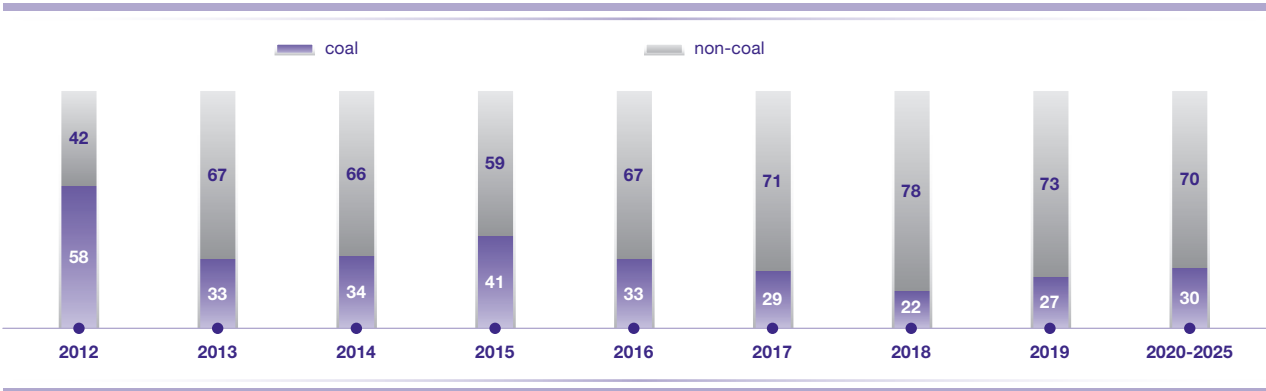


Source : World Energy Outlook (WEO 2020) by the International Energy Agency (IEA)
Note : 2020e is forecast for the year 2020.

Considering the share of global power generation capacity by fuel source, renewable and nuclear generation capacity exceeded coal capacity for the first time in 2019 and is likely to keep growing. This is driven by technology advancement, focus on environmental impact and measures of governments that promote consumption and set targets to increase renewables. Based on the forecast in 2025, a share

of renewables in the global electricity capacity will expand to 43%, whilst coal capacity is likely to fall from 35% in 2020 to 28% in 2030. Nevertheless, coal remains the primary energy for power generation in the Asia-Pacific region, particularly in China, whose energy plan maintains the share of coal-fired power generation at 30% of the net capacity additions.

Proportion of coal as fuel for electricity generation in China



*Source: China Electricity Council (CEC) and Bloomberg

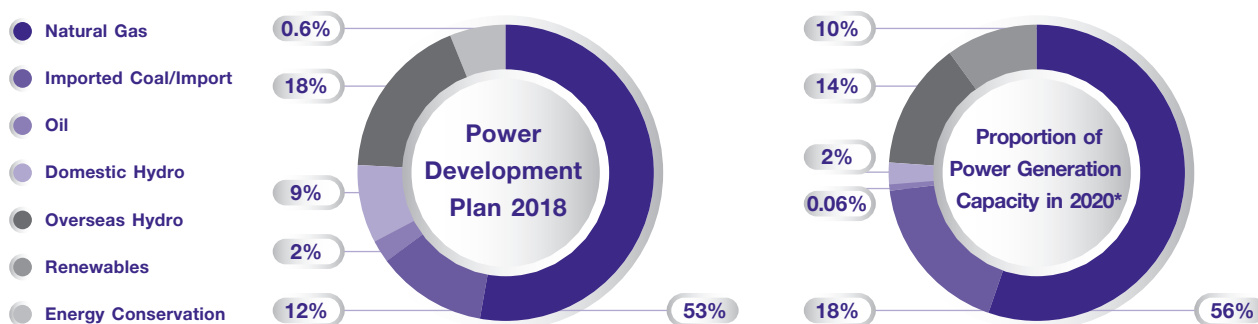
Followed closely by gas-fired power generation, which gas demand is expected to increase and become the second largest of primary energy as a bridging resource from fossil fuel to renewables in Asia-Pacific. The fact that natural gas plays a vital role in increasing stability and flexibility of power transmission systems during the COVID-19 out-

break and gas reserves in the U.S. are large and inexpensive has an influence on the volatility of the natural gas market in the U.S., Canada, and Europe. Due to the development of coal-to-gas-switching power plant projects in Asia-Pacific, gas-fired power capacity is expected to remain stable at 22-23% of total generation capacity through the year.

1. Market and Competition in Thailand

In 2020, Thailand's installed power generation capacity totaled 45,478 MW, growing by 0.4% from 2019. In March, when the electricity demand peaked, before the COVID-19 outbreak, at 28,637 MW, yet below the 2019's peak demand at 30,853 MW for 2,217 MW or 7.2%. The shares of electricity capacity by fuel source in 2020 were natural gas 56%, coal 18%, domestic hydropower 2.3%, imported hydropower 14%, renewables 9.8%, and oil 0.1%.

Comparison of Power Development Plan and Proportion of Power Generation Capacity in 2020



*Source: Energy Policy and Planning Office (EPPO), Ministry of Energy.

*Information as at end-October 2020

2. Market and Competition in Lao PDR

Unlike other Southeast Asian countries, Lao PDR's power generation relies mainly on hydropower since the country has no proven oil and natural gas reserves and only limited coal reserves. Since 2016, the situation has improved as all units at HPC power plant, the first coal-fired power plant in Lao PDR, are fully operational. Given the scarcity of coal source, no further plans have been made for the new construction of coal-fired power plant during 2016-2020. Nonetheless, Lao PDR remains a major power exporter in the region. Lao PDR has entered into international power purchase agreements to supply electricity of 9,000 MW to Thailand, 5,000 MW to Vietnam, and 200 MW to Cambodia by 2025. Thailand and Lao PDR trade electricity generated by seven power plants, six of which are hydropower plants, and one is a coal-fired power plant.

3. Market and Competition in China

The power industry in China saw growth in power consumption as follows:

	Unit	2020	2019	2018
Growth rate in generation capacity	%	6.6	6.3	6.7
Total generation capacity	Gigawatts	2,210	2,073	1,949

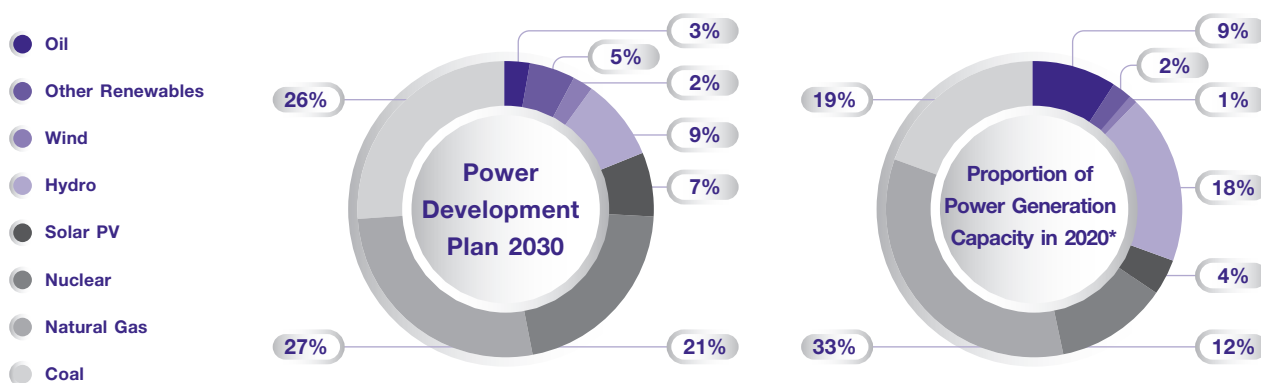
Source: National Energy Administration (NEA), China

China's ongoing energy reform and development of renewable energy technologies have lowered renewable energy costs, which is favorable for the investment of the private sector. In 2020, the generation capacity growth rate was at 6.6% of total generation capacity, increasing over the previous year. Approximately 53% of the increased capacity in 2020 came from the construction of new renewable power plants (excluding hydropower). The China Electricity Council set to achieve total wind and solar capacity additions of 120 GW in 2021.

4. Market and Competition in Japan

Japan's electricity consumption has enjoyed a stable growth with the majority of capacity from thermal power generation. Part of the capacity was from renewables, accounting for 24% of the total capacity or 63,764 MW, comprising 3,580 MW from wind power, 10,549 MW from solar power, and 49,635 MW from hydropower. According to the Fifth Basic Energy Plan, Japan set to achieve a target of 22-24% from renewables by 2030. The Government of Japan has replaced the renewable-based electricity pricing scheme from the Feed-in Tariff (FiT) scheme with the auction scheme since 2017. Based on the auction scheme, newly developed solar power plants will get an average price of JPY 12 per kWh. Besides, there was a regulatory change prescribing that any solar power plant project development of over 40 MW operating capacity must submit an Environmental Impact Assessment (EIA) report. The new regulation has been effective from April 2020 onward.

Comparison of Power Development Plan and Current Proportion of Power Generation Capacity by Fuel



Source: The Fourth Strategic Plan on Energy, Ministry of Economy, Trade and Industry (METI)

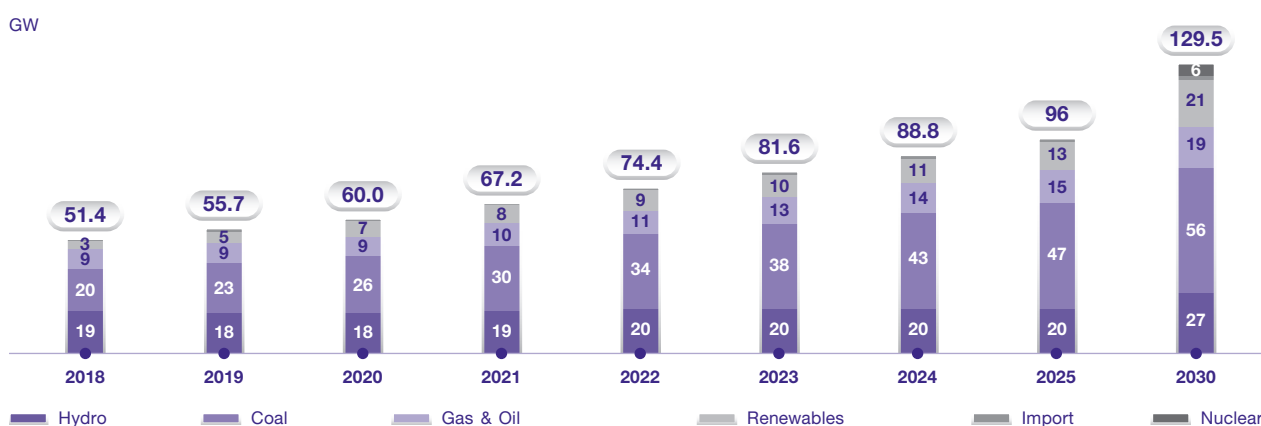
* Information as at end-March 2020

5. Market and Competition in Vietnam

Affected by the COVID-19 pandemic, in 2020, Vietnam's Gross Domestic Product (GDP) grew by 3%. However, it is forecast that in 2021 the GDP will grow by 6% thanks to continual economic recovery and the success in combating the spread of the COVID-19 pandemic.

According to Vietnam's Power Development Plan 2000 - 2030, coal is the primary fuel for electricity generation. By 2030, the total power generation capacity will comprise 40% from coal-fired power generation capacity, and capacity from renewable power generation, namely 9% from wind, and 6% from solar. The total capacity is expected to reach 130 GW by 2030.

Proportion of Installed Power Generation Capacity by Fuel Source under Vietnam PDP



Source: Ministry of Investment and Trade Development, Vietnam

Vietnam has set the Feed-in Tariffs (FiT) at US cent 7.09 per kWh for the solar power projects that had achieved commercial operation by December 2020, and US cent 8.5 per kWh for (onshore) wind power projects that will have achieved commercial operation by October 2021. In 2021, the Vietnamese government changed the solar pricing scheme from FiT to the auction scheme with a reserve price of US cent 7.09 per kWh.

Competitive Strategies

1. Competitive Strategies in Thailand

Banpu Power holds a 50% stake in BLCP power plant with a 1,434 MW total capacity and a 717 MW equity capacity. BLCP, which is located in Map Ta Phut Industrial Estate, is a major power producer who sells electricity directly to the Electricity Generating Authority of Thailand (EGAT). BLCP's dispatch rate in 2020 was at 99.1%, reflecting the power plant's capability to manage operational efficiency. BLCP's production output accounts for 5.2% of total EGAT installed and purchased power capacity.

Competitive Strategies

1) Maintaining Operational Efficiency and Readiness of Power Plants

Banpu Power consistently conducts the efficiency improvement and equipment maintenance of power plants according to the maintenance schedule to secure the Availability Factor (AF) and Contracted Available Hours (CAH) in accordance with the power purchase agreement (PPA). In 2020, BLCP reported the Equivalent Availability Factor (EAF) of 90%.

2) Seeking Opportunities for Business Expansion

Banpu Power has always been seeking growth opportunities by aligning the plan to expand the domestic power business with the national Power Development Plan for 2018-2037 (PDP 2018), approved by the National Energy Policy Council (NEPC) on 24 January 2019. The plan proposes to increase capacity from the Isolated Power Supply (IPS) groups and efficient energy-saving policies. The PDP proposal will result in lower-than-expected power demand, while the new policy promotes renewable power generation, which tends to increase. Banpu Power projected that the development of new thermal and renewable power plants would face higher competition in project bidding and in applying for electricity retail supply licenses. Hence, 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 Isolated Power Supply (IPS) projects that use renewable energy sources.

3) Stakeholder Relations Management

Banpu Power has supported activities and enhanced mutual understanding in the communities in all locations where the Company operates, resulting in healthy community relations.

Major Competitors

- Banpu Power's thermal power plants that are commercially operational have no direct competition from other power producers because the Company entered into a 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., Gulf Energy Development Plc., and international investors.

2. Competitive Strategies in Lao PDR

Banpu Power holds a 40% stake in Hongsa Power Company Limited, which operates HPC power plant, the only mine-mouth power plant in Lao PDR. HPC power plant has a total capacity of 1,878 MW and an equity capacity of 751 MW. The power plant sells the majority of electricity solely to the Electricity Generating Authority of Thailand under the Independent Power Producer (IPP) scheme and some of its output to Lao PDR. The HPC power plant's production output constitutes 29% of the total electricity that Lao PDR supplies to Thailand.

Competitive Strategies

1) Maintaining Operational Efficiency and Readiness of Power Plants

The HPC power plant's all three production units have been fully operational since 2016, with 100% dispatch in 2020. This demonstrates the operational stability and low operating costs, which are crucial for both countries' electricity systems.

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

In 2020, Banpu Power supported the HPC power plant to improve its efficiency and capacity readiness in power generation and distribution. The improvements covered equipment refurbishment and coal transportation to the power plant, which helped maintain the Equivalent Availability Factor (EAF) at 82%. Moreover, the power plant increased readiness by stocking equipment parts and improving the speed and efficiency of maintenance, contributing to smooth power generation.

Major Competitors

Banpu Power's thermal power plant that is commercially operational has no direct competitors because the Company has a long-term power purchase agreement with the Electricity Generation Authority of Thailand and electricite du Laos.

3. Competitive Strategies in China

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

Competitive Strategies

1) Cost and Efficiency Management

The Chinese government continued the policy to reduce electricity and steam prices in all provinces as well as other relevant policies. Banpu Power has assessed the impact on the pricing in power purchase agreements and adjusted the prices accordingly. For instance, Zouping CHP plant had agreed to sell steam to customers at a reference price of CNY 125 per tonne, and when there is any change in the coal cost, plus or minus, for every CNY 0.01 per kilocalorie (tax and transportation cost inclusive), the price of steam can be raised or lowered for CNY 5 per tonne. This risk management on the price fluctuation enabled Banpu Power to lessen the impact of higher fuel costs.

Banpu Power still maintains its profitability by improving production efficiency and strictly controlling the costs using the inventory management strategy buying and stocking up coal when coal prices decline and utilizing it during the time coal prices increase. Banpu Power also follows its plan to expand capacity to neighboring areas to respond to an increase in steam and electricity demand driven by local economic growth.

2) Environmental Management

The Chinese government has a stringent policy on environment and pollution control, which restricts the use of coal as a major fuel source in factories. Banpu Power uses highly efficient generation processes that comply with current environmental standards with regular maintenance of all equipment and machinery. It also has a plan to upgrade environmental 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.

The Company has considered deployment of the state-of-the-art technology called Ultra-Super critical (USC), which is High Efficiency, Low Emissions (HELE) technology, in such a new project as Shanxi Lu Guang power plant to minimize environmental impacts in accordance with international standards. Such technology can trap sulfur dioxide, nitrogen oxide, carbon monoxide, and other pollutants before being emitted to the environment.

3) High Adaptability

Banpu Power has a specific team to closely monitor changing market conditions and align business operations to the market conditions or situations in order to embrace business opportunities and mitigate negative impacts. The Company is prepared to adjust the distribution of power, steam, hot and chilled water in response to the factors affecting the demand. For instance, Zhengding CHP plant would produce electricity, steam, and hot water for sale during winter. In summer, when customer demand shifted, it would swap to produce chilled water for sale, which helped generate more income and reduce the impacts of the seasonal decrease in electricity and steam sales.

4) Service Quality and Stakeholder Relations Management

Banpu Power prioritizes the quality of products and services. The Company strives to assure readiness and security in the generation and distribution of electricity and steam to respond to customer's needs at all times, especially the distribution of steam and hot water in wintertime. The Company always maintains a good relationship with customers based on mutual trust and benefits, which has earned trust and confidence from customers.

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 the community. This has brought Banpu Power acceptance from local government agencies and communities as an exemplary local enterprise. Despite a setback from external factors, the Company still enjoys full support from local governments, for instance, financial subsidies or approval to raise steam prices when coal prices increased.

5) Seeking Opportunities for Business Expansion and Added Value Creation

Banpu Power puts greater emphasis on investment in renewable energy to align with the government's policy to promote renewable energy. The Company also focuses on creating added value by expanding investment into related businesses while considering the costs of different fuel sources 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 the sole distributor of steam. Banpu Power is also considering expanding its customer base to new industrial areas to offer service of the rooftop solar power generation system. Moreover, the Company is conducting a feasibility study for the development of the Company's existing land to develop biomass power plant project together with the combined heat and power plant.

Major Competitors

- Domestic and international power producers and investors

4. Competitive Strategies in Japan

Banpu Power's investment in solar power plant projects in Japan has a total capacity of 88 MW from fully operational plants and a 132-MW capacity from under-development power projects. The Company's business expansion to Japan started from investment in solar power generation together with feasibility study and preparation for assessment of investment and project development opportunities. The Company focuses on teamwork and human resource management as well as establishing trust with business partners to seek significant opportunities for real growth in Japan's renewable energy business. The government's support and investment incentives from financial institutions are still vital factors accelerating Banpu Power's business expansion into 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 costs by utilizing 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 industry, with a specific team to follow up and study the changes in detail as well as impacts on under-development projects to ensure that all projects achieve commercial operation date as planned.

3) Seeking Opportunities for Business Expansion and Added Value Creation

Since Japan's energy management is governed by a clear energy policy, Banpu Power faces low investment risk and can keep the risk to a manageable level although the Japanese government reduced the Feed-In Tariff (FIT) for solar power and turned to the auction scheme. To achieve target return on investment, Banpu Power has adapted by focusing on cautious cost management, procuring important equipment to improve efficiency, and seeking appropriate funding sources. For the new investment, Banpu Power will prioritize projects under the Feed-in Tariff scheme (FIT) or acquire projects that already achieved commercial operation.

Banpu Power also constantly 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 by expanding business opportunities with retail customers as well as a solar rooftop to fulfill demands of business and industrial sectors and renewable energy consumers.

Major Competitors

- Domestic and international power producers and investors

5. Competitive Strategies in Vietnam

Banpu Power has expanded investment in power business into Vietnam since 2016 under an MOU signed with Soc Trang Provincial People's Committee to carry out a feasibility study of investment in a renewable power project. In 2018, Banpu was awarded an Investment Registration Certificate (IRC) and set up a subsidiary company in Soc Trang Province. The Company has prepared an experienced team with a good understanding of Vietnam's business environment to develop the project toward achieving a planned commercial operation date. Currently, Vinh Chau wind power plant project Phase 1 is under construction, and a feasibility study is being conducted to further expand generation capacity.

Banpu Power is expanding investment through the acquisition of the 37.6-MW EI Wind Mui Dinh wind farm in Ninh Thuan Province. The operational wind farm is under a Feed-in-Tariff (FiT) scheme of US cent 8.5 per kWh for a period of 20 years. The investment is under the approval process by the relevant government agencies, which is expected to be completed during the first quarter of 2021 and will realize revenue immediately. Located in the South Central Coast of Vietnam, Ninh Thuan Province has the highest potential and investment opportunities in renewable energy due to government support.

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. The Company 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 and Management

Banpu Power is fully aware of significant factors contributing to a wise investment decision. Thus, the Company always conducts a preliminary analysis and a feasibility study of every project. The Company also seeks advice from experts in many fields, such as engineering consultants, environmental consultants, legal consultants, financial consultants, and accounting and taxation consultants, in order to conduct feasibility options in a correct manner before investing and to ensure compliance with regulations and investment conditions in Vietnam. In addition, the feasibility study helps monitor the progress of project development and execution of each construction phase against the plan.

3) Seeking Opportunities for Business Expansion and Added Value Creation

Vietnam has enjoyed a continuous growth rate in recent years and is expected to achieve a 6-7% gross domestic product (GDP) growth for the next ten years. Such a high growth rate implies an increase in power demand. The Vietnamese government also has a clear energy management plan to increase thermal power generation as well as renewable power generation. Seeing the investment potential, Banpu Power has leveraged its strengths and expertise in thermal and renewable power generation as well as sourcing fuel supply to expand investment opportunities.

Major Competitors

- Domestic and international power producers and investors

Energy Technology



Provision of One-Stop Service of Total Solar Energy and Smart City Solutions

Banpu NEXT Co., Ltd. (Banpu NEXT), a subsidiary of Banpu, is a leading smart clean energy solution provider in Asia-Pacific, leveraging knowledge and expertise in energy technology at the international standard level from the Company's business ecosystem to provide solutions to meet diverse needs of all customer segments. All solutions are provided with cutting-edge technologies, reliability, affordable price and environmentally-friendly sustainability for its customers to use clean energy with efficiency and cost-effectiveness with easy tracking solar system through mobile application.

Market and Competition

In 2019, the government approved and announced Thailand's Power Development Plan 2018-2037 (PDP2018), with an aim to increase solar power generation capacity from 6,000 MW to 10,000 MW. The plan also promotes greater household consumption of solar power. The National Energy Policy Council (NEPC) passed a resolution for the household solar rooftop scheme, aiming to purchase 100 MW per year. However, due to the COVID-19 pandemic facing Thailand and the world in 2020, household and industrial sectors, which had been formerly interested in using solar rooftops, decided to postpone their investments in the installation of solar PV systems.

Nonetheless, the market for integrated solar power systems is likely to grow as a number of entrepreneurs recognize the vital role and benefits that energy technology can have on livelihood and business operations. For example, solar power production technology can reduce costs and operating expenses in the face of the current economic crisis. Besides, government measures are stimulating solar power production. Last year, the National Energy Policy Council approved the increase of power feed-in tariff for the household solar rooftop scheme to THB 2.20 per unit from THB 1.68 per unit. The scheme targets to purchase up to 100 MW a year over a period of ten years. Effective from 1 January 2021, the scheme, which has been extended to include schools, hospitals, and solar pumping for irrigation (Pilot Project), is expected to encourage more investment in solar power and reduce public and entrepreneurs' financial burden.

In addition, the government is focusing on the Smart City Development Plan, which promotes the use of smart technologies and innovations to enhance quality of services and city administration. The Digital Economy Promotion Agency (DEPA) has set to achieve the development of 100 smart cities across 76 provinces, including Bangkok by 2022 through promotion of participatory city management and technology-based infrastructure development, particularly the energy infrastructure that enables optimal use of energy, a key factor to realize the country's smart city aspiration. Consequently, several provinces launched a smart community or city policy in 2020 while also considering solar rooftop system installation as electricity efficiency became their priority. Therefore, more entrepreneurs in Thailand and foreign investors have shown their interest in this business, yet with different marketing strategies.

Competitive Strategy

Banpu NEXT, Banpu's total smart clean energy solutions provider, is gearing toward becoming a leading smart clean energy solutions provider in Asia-Pacific. The Company aims to fulfill the needs of customers with innovations, knowledge, and expertise in energy technology that is on par with international standards to lead a better and sustainable living. Banpu NEXT's marketing strategy is its unique positioning as a provider of total solar energy solutions. The Company's offerings range from rooftop system installation service to energy solutions, providing a stepping stone toward smart cities. Such solutions include the design, installation, and maintenance of the microgrid system, energy management system (EMS), and energy storage system (ESS) used for controlling production, transmission, and electricity storage to maximize efficiency. Other than that, the Company also provides services on electric vehicles (EV). Solutions Banpu NEXT are tailored to suit the diverse needs of customers in different locations and are part of the forces driving Thailand toward a sustainable future of clean energy and smart cities.

In 2020, Banpu NEXT developed energy solutions to address energy problems and meet the different needs of diverse groups of customers. For instance, "Banpu NEXT e-PromptMove," Thailand's first all-in-one mobile solution for clean electricity, was developed as a prototype mobile trailer that is highly mobile, ready to reach out to any places at anytime. With high level of mobility, it can reach disaster areas, off-grid regions, or field operations that require electricity support such as mobile healthcare or maintenance units. Banpu NEXT also provided funding and innovative energy technology for building Banpu NEXT e-Ferry, Thailand's first marine tour electric ferry. The Company aims to build additional electric ferries to support marine passenger transportation services across four coastal provinces along the Andaman Sea and

the Gulf of Thailand, namely Phuket, Phang-nga, Krabi, and Surat Thani. This will satisfy the future demand for marine tour e-Ferry industry and enhance a green tourism experience among tourists and local people.

In addition to making a difference in energy technology solutions, Banpu NEXT also emphasizes on offering integrated customer services, from system installation phase to system development, to accommodate after-sales service in the post-installation phase. The power generation monitoring system is one of the examples. It's a real-time system that allows the Company's expert engineers and its Customer Service Department to identify and solve problems immediately. The Company also developed the BANPU Application, a mobile application for customers to monitor status of the power generation system, electricity output, energy-savings performance both real-time and historical, CCTV feeds, and system fault alarm. Furthermore, Banpu NEXT has the Customer Service Department to provide information, listen to customer's problems, and respond to customer's inquiries via different channels. Customers can report problems about the power generation system to the Customer Service Department 24 hours daily, which ensures prompt response to the problems.

Led by Banpu's Greener & Smarter strategy, Banpu NEXT places great importance on collaboration with partners in the energy technology, renewables-based businesses, and all sectors to increase market potential, strengthen energy technology, and build on a robust business ecosystem. To better meet expectations of its customers in Thailand, Banpu NEXT has been embracing technologies and ideas from various companies including next-generation startups that complement its solutions portfolio. This is realized through both investment support and joint efforts in transforming innovations into a new business model or an approach to boost business growth.

Banpu NEXT acquired a 48.63% stake in Sunseap Group Pte. Ltd, a leading solar energy solutions provider in Singapore. It also acquired a 47.68% stake in Durapower Holdings Pte. Ltd, a company specialized in design and manufacturing of lithium-ion batteries for automotive vehicles and energy storage systems (ESS), whose battery factory in China has a capacity of 1 GWh. The investment responds to continuously growing lithium-ion battery market and increasing demand for electric vehicles (EV), e.g., cars, buses, and trucks, household energy storage systems, and large-scale energy storage systems for renewable power generation projects.

Banpu NEXT has invested in electric vehicle business and developed Thailand's first integrated electric vehicle and transportation services. Currently, the "Banpu NEXT EV Car Sharing" service provides an app-based car rental service to cater to urban residents' needs for clean energy vehicles and hourly car rental service. The first pilot station is at

Samyan Mitrtown, with charging points available 24 hours a day. There is also a plan to expand more EV car-sharing stations in Bangkok Metropolitan Region and to other surrounding provinces. Furthermore, the Company acquired a 30.66% stake in Urban Mobility Co, Ltd. (UMT), which offers a public electric Tuk-tuk service called Tuk Tuk Hop to support tourists travel service around the Rattanakosin Island. UMT business also includes design and manufacturing of small electric vehicles, starting with electric Tuk-tuks that use the Internet of Things (IoT) for fleet management. It is also the developer of "MuvMi," an "on-demand" electric Tuk-tuks application that enables carpooling for passengers who share similar routes. At present, there are more than 100 electric Tuk-tuks available in several Bangkok areas: around Chulalongkorn University, Ari BTS Station, Kamphaeng Phet MRT Station, Phahonyothin, the Rattanakosin Island, Asoke-Nana, and Kasetsart University towards Senanikhom and its vicinity.

REVENUE STRUCTURE

For the previous 3 years ended 31 December 2020

Banpu Public Company Limited

Products/ Services	Conducted by	% of Shareholding	2020		2019		2018	
			Revenue (USD Million)	%	Revenue (USD Million)	%	Revenue (USD Million)	%
Sales Revenues:								
1. Imported Coal	Banpu	-	45.82	95.30	52.76	95.27	61.69	100.00
2. Other Revenues	Banpu	-	2.26	4.70	2.62	4.73	-	-
Total Sales Revenues			48.08	100.00	55.38	100.00	61.69	100.00

Banpu Public Company Limited and its Subsidiaries

Products/ Services	Conducted by	% of Shareholding	2020		2019		2018	
			Revenue (USD Million)	%	Revenue (USD Million)	%	Revenue (USD Million)	%
Sales Revenues - Domestic:								
1. Domestic Coal in Thailand	Banpu	-	45.82	2.01	52.76	1.91	61.69	1.77
	BMC	100.00	25.64	1.12	39.89	1.45	44.36	1.27
2. Domestic Coal in Indonesia	Indominco	67.13	53.79	2.36	65.27	2.37	91.27	2.62
	Bharinto	67.13	40.29	1.77	17.13	0.62	30.77	0.88
	Trubaindo	67.13	89.51	3.92	99.73	3.61	74.96	2.15
	Jorong	67.13	19.10	0.84	26.22	0.95	16.64	0.48
3. Domestic Coal in Australia	CEY	100.00	495.13	21.69	332.37	12.05	522.01	14.99
4. Coal Trading in China	BST	100.00	17.14	0.75	13.23	0.48	-	-
	BBET	100.00	4.60	0.20	-	-	-	-
5. Gas in the U.S.	BNAC	100.00	120.45	5.28	104.48	3.79	143.73	4.13
6. Power in China	BIC	78.57	169.72	7.44	154.14	5.59	174.04	5.00
	BPPRIC	100.00	26.67	1.17	-	-	-	-
7. Other Revenues			87.32	3.82	122.39	4.43	165.98	4.77
Total Sales Revenues - Domestic			1,195.18	52.37	1,027.61	37.25	1,325.45	38.06
Sales Revenues - Overseas:								
1. Coal - International Trade	Indominco	67.13	418.04	18.31	646.23	23.42	775.55	22.28
	Kitadin	67.13	9.45	0.41	15.04	0.55	95.73	2.75
	Bharinto	67.13	195.38	8.56	263.45	9.55	241.53	6.94
	Trubaindo	67.13	248.62	10.88	374.59	13.58	498.37	14.32
	Jorong	67.13	11.81	0.52	21.87	0.79	16.85	0.48
	CEY	100.00	202.60	8.88	362.08	13.12	491.91	14.13
	BMC	100.00	-	-	-	-	36.05	1.04
	BMS	100.00	1.55	0.07	48.35	1.74	-	-
Total Sales Revenues - Overseas			1,087.45	47.63	1,731.61	62.75	2,155.99	61.94
Total Sales Revenues			2,282.63	100.00	2,759.22	100.00	3,481.44	100.00
Participating Profit (Loss) from Investment in Associated Companies (Equity Method)			135.33	-	205.85	-	263.66	-
Total Revenues			2,417.96	-	2,965.07	-	3,745.10	-

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%.

3. Basis of preparation of the information presented above is based on the generally accepted accounting principles which eliminate intercompany transactions. The amounts shown should not be reconciled with the statutory accounts of each territory.

RISK MANAGEMENT AND RISK FACTORS



Banpu Group places great importance on the management of risks that may hinder the achievement of its goal and objectives to become a leading international versatile energy provider in Asia-Pacific. Banpu Group endeavors to reduce risk likelihoods or mitigate associated negative impacts to gain business opportunities that will create added value for the Company. Business risk management is the responsibility of executives at all levels and under the supervision of risk management committees, such as the Risk Management Committee (RMC), to monitor risks and risk management performance. There are meetings of the Financial Management Committee (FMC) to manage financial risks and the Commodity Risk Management Committee to manage volatility risk in coal, oil, and gas prices, which is one of the key factors 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.

In 2020, the Company developed various tools to enhance risk management efficiency, such as the Compliance Risk Management (C-RiM) application to improve the efficiency in managing compliance risk in each host country, identification of Key Risk Indicators, and formulation of the risk mitigation plan. The Company also developed self-assessment forms on several risks such as human rights risks, climate change risks, and water management risks.

1. Strategic Risk

1.1 Risks in Strategic Planning and Implementation

The COVID-19 pandemic has threatened the economies of many countries on top of the China-US trade war, an imbalance between the demand and supply for energy, legal and regulatory changes, disruptive technology and development trends, as well as the higher expectations of investors and stakeholders. The Company has reviewed its direction and business strategy to accommodate changing circumstances, focusing on sustainability from the strategic planning stage to make business planning to withstand challenges. Priorities are maintaining financial liquidity by generating revenues and reducing risks to focus on investing in projects that create immediate cash flow while reducing costs as well as managing a stable cash flow to brace for uncertainty.

The Company holds a monthly meeting to assess the situations, trends, and scenarios, including comparing information from credible institutions and sources to make effective business decisions and determine future business directions.

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

To facilitate future growth in accordance with the Greener & Smarter strategy, the Company improved the recruiting and HR development processes and reviewed the organizational structure and analyzed the workforce and HR development plans. The Company set forth the Training and Development Policy and has allocated 5% of salary budgets in each host country for HR development. It also developed Banpu Learning and Development Framework for competency-based workforce development so that the employees at different levels receive training based on their competency gap and annually reviewed the workforce development plan. Each employee has an individual development plan designed on the basis of required competency, including functional and leadership competency, which varies by job position.

In addition, to prepare employees for the digital age, the Company has organized training sessions on how to apply digital technology at work.

For top management and other critical positions, the Company set up the Succession Planning Committee to oversee the Succession Planning and High Potential Management to ensure business continuity and accommodate business expansion. The Company has selected candidates for all critical positions to fulfill succession plans as targeted.

1.3 Corporate Reputation Risk

Banpu prioritizes brand and reputation risk management as it could have an immense and rapid effect in both the short and long terms, which can be financially immeasurable. The Company focuses on the Sustainable Development Policy by integrating appropriate business strategy under the Environmental, Social, and Governance (ESG) principles to enhance business growth and generate sustainable benefits and returns to all stakeholders. Banpu adopted Management Framework - Stakeholder Analysis based on AA1000 Stakeholder Engagement Standard (AA1000SES) for materiality assessment. It complies with three principles: inclusivity, materiality, and responsiveness. Due to the aforementioned operations, the Company remained on the Thailand Sustainability Index (THSI) and a member of the Dow Jones Sustainability Index (DJSI) in the emerging markets group for the seventh consecutive year. Apart from that, Banpu has been rated 'A' level in MSCI ESG Ratings by MSCI ESG Research, an international organization with expertise and reliability in ESG ratings, for the second consecutive year. TRIS Rating affirmed the company rating on Banpu and the ratings on its senior unsecured debentures at "A+" with a "Stable" outlook, reflecting the Company's strength and readiness to embrace the global challenges.

Moreover, the Company has implemented effective corporate communication strategies and brand reputation management which is in line with

the business directions by focusing on its commitment in conducting business according to ESG principles. The communications strategies are then developed to convey timely and accurate information to all stakeholders, such as quarterly press conferences 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 communication of its Corporate Social Responsibility (CSR) operations and good community relations. Additionally, the Company periodically conducts community and stakeholders' satisfaction surveys and customer satisfaction surveys as well as a survey on employee opinions toward the organization to gather information for business improvement.

1.4 Risk from the Inability to Increase Coal Reserves for Commercial Purpose

As of 31 December 2020, the Company has total coal reserves of 712.98 million tonnes (Mt.) in Indonesia, Australia, and China. The coal reserves by country are as follows: Indonesia 311.08 Mt., Australia 270 Mt, and China 131.90 Mt. The quantity of coal reserves has been audited and certified by a consultant company adopting the reporting standard of the Australian Code for Reporting Mineral Resources and Ore Reserves, or "2012 JORC Code". The Company has a plan in place to assess and estimate the quantities of coal reserves when certain commercial factors significantly change and tend to affect the existing reserves. Such commercial factors include coal price trends, cost factors, and the development of coal production technology. Throughout the years, the Company has also employed various strategies to increase its coal reserves by exploring the mine areas and improving mining plan. The Company has also deployed various strategies to increase the coal reserves by purchasing and blending coals from nearby sites to meet the customers' quality requirements, coal trading, and studying the acquisition plans for new mines to help lift coal reserves and extend the mine life.

1.5 Risk 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 in various areas, carefully considers and provides opinions on the alignment of new investments with the Company's growth strategies and the return on investment against the Company's criteria. 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 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 ensure a smooth investment, sustainable growth, and secure investment return according to the strategic plan.

In 2020, the Company expanded investment in the clean energy business under the Greener & Smarter strategy to pursue ecological-friendly business and fulfill the energy demands of consumers, communities, and society with sustainability in line with the "Our Way in Energy" brand promise. Banpu completed the acquisition of the natural gas asset Barnett shale in Texas, the U.S.A., and the El Wind Mui Dinh, a commercially operational wind farm in Vietnam, which immediately generated income and cash flow for the Company. Partnering with Phuket Patri Tour, Banpu launched the service of "Banpu NEXT e-Ferry," the first electric ferry for marine tourism in Thailand for the Phuket-Phang-Nga route to elevate the green tourism experience. The Company also materialized the Smart Mobility concept by introducing the "Banpu NEXT EV Car Sharing for Caring" project by pioneering

a service depot for rental electric vehicles. Another smart project is a 16 MW floating solar farm project, the largest private-sector floating solar project in Thailand.

1.6 Risks of Climate Change

The Company is aware of climate change risks that potentially affect its operations and growth, such as storms, floods, carbon tax, more stringent climate change laws, and the energy trend toward the use of eco-friendly energy sources. In 2010, the Company set policies and targets for greenhouse gas (GHG) management to increase energy efficiency and the usage of clean energy technologies. Currently, the Company has five-year targets from 2021 to 2025 to reduce GHG emissions per production unit by 7% in coal production and 20% in power generation. Apart from that, the Company has closely monitored the laws and regulations for GHG emissions to accommodate changing business practices, including the Paris Agreement, which is the outcome of the 21st Conference of the Parties to the UNFCCC (COP21), other agreements resulting from the COP, and the policies on energy and GHG emissions reduction in the countries where the Company has invested.

The Company devised a climate change strategy and practices 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 achieve the most effective implementation of the strategic plan. In 2020, the Company implemented GHG reduction measures as follows:

- Setting up the Climate Change Committee to drive and monitor the implementation of operations.
- Considering project development costs based on carbon pricing of the new potential projects as information for management's decision-making,

which is one of the drivers toward the GHG emission reduction target according to the Greener & Smarter strategy.

- Seeking investment opportunities in renewables and other alternative energy sources to reduce GHG emissions and to respond to the demands of a low-carbon society.

2. Financial Risk

2.1 Exchange Rate Risk

The Company follows the risk mitigation plan 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 2020, 33 percent of the Company's denominated debt was in Thai Baht; 59 percent in US Dollar; 7 percent in Australian Dollar; and 1 percent in Chinese Yuan Renminbi. The Company also raised capital in US Dollar or converted it to other foreign currencies to accommodate overseas investments.

2.2 Taxation Risk

To mitigate taxation risks, Banpu group pays taxes within the period of time specified by law. The Company has created tax guidelines and prepared complete documents for settling tax payments. The investment structure is regularly reviewed. All executives in each country are also assigned to closely monitor changing 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, Oil, and Natural Gas Prices

Given volatile coal, oil, and natural gas prices in the current business scenario, affecting the Company's operating results, the Company has delegated the Commodity Risk Management Committee (CRMC) to manage the risk. The CRMC analyses coal, oil, and natural gas price trends and mitigate the potential adverse impact by using financial derivative instruments – coal swap, gas oil swap, and gas collar. The Company also closely monitors and assesses the coal 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.

2.4 Risk from Breaching Financial Obligations under Loan Agreements with Financial Institutions

The Company is obligated to financial covenants under the long-term loan agreements between the Company and financial institutions, which are effective until outstanding loans are fully paid. In case of covenant breaches, an event of default may be declared. To manage such risk, the Company has prepared a financial projection to predict future financial ratios. In subsequent interim periods, real figures are closely monitored to ensure that the Company can maintain compliance with the financial covenants as stipulated in the loan agreements.

3. Operating Risk

3.1 Risks in Coal Business

3.1.1 Risk in Coal Delivery

To ensure punctual delivery of coal to customers with the right quality and quantity as set forth in the agreement, in 2020, the Company managed its delivery risks as follows:

- To enhance its ability to fulfill varying customer needs for coal qualities based on the purposes of their industries, the Company improved the flexibility of its production lines in terms of quality and quantity. It expanded the coal stockyard and increased reclaim system equipment at Bunyut Port, a river port that has been developed continually to serve the coal production plans of Trubaindo and Bharinto mines and other future mines. The stockyard area and the conveyor belt system will significantly improve the blending accuracy.
- The Company initiated an operational excellence framework for coal production and delivery to ensure continuous production and safety for machines and operators. In 2020, the Company focused on improving the preventive maintenance at Bontang Coal Terminal (BoCT) and Bunyut Port by scheduling maintenance during shift change to prevent equipment breakdown and downtime. The initiation helps increase operational time, enables continuous coal transportation and delivery, and efficiently serves the sales plan.
- Due to changing market situations of the coal industry following changes in the global economy, the Company has determined explicit policies to cushion medium- and long-term impacts. In 2020, the Company began studying short-term and long-term plans to develop facilities and logistics to serve long-term plans of its operational and to-be-operational mines. The Company has considered additional investments or a contingency

plan to manage bottlenecks by improving the efficiency of coal loading on the river, finding new mooring points, and devising long-term plans with high-quality contractors to ensure transportation capability and readiness for reliable and efficient coal delivery.

3.1.2 Risk from Rising Production Costs

Production costs are a significant factor affecting the Company's short-term and long-term operating results. Hence, Banpu emphasizes managing the risk from production costs to ensure that it can achieve target operating results and increase profits. In 2020, the Company tackled this risk as follows:

- The Company reduced risks from increased competition and economic impacts by focusing on smart cost management. In particular, the development of efficient inventory management systems at Indominco, Trubaindo, and Bharinto mines can reduce the inventory of supplies, equipment, and spare parts while optimizing storage areas. Standardizing names of materials, equipment, and machine spare parts also reduced redundancies of materials, equipment, and spare parts in the inventory. Moreover, vendors are offered to set up warehouses in the mine areas or share storage space with the Company to enable a timely delivery system of spare parts. With this Just-In-Time (JIT) inventory management, the Company did not have to advance payments, which substantially reduced inventory costs.
- The Company managed long-term costs and optimized available resources, which reduced coal losses in coal blending, to gain the highest added value, meet long-term market demand, and expand potential customer bases in the future. This year, the Company applied optimization techniques to a long-term marketing plan, with a sales plan that optimizes coal prices and is aligned with the long-term mining plans and objectives.

It offered new alternatives and approaches that optimize the Company's benefits and serve the future market.

- The Company established a monitoring system of geological works to reduce the production costs associated with exploratory drilling. The activity consists of two processes: 1) Drilling Plan and 2) Reconciliation, which measures quantity and quality of coal before and after drilling in four aspects, namely 1) quality, 2) speed, 3) productivity, and 4) cost. The reconciliation process requires data analysis of past performance to find causes and develop an effective planning process, including monitoring, analysis, and reporting every month. The Company has emphasized exploratory drilling plans and established a quality control system checklist to ensure that coal exploratory drilling follows the plan and stays within the cost limit. The plan is under regular review according to the pit boundary. If the result does not go as planned, the data will be retrieved for re-examination. As a result, the Company can effectively plan exploratory drilling and control production costs according to the targets.

3.1.3 Risk from Contractors' Operations

The Company's mining operations and coal transportation rely heavily on contractors' operations. Hence, 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 evaluates their qualifications. The results will then be considered before signing or renewing a contract. This approach can reduce the risk from hiring unqualified contractors, which may affect the Company's operational plan. The Company also established its subsidiary to operate overburden removal and transportation of

coal and overburden. In 2020, it increased machinery and equipment to reduce the risk from contractors' operations and raise bargaining power from other contractors.

3.1.4 Production Risk

To ensure production standards with efficiency and continuity, the Company has focused on reducing the risk of production uncertainty, a key factor affecting short-term and long-term business operations. Therefore, the Company has deployed automation technology in the management and operation of coal mines. In particular, Australia's longwall mining reduces mistakes found in the manual operation system and production costs while increasing productivity and efficiency in production quality control. The Company also introduced automation technology to support the following areas:

- 1) To reduce the manual system and likelihood of errors from different discretions of teams operating different shifts, the Company has deployed the landmark operating system in the coal production process. The system works together with the powered roof supports and armored flexible face conveyor (AFC) to arrange shearers along the coal face. A pitch steering system is used to control the shearer's floor drum with several picks to enhance coal separation design according to coal seam structure. The system is the most efficient coal cutting method, which ensures a successful production process as planned and minimizes production errors.
- 2) The Gate End Shield automation system has been deployed in Mandalong and Springvale underground mines for positioning headgate and tailgate. Therefore, the tunnel gate design has become more efficient and accurate and helps reduce operational costs.

Deployment of automation technologies at the Company's coal mines can enhance production efficiency, resulting in increased tonnes per hour. It also reduces lost time or delays in production and effectively controls coal production based on the production plan.

3.2 Risk in Power Business

3.2.1 Risk from Power Buyers

BLCP Power Plant in Thailand and HPC Power Plant (HPC) in Lao PDR are investment projects under the Independent Power Producer (IPP) Scheme. Electricity generated by BLCP Power Plant (BLCP) is solely supplied to the Electricity Generating Authority of Thailand (EGAT) according to a long-term Power Purchase Agreement (PPA) with EGAT, while HPC has international power purchase agreements with both EGAT and Électricité du Laos (EDL). Both are thermal power stations with stable revenue from electricity sales as the agreements guarantee quantities purchased, and 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 a low risk of 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 enter into a long-term power purchase agreement as in Thailand and Lao 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 received good support from the local governments. All of these factors contribute greatly to effective purchase risk management.

Apart from that, the Company's power business in China has been affected by the Chinese government's new energy efficiency and environmental conservation policies, which caused some changes in relevant rules and regulations. To align with the new policies, Banpu has continuously improved equipment in the environmental control system and implemented various risk management measures, such as improving the energy efficiency of the power plants and controlling environmental impacts. Banpu's Zhengding, a Combined Heat Power plant (CHP),

was well-accepted and supported by the Chinese government as a clean CHP plant with impressive economic value for the production of steam.

3.2.2 Risk in Power Generation Operations

HPC potentially fails to achieve its planned operations due to problems with machinery and equipment. The Company has managed the risk by closely monitoring the operations, focusing on investigating the root cause to improve system stability. The Company has also prepared adequate critical spare parts for the power plant and organized staff capacity building and knowledge sharing programs among the companies in its group. In addition, the Company procured appropriate property damages insurance and business interruption insurance for a wide range of events to align with international risk management standards.

3.2.3 Risk in Power Generation from Renewable Energy

Climate change has affected power generation that relies on natural resources like sun and wind. For Banpu's solar power generation business, the primary factor affecting solar power generation is the intensity of the sun's radiation, which depends on weather conditions and leakage during generation. The Company addresses such risks by using statistics of the sun's radiation intensity to estimate the minimum amount of electricity the plant can generate and compare it with the actual electricity output. Besides, the Company deploys state-of-the-art technologies for power plants to keep system loss within acceptable rate and carries out regular maintenance of the power plants.

Natural disasters also affect the Company's solar power plants. For instance, September is the typhoon season in Japan when weather and radiation intensity are unstable and may lead to lower production output. However, as the Company's power plants

were designed according to international standards to withstand natural disasters, its power generation was not affected.

3.2.4 Risk 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 complies with the criteria in contractors' agreements. In 2020, Yamagata and Yabuki Solar Power Plants in Japan achieved a total capacity of 25 MW. By the end of 2020, the Company's total installed capacity in Japan was 111.1 MW (equity capacity of 88 MW). The Shanxi Lu Guang (SLG) Power Plant Project in China is expected to achieve COD in early 2021. Another project is the 80-MW wind farm project in Soc Trang Province, Vietnam, which is divided into three phases, Phase 1 with a 30 MW capacity and Phase 3 total 50 MW capacity. Phase 1 is expected to achieve COD by 2021.

3.3 Risk in Shale Gas Business

3.3.1 Risk from Gas Producers' Operations

The Company's shale gas business faces the risk of underperformance caused by conditions of equipment and machinery, extreme weather, and declining natural gas prices. These factors may result in lower production output than estimated in the annual budget plan. In 2020, the Company slowed down the well completion, though it is partially completed in response to falling natural gas prices, resulting in lower annual natural gas production than in the annual budget plan. Nevertheless, the Company has a plan to continue the well completion when natural gas prices increase to maximize benefits from the well.

The Company entered into a Purchase and Sale Agreement (PSA) through Banpu North America Corporation Company Limited (BNAC), a Banpu subsidiary responsible for managing the shale gas business, to acquire a gas operation in the Barnett shale, located in Fort Worth Basin, Texas. The acquisition made Banpu the largest natural gas producer in the Barnett shale with over 4,200 wells, covering an area of more than 350,000 acres. The asset has the proven reserves (1P) of approximately 3.5 Tcfe and about 600 MMcfed. To facilitate production growth in the US, the Company opened an office at the shale gas production site in Tunkhannock, Pennsylvania, U.S.A., and set up a team of experts in oil and shale gas businesses. It has been five years since Banpu first invested in the U.S. shale gas business by acquiring natural gas resources in Marcellus Shale, which covers vast areas in Pennsylvania, West Virginia, eastern Ohio, and western New York. With Banpu's assets in Barnette Shale and Marcellus Shale combined, the Company has proven reserves (1P) of approximately 4 Trillion Cubic Feet Equivalent (Tcfe) with a production capacity of approximately 800 Million Cubic Feet Equivalent Per Day (MMcfed) .

The Company also promotes the synergy between natural gas resources by tapping knowledge about the production process. It deploys automation and data analytics technologies with lean operations in managing numerous gas wells, resulting in higher production efficiency and lower production costs.

3.4 Risk in Solar Rooftop Power Generation Business

3.4.1 Competitive Risk

Technological advances have lowered the prices of equipment and tools and allowed easier market penetration, resulting in wider market options and fiercer price competition. Banpu supplies its customers with high-quality and highly-efficient tools of international standards and provides integrated solutions as well as 24-hour after-sales service; its prices are quite different from competitors. However, the Company sees the opportunity to create value for customers and make a difference by providing total integrated solutions. The Company has invested in a business that builds on sustainable energy technology, for instance, energy management, energy storage, energy efficiency improvement to offer integrated solutions personalized to each customer's needs.

Moreover, the Company has deployed the quick response strategy to improve efficiency in responding to consumers as well as rapid policy and regulatory changes. It developed a program to elevate communication effectiveness and service quality and analyze databases to deal with fundamental problems. The Company is also looking for partners to build a predictive analytics platform to respond more quickly and accurately to customers' needs while reducing costs.

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

Since the Company's business relies on engineering, procurement, and construction (EPC) contractors, Banpu enhances flexibility by delegating a working group to closely communicate with the contractors and monitor their progress. This enables the Company to identify problems when they first occur and align work standards with the Company's policy, which ensures that delivery of work fulfill the quality requirements.

3.4.3 Risks from Solar Power Generation

Major risk factors affecting solar power generation can be divided into two categories as follows:

1. Risk from the lower intensity of solar radiation than projected

Solar power generation relies mainly on solar radiation. The lower intensity of solar radiation caused by changing weather conditions or thick clouds may affect the solar power generation and lead to lower output, which affects the Company's revenue from electricity sales. However, thanks to Thailand's location, which is close to the equator, the intensity of solar radiation is normally high. The Company has also installed a device at every solar project to monitor solar radiation and weather conditions. The Company uses solar radiation references provided by a reliable technical consultant in the industry to monitor and analyze weather conditions to prove that the installation sites have sufficient solar radiation intensity worth the investment and project development.

2. Risk from early degradation of solar panels

Solar panels are essential equipment for converting solar radiation into electricity. Therefore, if solar panels degrade too early, the output can be lower and will affect the expected earnings. Nonetheless, the Company entered into a contract in which contractors are to guarantee the system's production efficiency as agreed in the initial phase. Consequently, the Company can claim compensation or replacement of solar panels throughout the entire project period when finding that solar panels degrade faster than prescribed.

3.4.4 Risk of Delayed Permit Application Process

The solar rooftop business is under government agencies' authority to grant permits for commercial operations. To ensure that all projects are granted permits within the prescribed time frame, the Company has delegated experienced staff to supervise and ensure full compliance with the relevant requirements.

3.5 Occupational Health, Safety, and Environment Risks

3.5.1 Occupation Health and Safety Risks and Business Continuity Management

The Company places importance on occupational health and safety management throughout the supply chain to prevent occupational health and safety risks. In 2020, the Company continued its focus on 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.

To achieve the Three-Zeros, the Company has developed an occupational health and safety management system based on Banpu's safety culture, covering the occupational health and safety promotion guideline according to the ISO 45001 standard. There are continual improvements in safety operation capabilities and safety awareness raising. Country offices had turned the 2019 results of the safety culture assessment into projects on occupational health and safety. In 2020, Australia carried out seven safety projects; China improved 11 safety areas in Luannan and Zhouping power plants, and Indonesia organized safety workshops at Trubaindo and Bharinto mines. The Company also reviewed occupational health

and safety performance and developed a five-year strategic plan, objectives, and targets (2021-2025) in line with a sustainable business concept or ESG principles. It identified leading and lagging indicators as the Company's implementation framework on occupational health and safety.

Amid the COVID-19 outbreak in 2020, the Company implemented the Business Continuity Plan (BCP), which had been formulated ahead of time. Each business department maintained business continuity by requiring employees to work from home. The BCP enabled successful major operations as planned and continued delivery of quality products and services to customers both outside and inside the Company. Each country office delegated its Incident Management Team (IMT) to prepare and manage a contingency plan since the beginning of the outbreak. The Company has taken various measures to ensure the safety and well-being of employees.

The Company expects its offices in every host country to establish a business continuity management framework based on the ISO 22301 framework. In 2020, the Bangkok Office was certified with ISO 22301:2012 standards for its internal business continuity management system for another year, whereas Banpu Investment China's Beijing office was certified with ISO 22301:2012/GBT/30146-2013 for the first year.

Additionally, the Company focuses on regular rehearsals and preparation for threats. In its five-year plan, the Company set a goal for each business unit to identify and devise a business continuity plan on critical business functions, and each plan needs a rehearsal for critical business functions. The Company also set up the Incident Management Team (IMT) in each country to rehearse the BCP at the country level.

3.5.2 Environmental Risk

The Company complies with environmental standards as stated in law, focusing on effective resource utilization so as to preserve natural resources and to control direct and indirect environmental impacts such as climate change, waste management, land utilization, water resources utilization, and biodiversity.

1. Climate Change

The Company closely monitors and collects information on energy consumption trends and climate change impacts both in terms of frequency and severity to formulate policy and investment schemes. Climate change is particularly a top concern of all sectors, who expect the Company to curb greenhouse gas (GHG) emissions by its business activities to reduce the impact of climate change. The Company's core group of businesses, including coal mining and power and heat generation and gas production, rely on energy resources, which inevitably release GHG into the atmosphere. Realizing its responsibility in reducing GHG emissions, in 2010, the Company devised policies and defined goals in GHG management to enhance energy consumption efficiency and promote the use of cleaner technologies. The Company has set five-year GHG emissions targets, from 2016 to 2020, against the baseline in 2012 - the year the Company included the operating results of the Australian business unit, aiming to achieve the target to reduce GHG emissions per production unit by 25% in the coal business and 15% in the power business. The Company is now setting targets for the next five-year target from 2021 to 2025, which will be enforced from 2021 onward.

2. Environmental Compliance

The Company prioritizes compliance of its operations with environmental laws and regulations as well as relevant environmental standards, e.g., environmental protection law and measures to reduce environmental impact, both of which are stated in the environmental impact report. In 2020, the Company had a satisfactory performance on compliance with environmental requirements as well as continuous improvement. Banpu focused on managing such major risks as follows:

- Soil Erosion Control: The Company prioritizes preventive measures against possible impacts. 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 regularly monitors the quality of water discharged into the environment to ensure that the water quality meets the legal requirements of each country where it operates. In addition, the Company has continuously assessed the locations of its business unit whether they are in a water-stressed area according to the World Resources Institute's Aqueduct Water Risk Atlas. The results will be used to devise a plan and approaches to mitigate the impact on the environment and communities. The Company also engages the communities in water management.
- Acid Mine Drainage Management: The Company determined preventive measures and treatment for acid mine drainage, focusing on the management that covers all stages of mining from mine survey, production planning, land management, and mine rehabilitation. Various technologies are used to prevent the generation of and treat acid mine drainage. For instance, at the Jorong mine in Indonesia, constructed wetland, where local plants are grown, is used to reduce acidity and remove heavy metals in mine drainage. The quality of water in the wetland is regularly checked before being discharged into natural water sources to minimize impacts on the environment. Wetland not only reduces the impact on water quality but also increases green areas providing habitat for birds and insects, which helps restore the ecosystem in the affected areas. The Company also has a plan to construct more wetlands at the Indominco mine to reduce acid mine drainage.
- Cooling Water Management: The Company utilizes a semi-closed cooling system in its power plants to reduce water exchange with external sources and reduce discharge to the external environment to maximize water use. Waterways are designed to allow exposure to cooling air as long as possible to lower the temperature to the level required by law.
- Air Quality Management: The quality of air exiting 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 smokestacks 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 reduce urban air quality.

- **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 windbreaks in high-risk areas as well as reducing the vehicle speed limit in mining areas to reduce dust and for safety reasons, 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 put in place appropriate waste management measures to prevent environmental impact. The management of hazardous wastes complies 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 a building material. The Company also separates fly ash according to size in order to meet market requirements and to increase the selling price.
- 3. 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:
- **Climate Change:** The Company is committed to reducing greenhouse gas emissions by implementing an energy conservation project and conducting a feasibility study to replace diesel with alternative fuels. In addition, the Company annually discloses its carbon emissions information to the public through the Dow Jones Sustainability Index (DJSI), Carbon Disclosure Project (CDP), and its sustainability report.
 - **Fuel Reduction in Power and Steam Production:** The Company has deployed High Efficiency-Low Emissions (HELE) technologies at the Shanxi Lu Guang Power Plant in China. In addition, there were improvements of machinery in other power plants, and recycling of toxic gas from the steel production process in customer's factories, which causes air pollution, as an alternative fuel for power generation to replace coal at the Zouping CHP plant.
 - **Land Use and Biodiversity:** Recognizing the importance of effective land management and land use, the Company has carefully developed its mining plan to minimize impacts on the geography, biodiversity, and ecological system and developed mine closure plans before mining. To achieve effective biodiversity management, PT. Indo Tambangraya Megah Tbk (ITM), a subsidiary of Banpu in Indonesia, in collaboration with Purwodadi Botanical Garden, initiated a project to study and preserve biodiversity at the Bharinto mine located on Kalimantan island since 2010. From 2012 to 2013, the study was expanded to the Indominco mine, which made impressive progress. 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 conduct an assessment of the biodiversity value of highly biodiverse areas in Indonesia, including the Bharinto and Indominco mines. Underground mines in Australia, namely Airly, Springvale, Clarence, Mandalong, and Myuna, also have a plan to conduct an assessment of the biodiversity value every year and will use the information gained to develop a rehabilitation plan to minimize the impacts on biodiversity.

- **Water Resource Utilization:** The Company prioritizes water resource preservation and has carried out many projects to reduce water use in production processes, recycle water, and prevent surface waters from being contaminated by wastewater. Besides, the treated effluent from underground mines is used to supplement community use. To enhance water management efficiency, the Company declared the Water Policy to define the water management scope and targets as well as the standards for data collection and reporting on water resource utilization. In 2020, the Company developed a water flow diagram of all business units for water management planning to improve efficiency and disclose accurate information to stakeholders.

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 impacts on the communities and society, such as environmental and safety impacts, the Company also promotes community development activities that stress “engagement” among relevant stakeholders, including communities, the government authorities, and involved organizations. The key objective of the Company’s community development operation is to improve life quality and well-being of local communities, supporting them to be self-reliant in the long term, in order to gain acceptance as a community member.

To align all community development activities in the same direction, the Company issued the Community Development Policy and management standards. It also integrated local government regulations and international standards such as the UN’s Sustainable Development Goals (SDGs) into its community development strategies and targets in six major areas. The activities have been carried out in collaboration with communities and the government sector. Furthermore, the Company deploys the social

return on investment (SROI) framework in assessing the social impacts of community development activities to maximize the efficiency of its operation in line with its Sustainability Policy.

The Company has implemented the following community development measures to manage a social and community risk:

- The Company has formulated a Standard Practice Manual on Community Engagement which covers community development methods for local people, mitigation of risk from social and community impact. The manual provides community development officers clear operational guidelines of the same standards for all operational areas. The guidelines are regularly updated to appropriately respond to changing situations.
- The Company has put in place the Community Complaint Management System to enable systematic risk management and the measure to prevent rights violations of indigenous people to ensure peaceful coexistence with the indigenous peoples.
- The Company has allocated sufficient Community Development Officers (CDO) at each 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 CDO can also assess the sensitivities or detect harmful incidents at an early stage, allowing them to find timely solutions or mitigation measures.
- The Community Development Division can be an effective communication channel between the Company, communities, and related external organizations, such as local administration organizations, government authorities, 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 engages the community in every stage of development, starting from formulating a community development plan that meets community needs and is consistent with the government's development plan. The Company and the community jointly set up a Community Consultative Committee (CCC), consisting of representatives from local communities, local government, and the Company to collaboratively devise a project action plan and to overcome challenges and obstacles for the optimal benefits for the society and the betterment of the local people, which is a means to prevent or mitigate potential risk.
- The Company has carried out development activities to improve the well-being of each community by engaging and empowering the community so that it becomes self-reliant and sustainable. The Company's development activities cover six areas: 1) economy and income generation, 2) education, 3) basic public utilities, 4) hygiene, sanitation, and primary health care, 5) environmental conservation, and 6) social and cultural promotion and community relations. The activities have improved the quality of life of local communities surrounding the Company's operating sites, leading to satisfaction and a good relationship with the Company.
- Close collaboration among departments enables risk management planning, monitoring, and assessment to prevent and mitigate the social and community impact of risks arising from the Company's operations, especially those relating to the environment, safety, and logistics.
- The Company has co-operated with contractors in Indonesia on community development work. Many of the major contractors have carried out community development operations, and the Company has worked with them from the planning process, budget allocation, and staff allocation to exchange knowledge, expertise, and information. The cooperation enhances the efficiency and benefits for the wider local community while reducing redundancies of social development management in the area.
- The executives at all levels closely monitor community development operations and regularly visit the communities, allowing them to track the progress of the projects. This is also an opportunity to meet with community leaders and members and get suggestions for improvement to ensure that the Company has run careful operations with a clear working plan and well-defined risk management that poses no threat but create benefits and satisfaction for both the communities and society.
- Community 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 create benefits and satisfaction for communities and all stakeholders.
- The Company has its staff who are not responsible for community development work perform quality assurance review to ensure the highest transparency and efficiency.
- The Company adopted the social return on investment (SROI) framework for social impact assessment of its community development activities in order to improve its operation to achieve maximum efficiency and minimum potential impacts and drive sustainable community and social development.

4. Risks in Compliance with Applicable Laws and Regulations

4.1 Compliance Risk

Realizing the impacts of non-compliance on its operations and reputation, the Company places importance on compliance with applicable laws and regulations both in Thailand and abroad to ensure that its operations are in line with good governance principles, namely, accountability, transparency, and fairness. Generally, compliance risk may arise from various factors, e.g., legal complexities, frequent legal changes, misinterpretations of practices. Even the foreign languages in which the laws are written can lead to wrong practices and affect the Company's finance and operations, resulting in such penalties as fines and suspension or expulsion of permits. On top of that, the Company's reputation and image can be damaged. Banpu thus prioritizes management of compliance risk and delegated to Corporate Compliance Department the duty to supervise legal compliance of all units to assure shareholders, the Board, executives, and employees that the Company has strictly complied with applicable laws. In addition, the Company regularly monitors the status of draft laws that will affect the Company in order to comply with the law when being enforced.

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

Since most of its businesses are located overseas, the Company encounters policy and regulatory changes in those countries. Therefore, the Company stresses the development of processes and tools to handle the risks from policy and regulatory changes in the countries where it has invested. The executives in each country are entrusted with the duty to closely monitor policy and regulatory changes. The Corporate Compliance Department has used

the Laws In-Hand application to help monitor policy and regulatory changes. The Department also worked with the Enterprise Risk Management Department to develop a Compliance Risk Management (C-RiM) mobile application to improve risk management efficiency. Besides, the Company has collaborated with many governmental and private organizations as well as stakeholders to monitor policy and regulatory changes. The Company also hires local consulting firms to help interpret local laws and advise practices to achieve full compliance.

Over the past year, the countries where regulations, rules, and policies were substantially changed and had impacts on the Company are 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, and Shandong are to reduce coal consumption by 10%, while the Yangtze Delta Region has to cut coal use by 5%. The plan also restricts that coal-fired power plants whose fuel consumption rates are equal to or greater than 65 tonnes per hour reduce energy consumption and improve production efficiency. The Company regularly reviews its business strategy and direction to ensure compliance with the aforementioned regulations. It has improved the efficiency of the production system and truck transportation to meet the emissions standards and seek investment opportunities in green energy sources such as natural gas.

- The Chinese government started the electricity system reform in 2015 to regulate monopolies and encourage competition by cutting costs and enhancing quality, resulting in lower electricity prices. In September 2019, the government enforced the policy on electricity price reform that replaced the on-grid tariff with the base-price-plus-floating mechanism, which can deviate up to 10% higher or 15% lower than the base price. Since it became effective on 1 January 2020, the Company has closely monitored the policy to assess the impact and adjust its growth strategy accordingly.

Republic of Indonesia

- On 5 January 2018, the Ministry of Energy and Natural Resources proclaimed Law No. 23K/2018 about Domestic Market Obligation (DMO), 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 August 2019, the Ministry of Energy and Natural Resources proclaimed Law No. 205K/2019 about the regulations for technical information verification of coal sales and transportation. The Ministry started using an online system to track and monitor permit holders' legal compliance to ensure that their production and sales comply with the RKAB permits. The Company complied with the regulations and revised its operational regulations to comply with the regulatory change.

- In November 2020, the House of Representatives of the Republic of Indonesia enacted Law Number 11 of 2020 or the Job Creation Act (Omnibus Law), aiming to open the door to labor-intensive industry and boost employment and economic growth. The new law is favorable to the companies with such mine permits as IUP-OP: Izin Usaha Pertambangan Operasi Produksi (Operation Production Mining Business License) and IUPK-OP: Izin Usaha Pertambangan Khusus Operasi Produksi (Operation Production Special Mining Business License). Nonetheless, the Company regularly monitors the impact of the law and reviews business direction and strategy in Indonesia amid changing situations. The Company also assesses the risk impact to effectively adjust its strategy to achieve growth in Indonesia.

Japan

- On 5 December 2018, the Ministry of Economy, Trade, and Industry (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 from 1 July 2012 to 31 March 2014
 - Projects that were not under the requirements of the Three-year Rule with reference to the additional amendment issued on 1 April 2017. Projects under such conditions will have their FiT lowered to JPY 21 per kWh unless their project development meets the following requirements:

1. Projects whose “construction plans” were approved by the authorities before 5 December 2018, or
2. Projects which commenced construction before 5 December 2018 or whose “construction plans” are approved by the authorities before 30 September 2019 and commenced construction by 31 October 2019.

The qualified projects have to submit an application for a grid connection by 31 August 2019 and get approval by 30 September 2019 to maintain the current FiT price. Such projects also need to achieve COD before 30 September 2020. If they fail to achieve COD within the agreed period, they will suffer a shorter period of the FiT agreement based on their project delay. The Company has closely monitored the progress of those projects to submit the application for approval in time to be eligible for the exception clause to minimize possible risks to under-development projects.

In 2020, Banpu's Yamagata and Yabuki solar power plants in Japan commenced commercial operations, generating a total capacity of 25 MW.

- The Japanese government announced the change in the electricity price policy from the FiT scheme throughout the lifecycle of a power plant project to the bidding scheme for projects that were approved after 1 April 2017, which may decrease return on investment for new projects under the bidding scheme. Nevertheless, the Company has prepared for the risk by seeking methods to increase competitive advantage, e.g., cutting financial costs or finding alliances or joint venture partners.

Thailand

- On 27 May 2019, the Personal Data Protection Act, B.E. 2562 (2019) (PDPA) was published and will come into full force on 27 May 2021. The essence of the PDPA includes three major points as follows:

1. Data owners must provide consent for the collection, use, and disclosure of their personal data according to the data collection purpose previously informed by the data collector.
2. Data collectors must keep the personal data secure and do not allow correction, alteration, or unauthorized access to the data.
3. Data owners have the right to withdraw consent or request data collectors to delete or destroy their personal data if they wish.

The Company complies with the act and set up a PDPA working team to ensure effective collection, use, and processing of personal data and Banpu Group's compliance with the PDPA.

5. Emerging Risk

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 has assessed potential risks and found key emerging risks as follows:

5.1 Emerging Risk from the Advancement of Energy Technologies Affecting Energy Industry

Nowadays, technological advances and alternative energy play a critical role in the energy industry,

e.g., high-performance energy storage devices and systems and electric vehicles. Production costs in the renewable energy business are decreasing as a result of modern technological development. The governmental sector also issued policies to curb greenhouse gases (GHGs) according to the Paris Agreement to combat climate change and promote renewable and alternative energy sources. All these disruptive technologies have altered business operations in the energy industry. To address the risk and move forward to the low carbon society, the Company endeavors to deploy technologies and innovations in the development of eco-friendly products, such as investing in research and development of battery technologies for innovative energy storage solutions.

In 2020, the Company continued its Greener & Smarter strategy, aiming to create the integrated energy solutions that satisfy each customer's demand. To create energy sustainability for society, the Company has resorted to novel technologies and innovations and introduced Banpu NEXT e-Ferry, Banpu NEXT EV Car Sharing, a pilot project offering EV car rental services, and floating solar installation project.

The Company set up the Digital Center of Excellence to drive digital transformation and agile working in operational development. Digital Capability Center (DCC) was also established in Indonesia, China, and Australia to improve collaboration in creating work innovation in each business to increase the competitive advantage of existing businesses.

5.2 Risks from Climate Change

Climate Change has caused natural disasters in countries worldwide, for instance, Australia's wildfires and extreme rainfall in Indonesia. The Company has also been affected by climate change, so it established measures to cope with climate risks and included the risks in its business continuity plan. The Company has the strategy to be part of the low carbon society with a clear target to reduce greenhouse gas emissions. It has set the carbon price and used

it as a factor for a feasibility study in order to achieve the GHG reduction target. In addition, it has prepared to disclose its management of climate-related risks and opportunities according to the approach of the Task Force on Climate-Related Financial Disclosures (TCFD).

5.3 Cyber Threats

Increasing digital dependence may lead to cyber threats, which can result in data breaches and operation shutdown and affect the Company's business continuity, image, and reputation. In 2020, the Company implemented the following risk management measures.

- Announcing the Information and Cyber Security Policy and practices for employees to follow
- Educating employees on cyber threats, including practices and prevention against cyber threats
- Rehearsing cyber-incident response plans and information technology disaster recovery plans annually to enable timely response and mitigate impact or damage on the Company's operations
- Obtaining ISO 27001 certification, the international standard that sets out the specification for an information security management system (ISMS), and deploying the standard as a model for risk assessment, security planning, and implementation to safeguard digital information and physical documents

5.4 Risks of the COVID-19 Pandemic and Its Impacts on the Company's Businesses and Operating Results

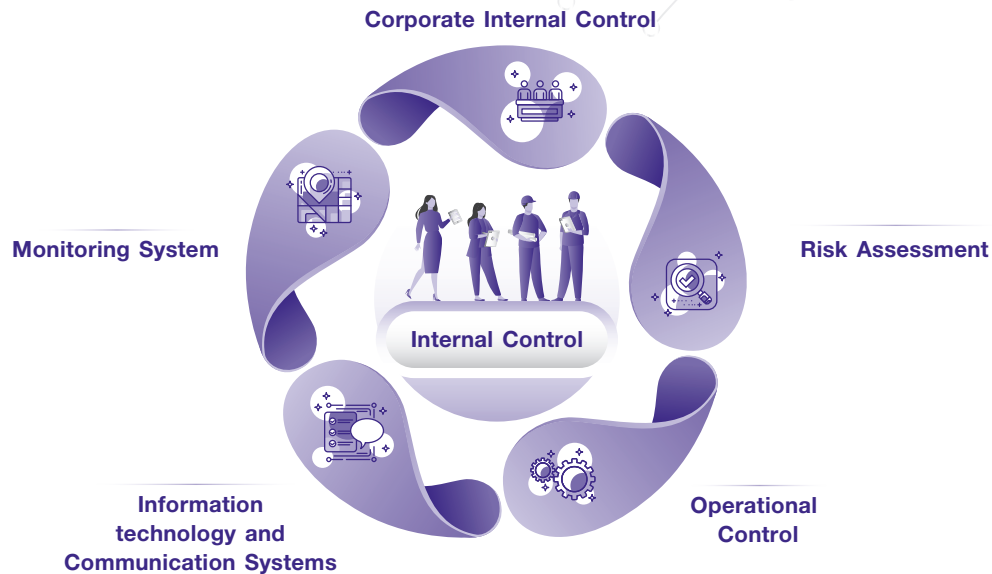
The COVID-19 pandemic has impacted businesses around the world as well as the Company's operations as its businesses are based in both Thailand and abroad. The Company has in place mitigation measures for production and operational shutdowns by adopting the Business Continuity Management System for its operations and regularly prepares for unexpected incidents. The Incident Management

Team (IMT) in each country rehearses the Business Continuity plan annually to ensure that the Company's business will not come to a halt in the event of force majeure, yet be able to fulfill delivery of all products and services according to terms and conditions and create a long-term return for all stakeholders.

Apart from that, the Company has implemented the Work Anywhere Policy, allowing employees to work from anywhere. It also deployed the electronic document management system to ensure quick and timely communication of significant information both within and outside the organization. Therefore, after the Work Anywhere Policy was implemented during the COVID-19 outbreak, employees were able to work smoothly and efficiently and became a major force driving strong business growth for the Company.

Initially, the Company anticipated that the COVID-19 did not significantly impact its operations. When considering the impact in China, it was found that demand for coal decreased in some industries that had to cease operations. Meanwhile, there was a growing demand from medical device factories. On the supply side, coal production was temporarily affected by a labor shortage and travel restrictions, which restrict intercity truck transportation, resulting in more imports of coal. Rail transportation of coal was not affected as the government allowed coal mines to resume operations. As for the power generation business, there was increasing electricity demand from the medical device industry while household demand for electricity remained stable. The Shanxi Lu Guang power plant project, which is under construction, was facing labor and building material shortages. However, the project is expected to achieve commercial operations by early 2021.

INTERNAL CONTROL



Banpu's has an effective internal control system which is in accordance with the Committee of Sponsoring Organizations of the Treadway Commission (COSO) framework. This enables the Company to achieve its strategic and operational goals with effectiveness and efficiency, the reliability of financial statements and other reports, as well as legal and regulatory compliance. The Company has promoted awareness among its executives and employees about the importance of good corporate governance, risk management and appropriate internal controls at corporate, department, as well as activity levels. Well-planned procedures are in place to support the Company's strive for sustainable growth and the achievement of objectives, mission, and strategies while protecting the Company's assets and stakeholders' investments.

Facing uncertainty amid the global pandemic of COVID-19 in 2020, Banpu adjusted its strategy and management approach by continuously diversifying its investments into eco-friendly businesses in different countries. To monitor risk management, the Company and its subsidiaries focused on developing key internal controls and strengthening auditing system by using modern technology for timely and effective management. The Company's Global Internal Audit Department is responsible for auditing, reviewing, and monitoring by performing remote audit which based on data analytics and digital technologies to identify anomalies or red flags, thereby ensuring the efficiency and effectiveness of corporate governance. Insights from the analysis were studied collaboratively with related units to enhance operations effectiveness, cost reduction, and readiness for business expansion and investment.

At the Board of Directors' Meeting on 28 January 2021, the Board evaluated the adequacy of the internal control system based on the Security Exchange Commission (SEC)'s evaluation form prepared by the management and reviewed by the Audit Committee. The overall evaluation results revealed that the Company has an sufficient, appropriate and efficient internal control system and risk management in line with international standards covering the corporate level to activity level, which affirms 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

Banpu promotes a corporate culture that focuses on integrity and ethical conduct while governing to ensure that its business operations are aligned with the Company's vision and mission. The Company has also created an efficient and effective control environment to reduce the risk of unable to achieve its objectives by implementing key internal control as follows:

To highlight the importance of its diverse business groups and to facilitate future expansion, in 2020, the Company restructured its organization by shifting from a “geography-based approach” to a “product-based approach”. Line of command was clearly defined with key, roles and responsibilities by defining Key Performance Indicators (KPIs) for performance assessment. The Company has also established a Delegation of Authority in which the authority for transactions is cascaded from senior management to lower levels according to the organization's structure. Types of business transactions and approval limits are defined in writing to facilitate check and balance, while ensuring that management and operations are effective, agile, appropriate, and fit to business conditions. Policies and procedures have been appropriately formulated to cover all businesses and new projects. They are subject to be reviewed and updated in response to the changing work environment both inside and outside the organization.

With a commitment to integrity and transparency, Banpu adheres to the principles of good corporate governance and the Code of Conduct. The Company also has the Anti-Corruption Policy, the Corporate Fraud Management Policy of the Company and its subsidiaries as well as whistleblower channels. The Investigation Committee is responsible for the investigation of corruption or suspected cases. Moreover, the Company strives to foster employees' understanding and practice of the corporate culture, “Banpu Heart” to move the Company toward a firmly and sustainable future as a leading international versatile energy provider driven by the Greener

& Smarter strategy, which emphasizes on more environmentally friendly business operations and smart deployment of technologies and innovations.

2. Risk Assessment

The Company puts a high priority on the management of risks from changes caused by both internal and external factors to respond to situations that may affect its business activities at various levels ranging from department, business unit, to corporate level. Risk management is supposed to be a key component of every process of business operations with which all employees comply.

The Risk Management Committee is responsible for devising a policy and risk management approaches, overseeing and monitoring the overall management of critical risks. The management and employees in all units also take part in the assessment of risk factors and determining measures to minimize risk to an acceptable level. The risks in all areas are actively assessed, namely strategy, operation, finance, regulatory compliance, information technology, corruption, and company reputation. Risk management situations are reported to the Risk Management Committee, reviewed by the Audit Committee, and reported to the Board of Directors on a quarterly basis.

Acknowledging the importance of related environmental, social, and governance (ESG) principles, Banpu has incorporated climate change, water management, human rights, cybersecurity, corruption, and non-compliance with the Personal Data Protection Act (PDPA) into its risk profile. The Risk Management Committee and all business units are responsible for establishing mitigation measures for the short-term action plans and the strategic plan. In 2020, the Company has deployed digital technologies including mobile applications such as C-RiM (Compliance Risk Management) and LIH (Laws in Hand), which enabled the management to oversee, monitor, and manage compliance risks in a timely manner via a dashboard that presented data from

all countries where Banpu operates. These applications help the Company to keep up with challenges from changing laws and regulatory environment in all business locations.

3. Operational Control

Banpu has been operating its business under a sound and effective system of internal control. The Company has put in 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, practices, and operating procedure in written documents, which are reviewed and improved regularly
2. Identifying and adjusting corporate structure by defining clear segregation of duties and delegation of authority with effective checks and balances
3. Establishing a clear policy on related party transaction based on maximum benefits for the Company on similar basis to the transactions at arm's length
4. Safeguarding the Company's assets to prevent misuse of the assets for personal purpose
5. Establishing an appropriate and effective IT control systems
6. Managing, monitoring, and governing operations to ensure compliance with the Company's action plans, policies, regulations, procedures, as well as external compliance while having Key Performance Indicators (KPIs) that are relevant to the Company's targets

In 2020, the Company improved procedures to align the Greener & Smarter strategy to reinforce its position as a leading international versatile energy provider.

The Company highlights environmentally-sound business and deployment of cutting-edge technologies to enhance the efficiency in terms of both speed and accuracy.

4. Information technology and Communication Systems

The Company has developed effective and secure information technology (IT) systems in compliance with applicable laws, to enable sustainable business expansion, and to support its target to becoming an integrated smart energy solutions provider. Several 4.0 technologies were introduced to facilitate business transformation, including the AI-based smart energy trading system, the AI & Internet of Things (AIoT)-based power plant monitoring system, as well as product development and customer service by using big data analytics. In accordance with the enhancement of IT general control to ensure confidentiality, integrity, and availability of data including with data privacy. Privacy protection is also developed to comply with the Personal Data Protection Act (PDPA). In all countries where it has business operations, the Company has modernized IT infrastructure with modern workplace technologies to facilitate agile working and accommodate working from home as a New Normal during the COVID-19 pandemic.

In 2020, Banpu upgraded its network infrastructure to enhance operational efficiency and facilitate the Company's long-term goal toward agile working. The "Security by Design & Privacy by Default" principle is applied in every stage of all digital development initiatives, from kick-off to quality assurance. In terms of data insight analysis, the Company has implemented the Banpu Smart Analytics (BaSA), a platform to accommodate a data-driven organization. In response to cyber threats, the Company adopted end-to-end cyber risk mitigation solutions, providing protection from the back-end IoT equipment to data platform at the end user side. To achieve higher standard of

information security, the Company started applying the ISO 27001 international standard for information security, hence achieving increased customer's confidence and complying with applicable laws both in Thailand and other countries where Banpu operates.

The Company has developed internal reporting system based on a business intelligence software, a database that allows management and employees to access and use important information for increased work efficiency. It covers various aspects of operations from procurement cycle, inventory monitoring, production performance, and asset management. The Company communicates key information through the website, and use Microsoft Team 365 to connect with multi-country business operation. The Company has also used electronic document management system to facilitate communication and transfer of data and information both inside and outside the organization, which is fast and modern while guaranteeing information security by restricting access authorization according to roles and responsibilities and use of information. There are effective internal communications channels such as email, public relations through wide range of activities, and general meetings, all of which enable effective collaboration and smooth operations. Investor Relations Department and Corporate Communications Department are responsible for information disclosure and communication to all stakeholders in an adequate, appropriate, accessible, and equitable manner, using a modern, clear, and easy-to-understand communication style.

5. Monitoring System

Banpu has implemented a monitoring system both at the management and operational levels. There are regular reviews and monitoring of performance by supervisors and department heads. Executive meetings are held regularly to monitor whether the performance meet the predefined goals. The Global Internal Audit and Compliance Unit review monitor the performance as follows:

- **Global Internal Audit Department** is responsible for auditing and assessing the efficiency and effectiveness as well as adequacy of the Company's internal audit system and performance in compliance with the corporate policies and procedures. It emphasizes risk-based auditing, and advises on the improvement of work processes and monitoring the performance to ensure that appropriate and timely corrective actions including risk mitigation are taken. Due to travel restrictions during the COVID-19 pandemic in 2020, the Global Internal Audit Department conducted a "remote audit" by using data analytics and digital technology while maintaining audit quality and effectiveness, proving its ability to move toward "Smart Audit & Continuous Monitoring." Auditors has also enhanced their knowledge of internal control, internal audit, technology, data analysis, and agile audit to improve effectiveness and assurance in audit work, which helps protect and sustain value added for the Company.
- **Corporate Compliance Department** is responsible for promoting, reviewing, and monitoring compliance with applicable laws, external regulations, and corporate culture, while focusing on awareness over compliance with environmental laws and community requirements. The department reports performance based on the ISO 19600 compliance management system - guidelines. Regarding the compliance management system, the Company has improved the Group's compliance documents, which are enforced in all countries, based on the Three Lines Model in terms of risk management, provided compliance advice to business units, and improved the activity-based compliance process to cover the overall and operational levels. In 2020, the Company deployed applications which developed to improve effectiveness and efficiency of work as follows:

- C-RiM (Compliance Risk Management) application was used to manage corporate risks and supervise regulatory compliance. C-RiM offers real-time monitoring of risk assessment, and the management or employees can view the progress report anytime, allowing them to properly respond to the situations and the needs of the government sector and relevant government agencies.
- Laws In-Hand and C-Rim applications were deployed, enabling employees to keep track of regulatory updates. The applications help reduce compliance risk in each country and ensure timely responses.
- The Company updated its Compliance Obligation List (COL) to cover all the latest issues to enhance awareness in all business

units regarding the importance of compliance risk management and its prevention. This helps the Company to govern its compliance with laws and regulations in the countries where it operates.

Apart from that, Banpu has prepared for compliance with the Personal Data Protection Act (PDPA) in Thailand and applicable laws in other countries. The Board of Directors and the management have devised policies and practices, set up a working team, appointed Data Protection Officers, and created a data inventory in every business unit. The Company also communicated about the PDPA, use and collection of personal data, data breach system, and coordination with government authorities to ensure that all executives and employees understand, realize the importance, and strictly comply with the act.

SUSTAINABLE DEVELOPMENT

Sustainability Policy

“ At Banpu, we have a strong belief that **“an industry would be strong 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 a 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 meet customers' need, and enhance customer relationship management and seek new business opportunities.

Value Creation for Stakeholders

Compliance

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

Occupational Health and Safety

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

Environment

Create a balance of business development and environmental protection, study and evaluate environmental impact before project implementation to identify preventive measure to reduce an impact on environment in every project, place high importance on an integration to reduce or optimize resource utilization, provide impact prevention at sources, and properly conduct environmental management along the 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 as well as set up monitoring system in order to ensure that our Sustainability 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 based on social and global responsibility. It incorporates the sustainability principles and the business practices concerning

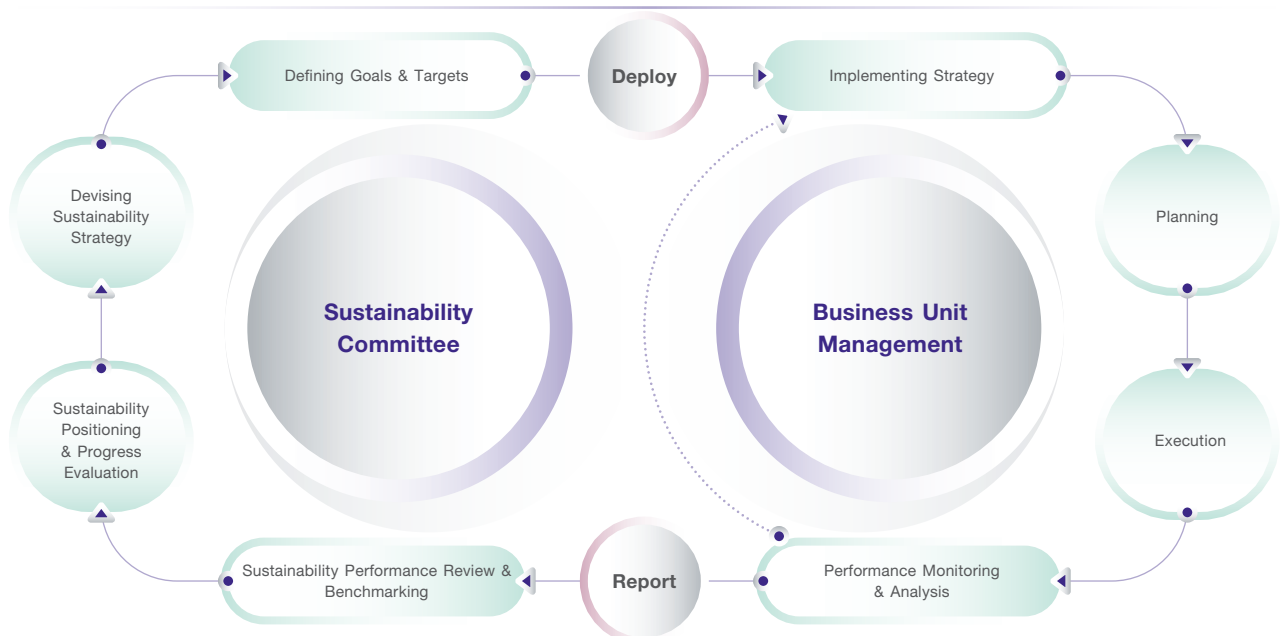
Environmental, Social, and Governance (ESG) principles from both local and international contexts in setting sustainability strategies for instance:

- UN Sustainable Development Goals (SDGs) and the UN Global Compact, which are used as guidelines for determining sustainability aspects.
- UN Guiding Principle on Business & Human Rights and Universal Declaration on Human Rights are used as policy inputs for setting up a human resource management policy and a human rights policy.
- Assessments based on the Environmental, Social, and Governance criteria by external assessors, such as MSCI ESG Ratings, RobecoSAM Corporate Sustainability, are integrated with corporate performance assessment.

Banpu's sustainability or ESG principles are not only limited to the Company's operations but also cover all business partners throughout the entire 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 sustainability and maintaining a balance between enhancing a competitive edge and creating value for all stakeholders.

Sustainability Management

Banpu drives sustainability by integrating sustainability management into operations management strategies. By doing so, each unit assesses environmental, social, and governance 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 or ESG principles 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.



Sustainability Committee

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

- Monitor and evaluate sustainability or ESG performances in the past year.
- Devise and review a policy or management system standards including setting up the relevant targets to enhance competitive advantage to ensure that the Company's business grows in tandem with social and environmental responsibility.

To ensure smooth sustainability management, the Sustainability Committee convenes 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.



Sustainability Committee
(Effective date: April 10, 2020)



*Acting by Chief Executive Officer

Human Rights Policy

Banpu prioritizes respect for human rights and has incorporated the policy into its sustainability strategy. The Company respects human rights principles, both locally and internationally. Observing the UN

Guiding Principle on Business & Human Rights and the Universal Declaration on Human Rights, the Company strives to find measures to prevent human rights violations and mitigate the impacts caused by the Company's operations. These practices are part of the implementation to foster the corporate culture.

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 sustainability 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 relating stakeholders.



Sustainability Reporting

The Company discloses sustainability strategies and performance, covering ESG principles to stakeholders through the Sustainability Report since 2011. Sustainability reports are published both in hard copy and online version, which accessible via the Company's website. The preparation of the reports in accordance with the GRI Sustainability Reporting Standards. The Company has also submitted sustainability reports for external verification based on GRI Standards: Core option.



Global Recognition for Sustainability

Member of
**Dow Jones
Sustainability Indices**
Powered by the S&P Global CSA

- The Company has been recognized as a member of the Dow Jones Sustainability Indices (DJSI) for seventh consecutive year and secure its position of the Industrial Leader in Coal & Consumable Fuels industry.

**Sustainability Award
Gold Class 2021**
S&P Global

- The Company remains the Gold Class 2021 in the Coal & Consumable Fuels sector of the Sustainable Asset Management (SAM) Sustainability Award 2021.

MSCI
ESG RATINGS

CCC	B	BB	BBB	A	AA	AAA
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- In 2019, Banpu received a rating of A (on a scale of AAA-CCC) in the MSCI ESG Ratings assessment.

National Recognition for Sustainability

THSI
THAILAND
SUSTAINABILITY
INVESTMENT 2020

- The Company maintains as one of the companies in Thailand Sustainability Investment by the Stock Exchange of Thailand for the sixth consecutive year.

SET
The Stock Exchange of Thailand

- The Company remains on the list of the SET THSI index since the Stock Exchange of Thailand first introduced the index in July 2018.



- The Company remains as one of the top listed companies with excellent corporate governance scoring since 2019, according to the Corporate Governance Report of Thai Listed Companies developed by The Thai Institute of Directors Association (IOD).

HUMAN RESOURCE MANAGEMENT



At Banpu, “Employees” are considered the most powerful driving force and the key toward sustainable business growth.

Therefore, the Company endeavors to put its employees at the heart of every process in human resource management. This is achieved by focusing on the management of diverse workforce in terms of race, religion, language, culture, age, knowledge, perspective and work experience in 10 countries where it operates. By leveraging these strengths, the Company can improve its competitive edge and create a happy, agile, yet independent workplace to drive innovations that lead to sustainability of the Company.



Total Number of Employees by Country

As of 31 December 2020

Thailand



465

China



926

Vietnam



11

Mongolia



93

Indonesia



2,857

Australia



1,592

Singapore



16

The United States of America



200

Japan



23



(Unit: People)

“**Passionate, Innovative, Committed**” are the three core values uniting thousands of Banpu’s employees as **“One”**. ”

“**Banpu Heart**” is a corporate culture that harmonizes the differences of Banpu’s 6,000 employees in 10 countries and connects them as “one” to steer the Company’s transformation in alignment with its vision and business strategies. All Banpu’s executives and employees adhere to “**Banpu Heart**”, which was developed from “**Banpu Spirit**”, the long-standing principle practiced by Banpu people for many decades. Driven by the corporate culture, they can propel the Company forward in the same direction to become the Asian energy company at the heart of innovation, technology, and sustainability. The three corporate shared values are as follows:

BanpuHeart

Passionate

Striving for the Future

1

Pursue for Success

2

Can Do More

3

Be Agile and Change

4

Express Care and Share

Innovative

New Ideas, New Solutions

1

Transcend the Trend

2

Ideate and Get Real

3

Learn Fast, Do First

Committed

Success Is the Only Option

1

Adhere to Integrity and Ethics

2

Synergize and Network

1

Engage to Sustainability Development



To strengthen and sustain the corporate culture, the Company has incorporated **“Banpu Heart”** in all human resource processes, for instance, employee recruitment, new employee orientation, and employee performance appraisal and job promotion.

In 2020, the Company adapted to changing the work environment by integrating both online and offline activities to cultivate **“10 Key Behaviors of Banpu Heart”**. Employees are encouraged to incorporate the behaviors in their work to become more agile and align their behaviors with the Banpu group business goals. The activities allow them to share their opinions and points of view and understand the corporate culture in the same direction.



Banpu Heart and Employee Engagement Survey is annually conducted. In 2020, the Company conducted the survey to measure the levels of engagement and alignment of employee behavior with the corporate culture reflecting **“Banpu Heart”**, with employees who are internal customers and important stakeholders of Banpu. The survey results in 2020 are as follows:



“

Banpu believes that **“People”** and **“Open-Minded Society”** lie at the heart of innovation.

”

The Company places great importance on fostering innovation culture by cultivating innovation behaviors and open-mindedness and encouraging everyone to initiate something new. An innovative vibe is created across Banpu; for example, employees teamed up in **Banpu Mind Space** activity to share innovative ideas, learn about innovation development process, and provide feedback for project improvement.



Over the past decade, Banpu has trusted in the power of creative and innovative thinking, which empowered Banpu people to tackle ever-challenging changes by creating and extending new concepts. Accordingly, Banpu is committed to cultivating and developing **“Innovation”**, a corporate core value, under the concept of **“Working Agility”**. The Company encourages employees to practice agility through job rotation, cross-functional working, cross-country working, and short-term and long-term overseas assignments. Moreover, the Company has continuously promoted various forms of inspiring sessions and knowledge-sharing activities and set up a creative work environment to encourage innovations from employees in every country. Employees can present their creativity through the **“Wow Ideas”** project, which promotes innovative and smart working styles. Additionally, the Company encourages employees to ideate and get real, and be bold to experiment and try new things by joining the innovation contest. Promising projects from each country will be selected to present their innovative ideas

in the **“Banpu Innovation Convention”** to inspire other employees and to transform their ideas into innovations.

Banpu strives to align human resource management with its corporate vision and timely respond to changes in the business environment. The Company is heading forward to become an international versatile energy provider; hence, it promotes the empowerment of employees and working agility to enable harmonious collaboration. The Company also provides opportunities for employees to build new skills and advance their careers cross-functionally in all countries. In 2020, the Company developed **“Banpu People Value Proposition”** for effective human resource management as follows:



In 2020, the Company implemented human resource management endeavors to foster employees' skills as follows:

1. Continuous Employee Capacity Development

People Capability Development Policy

In 2020, the Company not only organized basic training and development programs, but also designed training programs in the form of blended learning for management and employees of all levels with support from leading consulting firms and management training institutes in Thailand and abroad. This is to reskill and upskill the management team and employees to accelerate the speed of change and improve employees' capabilities to best match their job positions and align with the Company's business direction. In 2020, the average training hours of the management and employees in Thailand was 20 hours/person, and the training programs provided are as follows:

- Selective Learning Program offers in-house and external training courses as well as short courses. Banpu has an explicit policy to earmark a budget for training at a minimum of 5% of the total yearly salary budget. In 2020, major selective learning programs carried out were as follows:
 - **Leadership skills** for example, 7 Habits for Highly Effective People, enhancing business skills such as Energy Titan, negotiation skills, and coaching skills to unleash potentials. To increase learning opportunities for employees in the New Normal Era, the Company offered skill training with renowned institutions both in the form of classroom and online learning.
 - **Functional skills** such as strategic thinking and planning, project management, business models workshop and Banpu group's sustainability principles.
- Global Leadership Program is participated by Banpu's executives from all countries. The program promotes diversity and inclusion in the workplace and cross-functional networking to instigate international cooperation and collaboration. The program features training topics such as self-development to enhance leadership skills, development of team leadership skills, and development of business leadership skills.



To fulfill the goal of sustainable growth, the Company has continued the **"Learning Application Project" (LAP)**, which promotes the application of knowledge in real work situations. In 2020, Design Thinking was adopted in the learning and project development process as well as the development of new skill sets. Besides, the Company facilitated autonomous learning through Digital Academy's foundation courses: Power of Digital, Agile 101, Intro to Design Thinking, and Defining a Minimum Viable Product, as well as alternative courses of employees' choice.

Succession Planning and High Potential Management

Banpu is well-aware of the continuity of workforce planning and management to ensure sustainable and stable growth. In 2020, Banpu's Succession Planning Committee selected potential successors for top management positions. It has continuously monitored their development through assessment of competency, personality, and Individual Development Programs (IDPs) to ensure that succession planning aligns with the business strategies. The Company has identified the Key and Critical positions, created the Key Success Profile of Key and Critical Positions and continued to review the selection criteria to strengthen long-term succession management and increase agility in full alignment with Banpu's businesses.

In 2020, Banpu started using the Global Human Resources Application to enhance the effectiveness of succession planning and high potential management. With this app, Banpu's executives can access real-time human resource information from anywhere, which helps increase agility and streamline succession planning and high potential management to better align with the Company's strategic directions and enhance human resource management sustainability.



2. Supporting Working Agility with Speed x2

Global Human Resource Information System Project

One of the projects to improve employee agility at Banpu is the development of a single source of employee data in all countries to enable easy access to data and efficient analytics for speedy human resource management and international work. In 2020, the Company gradually rolled out the system and collected user feedback for system improvement to ensure the compatibility with the new work style. The system is expected to be completed by 2021.

Effective Organization Structure

Realizing that the organizational structures with a flatter hierarchy enhance the agility of new work styles and facilitates quick business operations to maximize efficiency, the Company regularly reviews and restructures the organization to align with its growing business directions. In 2020, Banpu and its subsidiaries reviewed and transformed its organizational structure from **a Geographical Based Organization Structure to a Product Based Organization Structure**. The new organizational structure consists of such core groups as Energy Resources, Energy Generation, and Energy Technology to strengthen management and create vigorous synergies of businesses in the same group across countries. The new structure also supports long-term growth and expand competitive advantage through decentralization, which allows management of each business group in each country greater flexibility in reacting to their competitive environment.

CORPORATE GOVERNANCE



With determination to achieve compliance with the Policy and Practices on Corporate Governance and the Code of Conduct, in 2020, the Company set out action plans to promote corporate culture and corporate governance attitude. The plans aim at educating and raising awareness and encouraging compliance among employees at all levels about the CG Policy.



Corporate Governance Policy

The Board of Directors of Banpu Public Company Limited announced the implementation of the Corporate Governance Policy to directors, executives, and employees 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 to the Board.

In 2020, the Company Governance (CG) division organized the event “Awake Your CG” to foster a positive attitude toward corporate governance within the organization. It aimed to raise employees’ awareness of good governance and encourage them to become active employees and join the fight against corruption.

This accentuates Banpu’s commitment to good corporate governance, ethical and transparent, as well as equitable treatment of stakeholders. After the Company was also certified as a member of the Thai Private Sector Collective Action Against Anti-Corruption (CAC), it announced the No Gifts Policy under the Anti-Corruption Policy on the Company’s website and communicated the policy to all stakeholders.



The Company monitored and evaluated the effectiveness of the implementation of the CG Policy and the Code of Conduct in the organization based on the results of the 2019 Corporate Culture and Employee Engagement Survey, using “Committed” as an indicator. The evaluation was clarified by job levels and locations and the results were satisfactory.

Communication of Corporate Governance Policy

With determination to achieve compliance with the Policy and Practices on Corporate Governance and the Code of Conduct, in 2020, the Company set out action plans to promote corporate culture and corporate governance attitude. The plans aim at educating and raising awareness and encouraging compliance among employees at all levels about the CG Policy and the Code of Conduct through a wide range of activities as follows:

1. The Company regularly organized an orientation session on the principles of good corporate governance and the Code of Conduct for new employees in every country.
2. The “Awake Your CG” was organized as a means of internal communication, featuring case studies from news about violations of the CG and Anti-Corruption Policies and their impacts. The communication channels are through news on air every Friday morning and via email to educate employees about corporate governance principles and to prevent them from violating the CG Policy and the Code of Conduct.

3. The Company published articles on corporate governance trends and directions in Thailand and ASEAN countries in the “Corporate Governance Update” column in a quarterly Banpu e-Bulletin, a digital communication channel, distributed to Banpu’s subsidiaries in all host countries. The articles published under this column aim to create an understanding as well as awareness of corporate governance among employees. The topics presented in the past year were:

- ESG: Environment, Social and Governance



- ESG in COVID Action Plan from Thailand Responsible Business Network (TRBN)
 - CG Report 2020
4. The “CG Day” activity was organized to raise awareness among employees at all levels about the importance of the Code of Conduct and commitment to integrity. In the 2020 event, the Company’s CG division held a sharing session, “Awake Your CG” by Mr. Chanit Suwanparin, SVP - Electric Vehicle of Banpu NEXT, who shared his work experience to raise employees’ awareness of corporate governance and make them realize the importance of good corporate governance and anti-corruption.



Awards and Recognition on Corporate Governance

Due to its commitment to drive business based on the creation of balanced growth for all stakeholders, Banpu received the following awards and recognition from both national and international institutions.

Member of

Dow Jones Sustainability Indices

Powered by the S&P Global CSA

Sustainability Award Gold Class 2021

S&P Global



- The Company has been recognized as a member of the Dow Jones Sustainability Indices (DJSI) for seventh consecutive year and secure its position of the Industrial Leader in Coal & Consumable Fuels industry.
- The Company was awarded “Gold Class” in the Coal and Consumable Fuels sector for the seventh consecutive year from the Robeco Sustainable Asset Management (RobecoSAM).
- The Company was listed among 240 Thai Listed Companies with Excellence CG Scoring in the 2020 Corporate Governance Report (CGR) surveyed by the Thai Institute of Directors (IOD) under the support of the Stock Exchange of Thailand (SET).

Formulation of Corporate Governance Policy

The Board of Directors formulated the Corporate Governance Policy as guidelines for the directors, executives, and employees in compliance with the SEC’s 2017 Corporate Governance Code for Listed Companies, which comprises eight 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 Responsibility 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

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 of the Board in “The Practices for the Board of Directors B.E. 2552, Banpu Public Company Limited,” which was periodically amended, and the most recent amendment was in 2017. The amendments were to improve the Board’s duties and responsibilities to better align with changing business conditions, 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.

In the past fiscal year, the Board of Directors played a pivotal role in determining the Company’s vision and mission, which are the Company’s major goals toward sustainable business. The Board also monitored business operations, and at least once a year reviewed the performance to ensure achievement of goals. The Board approved the setting of financial KPIs and targets as well as plans, regularly monitored the implementation, and oversaw the Management’s performance to ensure achievement of targets as planned. The Board also reviews the Company’s vision and mission at least once every five years to ensure that the Company’s operations are aligned with the Sustainable Development Goals as planned.

To determine the Company’s vision and mission, 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 appointed and entrusted 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 and abroad in accordance with the delegations of authority.

Apart from that, the Board of Directors focuses on business operations that substantially create benefits for shareholders whilst adhering 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 employees. Employees are clearly advised on what they should do and should refrain from, about standard practices 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 entrusted directors, executives, and all employees with a duty and a responsibility to acknowledge, understand and comply with the Company's Corporate Governance Policy and guidelines as set forth in the Code of Conduct. All employees must sign an acknowledgment of and comply with the Corporate Governance Policy and the Code of Conduct. Promotional materials and activities have been created all year round to improve awareness and understanding among employees both domestically and abroad. The Company also assigned the executives of each section to supervise their employees to help them understand and strictly comply with the Code of Conduct. In addition, employees at all levels must act as good exemplars.

In addition to the standard practices stipulated in the Code of Conduct, the executives and employees collaboratively determined the "Banpu Heart" to nurture shared values and good corporate culture for employees at all levels, 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 workforce plan. The Board will openly share opinions and discuss with the Management to reach a mutual agreement before approval.

In 2020, the Board of Directors and the Management collaboratively worked on the strategic plan and business direction for the years 2021-2025, in the Board of Director's Meeting No. 11 in October 2020 and the Board Retreat in November 2020, to respond to the rapidly changing business environment. Risk assessment and mitigation plans were conducted in preparation for future scenarios.

The Company 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 to align with the Greener & Smarter strategy. The Company has set to achieve the target portfolio of 40% coal business, 30% power business, 20% natural gas, and 10% renewable energy by 2025. Supervision of the plan implementation is also set as a regular agenda of the Board's monthly meetings. The Board of Directors has monitored the Management's implementation of the strategy. In March, the Board delegated the Management to review if the annual plan and strategic plans were successfully implemented. The Board also provided 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 13 members. One of them is an executive director; seven are non-executive directors, and five are independent directors, which accounts for 38.46% of the Board.

In 2020, the Corporate Governance and Nomination Committee reconsidered the composition of the Board regarding 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 the 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 final week of every month except for February and December, in which the Board convenes on the second week. Any additional meetings 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 any director has a conflict of interest in a matter being considered by the Board, the director must leave the meeting room.

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 to a 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.

Meeting of Non-Executive Directors

On 7 November 2020 during 10:00 A.M. – 12:00 P.M., 11 non-executive directors convened a meeting without the presence of the Management at Ballroom 3, Grand Hyatt Erawan, Bangkok, on the following agenda items:

1. Crisis Management
2. Senior Management Succession Plan
3. CEO Performance

The Board of Directors' meetings in 2020

	Name	Title	Terms of Office	2020 Meeting Attendance					2020 Annual General Meeting of Shareholders (AGM)
				The Board of Directors	Non-Executive Directors	The Audit Committee	The Corporate Governance and Nomination Committee	The Compensation Committee	
				Total 13 meetings	Total 1 meeting	Total 9 meetings	Total 4 meetings	Total 8 meetings	Total 1 meeting
1	Mr. Chanin Vongkusolkrit	Chairman/Non-Executive Director (NED)	April 2019 - AGM 2022	13/13	1/1	–	–	–	1/1
2	Mr. Teerana Bhongmakapat	Independent Director (ID)	April 2019 - AGM 2022	13/13	1/1	9/9	–	8/8	1/1
3	Mr. Rawi Corsiri	Non-Executive Director (NED)	April 2019 - AGM 2022	13/13	1/1	–	4/4	–	1/1
4	Mr. Buntoeng Vongkusolkrit	Non-Executive Director (NED)	April 2018 - AGM 2021	11/13	0/1	–	–	8/8	1/1
5	Mr. Suthad Setboonsarng	Independent Director (ID)	June 2020 - AGM 2023	13/13	1/1	9/9	–	8/8	1/1
6	Mr. Pichai Dusdeekulchai	Independent Director (ID)	June 2020 - AGM 2023	13/13	1/1	9/9	–	–	1/1
7	Mr. Teerapat Sanguankotchakorn	Independent Director (ID)	April 2019 - AGM 2022	13/13	1/1	–	–	8/8	1/1
8	Mr. Piriya Khempon ²	Independent Director (ID)	June 2020 - AGM 2023	9/9	1/1	–	2/2	–	1/1
9	Mr. Anon Sirisaengtaksin	Non-Executive Director (NED)	June 2020 - AGM 2023	13/13	1/1	–	4/4	–	1/1
10	Mr. Metee Auapinyakul	Independent Director (ID)	June 2020 - AGM 2023	13/13	1/1	–	–	–	1/1
11	Mr. Ongart Auapinyakul	Non-Executive Director (NED)	April 2018 - AGM 2021	12/13	1/1	–	–	–	1/1
12	Mr. Verajet Vongkusolkrit	Non-Executive Director (NED)	April 2018 - AGM 2021	12/13	1/1	–	4/4	–	1/1
13	Ms. Somruedee Chaimongkol	Executive Director (ED)	April 2018 - AGM 2021	13/13	–	–	–	–	1/1
14	Mr. Sudiarmo Prasertio ¹	Director (ID)	June 2020 - AGM 2023	2/3	–	–	1/2	–	–

Notes:

1. Mr. Sudiarmo Prasertio resigned from the position of Director and the member of the Corporate Governance and Nomination Committee, effective 8 April 2020.
2. Mr. Piriya Khempon was appointed as Director, effective 8 April 2020, and the member of the Corporate Governance and Nomination Committee, effective 1 May 2020, in replacement of Mr. Sudiarmo Prasertio's position and remaining term of office.
3. The 2020 Annual General Shareholders Meeting of Banpu Public Company Limited was convened on 19 June 2020.

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 ensure that any opinions of the Audit Committee on these issues have been included in its report, which is also included in Banpu's Annual Report.

The Board of Directors considered that the financial statements of the Company and its subsidiaries as of 31 December 2020 are accurate, complete, adequate, and reliable.

Sub-committees

As of 31 December 2020, the Company's Board structure consisted of the Board of Directors. The Board of Directors consists of independent directors and non-executive directors. There are five independent directors out of a total of 13 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 2018 to the date of the Annual Shareholder's Meeting in 2021.

1. The Audit Committee

The Audit Committee consists of three independent directors whose duties are to review the the Company's financial statements, the sufficiency of internal control and risk management system, financial derivative transactions, commodity hedging, and compliance with relevant rules, laws, and 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 conflicts 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 workforce plan of the Global Internal Audit Unit.

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. To recruit and nominate directors and the Chief Executive Officer, review a succession plan in order to nominate appropriate persons to fill the senior management positions (for department head level and higher) and report recommendations to the Board of Directors for approval or submission to the shareholders' meeting, on a case-by-case basis.

Apart from that, the Corporate Governance and Nomination Committee also provides suggestions for the Board of Directors about the method to evaluate the directors, 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 assessment in performance evaluation.

3. The Compensation Committee

The Compensation Committee consists of four members, namely three independent directors and one non-executive director. The Committee is responsible for providing opinions regarding compensation management to the Board of Directors for approval or submission to the shareholders' meeting, on a case-by-case basis.

Directors and Nomination of Directors and the Chief Executive Officer

The independent directors

who account for 38% of the Company's Board of Directors, are as follows:

1. Mr. Teerana Bhongmakapat
2. Mr. Suthad Setboonsarng
3. Mr. Pichai Dusdeekulchai
4. Mr. Teerapat Sanguankotchakorn
5. Mr. Piriya Khempon

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. The independent director serves a maximum of three terms or nine years. It is set in "The Practices for the Board of Directors B.E. 2552, Banpu Public Company Limited, 5th revision 2017, Clause 6 Term of Office and Retirement.

Banpu has defined the qualifications of independent directors in the stricter sense than that stipulated in the regulation of the SEC and the SET Re: Proportion of Shareholding, which determines the qualifications of "Independent Directors," as follows:

1. holding shares not exceeding 0.5% (legally not exceeding 1%) 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 a 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 who has relationship by means of descent or legal registration under the status of father, mother, spouse, brothers and sisters, and children, including the spouse of daughters and sons of executive, major shareholder, controlling person, or person to be nominated as an executive or controlling person of Banpu or its subsidiary companies;
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.

The term “business relationship” under the first paragraph includes any normal business transaction, rental or lease of immovable property, the 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 above THB 20 million, 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;

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 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 THB 2 million 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 a salary or holding shares exceeding 1% 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., 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. 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 providing which cause such person being underqualified;
- B. The reason and the necessity to insist the appointment of such person as the independent director;
- C. The opinion of Banpu's Board of Directors of the applicant to propose such person to be the independent director.

For the purpose of 5. and 6. of the first paragraph, the term "partner" shall mean the person assigned by an audit firm or a provider of professional service to be the signatory in 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 for the Company, Banpu requires directors to serve not more than five boards of listed firms. (The Practices for the Board of Directors of Banpu Public Company Limited's Section 5.1 Clause (5) General Qualifications of Directors, effective from 19 December 2014 onward)

Voting Procedure in the Board of Directors' Meeting

The Company set the procedure of the Board of Directors' meeting and 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" (The Practices for the Board of Directors of Banpu Public Company Limited, on Board of Directors, section 8.5, effective from 19 December 2014 onward).

Performance Evaluation of the Board of Directors

The Company requires that the Board of Directors, sub-committees, and individual directors be evaluated for their performance, with criteria, procedures, and evaluation results disclosed in the annual report and the report of the Corporate Governance and Nomination Committee. The Company also requires that Board self-evaluation be conducted at least once a year to allow all board members to consider the Board's performance and problems they had encountered in the past year, which will improve the Board's efficiency according to the principles of good corporate governance. The Secretary of the Corporate Governance and Nomination Committee will provide each director forms for evaluating individual board directors and the whole Board's performance. The completed evaluation forms will be returned to the Secretary, and the evaluation results will be concluded and reported to the Board of Directors for consideration to achieve the above objective. The overall evaluation results are shown below:

Performance Evaluation of the Board 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 consists of 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 Score	Evaluation Results
Whole Board	4.74	Excellent
Individual Directors	4.56	Excellent
Performance Evaluation of Sub-committees		
The Audit Committee	4.45	Very Good
The Corporate Governance and Nomination Committee	4.95	Excellent
The Compensation Committee	4.61	Excellent

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 in accordance with the Company's business strategy and in compliance with the SET's rules and regulations. After the recruitment process, the Corporate Governance and Nomination Committee will nominate the candidate to be approved by the Board of Directors and proposes to be elected at 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 considers candidates from the director pool and allows each member to nominate the candidates. The Committee determined and disclosed the Board Diversity Policy, then announce via the Company's website to invite the minority shareholders to nominate 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 board skills mix contributive for board composition and collaboration 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% 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 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 critical positions in the future.

Corporate Governance of Subsidiaries and Affiliates

The Company has managed its subsidiaries and devised business procedures to ensure operational effectiveness and proficiency, 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 operation 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 Board of Directors has a governance mechanism to oversee subsidiaries and safeguard the Company's investment. The Board is responsible for the consideration of suitable CEO and top executives to serve as directors

of the Company's subsidiaries to ensure that the management is aligned with the Company's policies and all transactions comply with securities and exchange laws and regulations as well as the SET's announcements.

4. 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 Unit to work independently by submitting an internal audit report directly to the Audit Committee. The Unit 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 has the responsibility for appointing 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), 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 cost more than THB 1,500 million and exceed the approved budget by 15%, must be approved by the Board of Directors.

Anti-Corruption

The Company has always upheld the principles of good corporate governance in its management, focusing on 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 Unit to manage risks from operations that may infringe rules and regulations and to oversee legal compliance 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 Unit, who will compile a report semi-annually. All business units must review updates about rules and regulations to be fully responsive to changes.

The Enterprise Risk Management Department is responsible for continuous risk assessment in all businesses, strategic plans, and annual action plans and preparation for preventive measures and solutions. The Department quarterly reviews the risks and reports the results to the Board of Directors at least twice a year.

The Company expressed its intention to combat corruption as part of Thai Private Sector Collective Action Against Anti-Corruption (CAC) in 2010. In 2015, the Company became a certified CAC member and was recertified in 2018.

In 2020, the Company assessed corruption risks and reported the results to the Risk Management Committee. It continuously communicated to employees about the Anti-Corruption Policy and practices and other related policies, such as the Corporate Governance Policy and the Code of Conduct, the Standard Practice Manual for Accepting and Offering of Gifts, Hospitality, or Other Similar Forms of Reward. Employees can access the policies via internal communication channels such as email, Friday Morning News Talk during the "Anti-Corruption News" session, and the Company's internal website. Last year, the Company declared the "No Gifts Policy" on its website and communicated to shareholders the practices according to the Anti-Corruption Policy and the Standard Practice Manual for Accepting and Offering of Gifts, Hospitality, or Other Similar Forms of Reward.

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, Reporting of Interests of Directors, Executives and Related Persons, members of the Board of Directors are required to report the securities held 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 securities, they are required to report such transactions to the next Board meeting.

Details on shareholding of the Board of Directors and Management as of 31 December 2020 (For further details in Shareholding of the Board of Directors and Management, see the table on page 167)

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 competent executives to fill critical positions in the future. The CEO is invited to report to the succession plan to the Corporate Governance and Nomination Committee once a year and report to the Board.

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 2020, directors attended seminars and training courses, as shown in the following table.

The Board of Directors' seminars and training courses in 2020

Name	Training Course/ Seminar	Institution/ Speaker	Date of Training/ Seminar
Mr. Chanin Vongkusolkit (Chairman)	◦ Knowledge Sharing: Update the Trends for Energy Generation Markets and Investment Opportunity	Banpu Public Company Limited	25 September 2020
	◦ Knowledge Sharing: Board Effectiveness in Accordance with New CG Code	Mr. Kulvech Janvatanavit Thai Institute of Directors (IOD)	5 October 2020
	◦ Knowledge Sharing: Global Megatrends	Dr. Somprawin Manprasert	5 October 2020
Mr. Teerana Bhongmakapat (Independent Director, Chairman of the Audit Committee and Member of the Compensation Committee)	◦ IT Security Awareness for Top Management	ACIS Professional Center Co., Ltd.	30 November 2020
	◦ Director's Briefing "Corporate Strategy Beyond the Crisis, a Chairman/ Board Perspective"	Thai Institute of Directors (IOD) and Bain & Company	17 December 2020
Mr. Rawi Corsiri (Director, Chairman of the Governance and Nomination Committee)	◦ Knowledge Sharing: Update the Trends for Energy Generation Markets and Investment Opportunity	Banpu Public Company Limited	25 September 2020
	◦ Knowledge Sharing: Board Effectiveness in Accordance with New CG Code	Mr. Kulvech Janvatanavit Thai Institute of Directors (IOD)	5 October 2020
	◦ Knowledge Sharing: Global Megatrends	Dr. Somprawin Manprasert	5 October 2020
Mr. Buntoeng Vongkusolkit (Director and Chairman of the Compensation Committee)	◦ Executive Seminar 2020 "Building Profitable and Sustainable Growth"	Mitr Phol Sugar Corporation. Ltd	16 - 17 October 2020
Mr. Suthad Setboonsarng (Independent Director, Member of the Audit Committee and Member of the Compensation Committee)	◦ The 58 th Philippine Economic Society (PES) Annual Meeting and Conference "Recent Rice Sector Reforms in Southeast Asia"	Philippines Economic Society (PES)	9 November 2020
	◦ The 3 rd East Asia Energy Forum "Role of Carbon Capture Utilization and Storage (CCUS)/ Carbon Recycling in ASEAN/ East Asia"	The Economic Research Institute for ASEAN and East Asia (ERIA), The Energy Research Institute Network (ERIN) and The Ministry of Industry-Vietnam	17 November 2020

Name	Training Course/ Seminar	Institution/ Speaker	Date of Training/ Seminar
Mr. Pichai Dusdeekulchai (Independent Director and Member of the Audit Committee)	<ul style="list-style-type: none"> Director Briefing "The Roles of Directors during COVID-19: Financial Reporting, Leadership and Beyond" 	Thai Institute of Directors (IOD) and KPMG Thailand	12 June 2020
Mr. Teerapat Sanguankotchakorn (Independent Director and Member of the Compensation Committee)	<ul style="list-style-type: none"> Director Briefing "The Roles of Directors during COVID-19: Financial Reporting, Leadership and Beyond" 	Thai Institute of Directors (IOD)	12 June 2020
	<ul style="list-style-type: none"> Board War Room "Personalized Marketing vs Data Privacy: Engaging your Customers While Protecting their Identities" 	Thai Institute of Directors (IOD)	10 July 2020
	<ul style="list-style-type: none"> Director Briefing "Finding Creative Solutions to Business Dispute during Pandemic Time" 	Thai Institute of Directors (IOD) and Thailand Arbitration Center	14 July 2020
Mr. Piriya Khempon (Independent Director and Member of the Governance and Nomination Committee)	<ul style="list-style-type: none"> Director Certification Program (DCP#298/2020) 	Thai Institute of Directors (IOD)	September - November 2020
Mr. Anon Sirisaengtaksin (Director and Member of the Governance and Nomination Committee)	<ul style="list-style-type: none"> 2020 PTIT Special Lecture "Thailand's Density: Water Crisis and Development Philosophy" 	Petroleum Institute of Thailand	7 August 2020
Mr. Metee Auapinyakul (Director)	<ul style="list-style-type: none"> Knowledge Sharing: Update the Trends for Energy Generation Markets and Investment Opportunity 	Banpu Public Company Limited	25 September 2020
	<ul style="list-style-type: none"> Knowledge Sharing: Board Effectiveness in Accordance with New CG Code 	Mr. Kulvech Janvatanavit Thai Institute of Directors (IOD)	5 October 2020
	<ul style="list-style-type: none"> Knowledge Sharing: Global Megatrends 	Dr. Somprawin Manprasert	5 October 2020
Mr. Ongart Auapinyakul (Director)	<ul style="list-style-type: none"> Top Executive Program in Creative & Amazing Thai Services (TOPCATS 2) 	University of the Thai Chamber of Commerce	February - November 2020

Name	Training Course/ Seminar	Institution/ Speaker	Date of Training/ Seminar
Mr. Verajet Vongkusolkit (Director and Member of the Governance and Nomination Committee)	◦ Boards That Make a Difference (BMD#10/2020)	Thai Institute of Directors (IOD) Mitr Phol Sugar Corporation., Ltd.	10 - 11 August 2020
	◦ Executive Seminar 2020 "Building Profitable and Sustainable Growth"		16 - 17 October 2020
Ms. Somruedee Chaimongkol (Director and Chief Executive Officer)	◦ Knowledge Sharing: Update the Trends for Energy Generation Markets and Investment Opportunity	Banpu Public Company Limited	25 September 2020
	◦ Knowledge Sharing: Board Effectiveness in Accordance with New CG Code	Mr. Kulvech Janvatanavit Thai Institute of Directors (IOD)	5 October 2020
	◦ Knowledge Sharing: Global Megatrends	Dr. Somprawin Manprasert	5 October 2020

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 to enhance the Company's competitiveness and create added values for all stakeholders through a 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 the sustainability performance as well as determines and reviews policies that support sustainable development.

The Company requires that sustainability indicators are part of short-term and long-term performance goals for both management and employee. 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 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 employees 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 to improve creative thinking skills by including 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 quickly and effectively respond to future demands.

Roles of Stakeholders

Banpu strives to maintain fairness for all stakeholders and set forth a policy toward stakeholders in the Corporate Governance Policy and the Code of Conduct as guidelines for the directors, executives, and employees to follow based on fair and equitable mutual benefit. Important guidelines pertain to conflicts of interest, the responsibility to shareholders, and policies on the treatment of employees, customers, trading partners, creditors, competitors, and society in general. It is considered the duty and responsibility that directors, executives, and employees shall acknowledge, understand, and strictly comply with the guidelines in order to ensure that all stakeholders are well treated and their rights protected.

In addition, Banpu has created an online channel on the Company's website under the Corporate Governance section to receive complaints and grievances regarding corporate governance and business ethics, which reaches out to and covers all groups of stakeholders. Information can be sent directly to the Chairman of the Corporate Governance

and Nomination Committee, with the contact address; GNCchairman@banpu.co.th, and/or the Secretary of the Corporate Governance and Nomination Committee, with the contact address; GNCSecretariat@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 2015, Banpu also announced and implemented the Whistleblower Policy to protect those filing grievances and to foster a culture of transparency. The investigation into the grievances is carried out as follows:

1. In case there is sufficient evidence to support the allegation of misconduct, a full investigation into the case will be conducted. The investigation pattern may vary depending on circumstances. The investigation will be carried out under strict terms of confidentiality, and the whistleblower may be contacted for further information.
2. The investigation team will inform the whistleblowers of investigation results and outcomes through appropriate communication channels.
3. Senior management will decide which action to take, e.g., disciplinary punishment or any other appropriate measures.
4. The Company affirms that whistleblowers who report in good faith of any wrongdoing or suspected wrongdoing against the law, rules, and regulations, and the Code of Conduct will not be affected.

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. It also requires registration of gifts in the database system for which the Board members, executives, employees, 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 the Code of Conduct as follows:

No. 3.4 Giving and Receiving Bribery

1. Executives and employees are prohibited from demanding or receiving any benefits from trading parties, contractors, suppliers, advisors, and those with whom the Company is conducting business.
2. Executives and employees 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 employees 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 employees 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 toward 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 based on three principles:

1. Equitability
2. Performance Based
3. Competency Based

To cope with changing business and global economy, the Company takes responsibility in enable 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.”

Banpu is committed to aligning human resources management with the Company’s vision to timely respond to business changes and ready to drive the Company to become an International Versatile Energy Provider. Hence, the Company has always prioritized a strong and potential workforce as well as agile working to ensure smooth collaboration among employees. The Company promotes reskilling and upskilling for employees while supporting them to work and grow cross-sectionally in all countries. In 2020, Banpu developed a “Banpu People Value Proposition” as a principle to improve human resource management efficiency.

The Company has the Remuneration Policy to provide bonuses and promotions based on the Company’s performance both in short and long terms. It is committed to providing employees with fair compensation in the forms of salary, welfare, and other benefits, e.g., health insurance, provident fund, and Flexi Benefit Welfare. Human resources management is fair and inclusively provides opportunities for learning and development to the full capacity of each employee. The Company 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 to maintain transparency and drive the workforce toward steady and sustainable growth.

Customers

Banpu strives to seek methods that efficiently and effectively respond to its customers' needs. 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 the delivery of quality products and services that meet customer expectations at a fair price, provision of accurate and enough information in a timely fashion, and compliance with conditions given to customers. The Company has established a grievance process to allow customers to file complaints about quality, volume, and the safety of products and services. It also advises on how to effectively use its products 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 maximum 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. Practices are as follows:

- (1) The Company shall not demand, receive or pay any improper benefits to its trading partners and/or creditors.
- (2) Should there be demand for or receipt of or payment of any improper benefits, the information shall be disclosed to the trading partners and/or creditors, and the Company shall collaborate with the involved parties to resolve the problem in a fair and timely manner.

- (3) The Company shall strictly comply with all the terms and conditions agreed upon in a transaction. In the event that any particular condition cannot be met, the Company will inform any creditor(s) concerned beforehand and seek a mutually acceptable solution.

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 the 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 2020, Banpu had no disputes with competitors.

Community and Society

Banpu has the policy to conduct businesses that benefit the economy and society while maintaining a balance between business growth and community, social, and environmental development. The Company is also committed to being a good corporate 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 sector, communities, or non-governmental organizations.

Additionally, the Sustainability Policy has been implemented to benchmark against the global standard for such activities as climate change reporting (ISO 14001) and the formulation of best practice guidelines to effectively achieve safety, health, and environmental standards. Also included in the guidelines is the management of risks 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 four decades of its business operation, Banpu has always allocated part of its earnings to CSR projects 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
Fax: +66 2207 0696-8
Website: www.banpu.com

Company Secretary:

Telephone: +66 2694 6859
Email: bodsec@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 considers the appropriateness of the risk management system, risk likelihood, and level of impacts. The Board has set clear measures for risk management and ensures that there are people responsible for the risks. Besides, the Board has determined measures for reporting, monitoring, and evaluating risk management. The Risk Management Committee is set up at the management level to regularly submit a 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 with relevant laws, rules, and regulations. The Board has also established sufficient and effective checks and balances mechanism to protect shareholders' equities and Banpu's assets. Moreover, the Board has determined the authorization levels and responsibilities of the executives and employees under the 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 the 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 employees from using their positions for personal gains. As stipulated in the Code of Conduct, directors, executives, and employees 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 employees 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 employees 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 employees involved in a special project of which 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 share prices, the executive or employee is to sign a confidentiality agreement until the information is disclosed to the SET and the SEC.

Banpu announced the Market Sensitive Information Policy and practices on the management of confidential information that potentially affects the stock exchange in 2017. It is the duty of directors, executives, employees, 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 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 2020, Banpu organized the following activities to disclose information to international investors, institutional investors, small investors, securities analysts, and the press:

No.	Information Disclosure and Presentation	Time(s)
1.	International Road Show (via virtual meeting)	14
2.	Local Road Show (via virtual meeting)	5
3.	Quarterly and Annual Analyst Meeting	4
4.	Opportunity Day for listed companies to release quarterly performance to investors	4
5.	Participation in “SET Digital Roadshow” to release quarterly performance to investors	1
6.	Company visits by local and international investors	4
7.	Information provision to investors via conference call	5
8.	Interviews with executive officers	9
9.	Press conference on the Company's performance and key progress	1
10.	Press release on the Company's performance and business strategies	14
11.	Activities for the press and public relations on Corporate Social Responsibility (CSR)	21
12.	Site visits and information provided for shareholders and analysts	0
13.	Exhibitions	0

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.

Policy on the Uses of Internal Information

Banpu places great importance on information disclosure and transparency and has formulated a policy on information disclosure, transparency in financial statements, and corresponding policy implementation in Banpu'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 committed to 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 practices 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 employees to strictly comply with the policy, 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 the Practices for the Board of Directors 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 shall refrain from using inside information in their possession for dealing in the shares of the Company or giving inside information 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 employee has left the Company.

Additionally, the Company stipulated in the Corporate Governance Policy that directors, executives, and employees 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 employees 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. Besides, 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 employees' information access level according to their individual responsibility. In the case where an executive or employee 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 employee must sign a Confidentiality Agreement with the Company. The Agreement shall remain in effect until the information is disclosed to the SEC and the SET.

The internal information usage control is prescribed in the Company's rules under the "Disciplinary Action" section. The rule, which applies to all levels of employees, 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.

In 2020, there were no reports of insider trading violations or non-compliance with the SET's and the SEC's rules and regulations on the securities exchange.

Apart from that, the Board of Directors and executives had disclosed their ownership of the Company's securities on the date they were appointed and reported any changes in securities, including those of their spouses and minor children as well as connected persons, to the Board of Directors for acknowledgment.

Principle 8

Ensure Engagement and Communication with Shareholders

Shareholder's Rights

The Board of Directors stresses the importance of rights and equality between shareholders and institutional investors. 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 a format conducive for decision making. Shareholders are also entitled to attend a meeting, cast their votes at shareholders' meetings to deliberate over 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 complete, clear, sufficient, and timely information. 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. Moreover, shareholders are allowed to equally express opinions, seek explanations, or pose questions.

The 2020 Annual General Meeting of Shareholders (AGM) was convened on 19 June 2020, at 1:00 P.M. at the Meeting Hall of Banpu's Head Office at 1550, Thanapoom Tower, New Petchburi Road, Makkasan, Ratchathewi, Bangkok 10400, with full attendance of 13 directors. 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 2020 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 2019. The procedures and methods for considering proposals were clearly stated on the Company's website: www.banpu.com/AGM_EGM/. In the 2020 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 the 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 was attended by 13 directors, namely 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 attended the meeting.

The Chairman of the meeting allowed every shareholder to examine the Company's operations and to present questions in each of the agenda items. The Chairman also encouraged shareholders to voice their opinions and make inquiries about the Company's operations. In addition, the Board of Directors completed the minutes of the meeting and released 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 2020 Annual General Meeting of Shareholders (AGM) was convened on 19 June 2020 at 1.00 P.M. at the Meeting Hall of Banpu's Head Office at 1550, Thanapoom Tower, New Petchburi Road, Makkasan, Ratchathewi, Bangkok 10400. The 2020 AGM was

attended by all 13 directors, 70 shareholders, and 440 proxies, bringing the total to 510 persons, representing 1,913,890,343 shares. This accounted for 37.7152% of all voting shares.

Site Visits and Information Provided to Shareholders

Banpu Public Company Limited (Company) previously planned to organize a site visit to the BLCP power plant (BLCP) in Map Ta Phut Industrial Estate in Rayong Province on 19 May 2020. However, the COVID-19 pandemic prompted the BLCP power plant to postpone visits indefinitely. For the visitor's safety, the Company cancelled the 2020 site visit to the BLCP power plant.

Compliance with Other Corporate Governance Principles

Banpu has adhered to the SET Principles of 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 Chairman of the Sub-committee shall be an independent director.

The Company's practice: At present, the Chairman of the Corporate Governance and Nomination Committee and the Chairman of the Compensation Committee are non-executive directors. However, the Board of Directors clearly delegated and defined the roles and duties of the Sub-committees in the Charters.

4. 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.

5. The Board should set a clear office term for board members in the Corporate Governance Policy:

The Company's practice: Banpu determines that independent directors shall serve term of office for nine years or no more than three consecutive term. (Banpu Public Company Limited's Code of Conduct Article 6.2 Section 6. Term of Office and Retirement*) Furthermore, Banpu set the directors' retirement age at years 72 old in the Corporate Governance Policy (Section 4.7 Directors' Retirement).

*Effective from 19 December 2014

6. The Board should consider the qualification of the person to be appointed as an "Independent Director," so the Company's independent directors become truly independent and fit to

the characteristics of the Company. The minimum qualification of independent directors should comply with recommendations of SEC and SET. Apart from that, the Board should restrict that independent directors' office term is not over nine consecutive years since the date of directorship appointment for the first time. If the Board will re-appoint an independent director for another term, the Board should consider about reasons why it is necessary.

The Company's practice: The Board uses a stricter definition of independent directors than the minimum requirement of the Securities Exchange Commission and the Stock Exchange of Thailand about the proportion of the Company's shares held by independent directors. Besides, the Company determines that independent directors shall serve term of office for nine years or no more than three consecutive terms. (Banpu Public Company Limited's Code of Conduct Article 6.2 Section 6. Term of Office and Retirement*).

*Effective from 19 December 2014

7. The Board of Directors considered and adopted the SEC's 2017 Corporate Governance

Code for Listed Companies as a guideline for revising Banpu's Corporate Governance Policy, the Code of Conduct, Practices of the Board of Directors, and Charters of Sub-committees in 2018.

Report of the Audit Committee

The Audit Committee of Banpu Public Company Limited consists of three independent directors with expertise and experience in related fields including Accounting, Finance, Business Management, and Economics. The Audit Committee is chaired by Mr. Teerana Bhongmakapat with Mr. Suthad Setboonsarng, and Mr. Pichai Dusdeekulchai, as committee members while

Ms. Wiyada Wiboonsirichai, Head of Global Internal Audit and Compliance, serves as the Secretary of the Audit Committee.

The Audit Committee performs its duties independently within the scope and responsibilities entrusted by the Board of Directors and as stipulated in the Audit Committee Charter, which has been reviewed to align with regulations of the Securities and Exchange Commission, the Stock Exchange of Thailand, best practices, and the Company's good corporate governance principles. The Audit Committee focuses particularly on overseeing the Company's operations to ensure strict legal and regulatory compliance both in Thailand and abroad as well as adherence to the Company's Anti-corruption Policy. The Committee also ensures that the Company has in place an efficient and effective risk management system, an appropriate and adequate internal control system, as well as an effective internal audit to achieve its goals and sustain its businesses.

In 2020, the Audit Committee convened nine times at which a quorum was established. During the intense COVID-19 period, the Audit Committee held a meeting through online platform with the management, the Global International Audit and Compliance Department, and external auditors on relevant agenda items. The Audit Committee also held a meeting with the external auditors without presence of the management. The results of the Audit Committee meetings were reported to the Board of Directors on a quarterly basis. The Audit Committee's main activities can be summarized as follows:

1. Review of Financial Information

The Audit Committee reviewed key information in the quarterly financial reports, and the 2020 financial statements of Banpu, including related party transactions, the transactions with a possible conflict of interest, and the appropriateness of accounting policies. Related management and external auditors were invited to

meetings to discuss the agenda on financial statements review, to provide explanation and answer inquiries about the accuracy and comprehensiveness of the financial statements, important accounting transaction adjustments, the adequacy of information disclosure in the financial report and the external auditor's observations. Based on the auditors' unqualified opinion, the Audit Committee agreed that the financial statement reporting was prepared in accordance with applicable laws and Thai Financial Reporting Standards (TFRS), which is aligned with International Financial Reporting Standards (IFRS). The Company's financial statements are accurate and reliable, while the information disclosure 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 efficiency and adequacy of the Company's internal control system in accordance with the standards of the Committee of Sponsoring Organizations of the Treadway Commission (COSO). The COSO standards encompass corporate internal control, risk assessment, operations control, information and communication system, and monitoring system. The review was based on the internal audit report, results of corrective actions according to audit recommendations, external auditor's observations, as well as the Internal Control Sufficiency Evaluation Form developed by Thailand's Securities and Exchange Commission (SEC). According to the review, no significant issues or shortcomings were detected. The Audit Committee is confident that Banpu has adequate and appropriate internal control for effective management and operations.

The Audit Committee supervised the Global Internal Audit Unit by reviewing and approving the annual audit plan, budget, manpower, and performance of the Department and its Department

Head. At present, Banpu has diversified into many businesses with growing importance and complex environments such as the U.S. shale industry. The Audit Committee has thus exercised greater prudence in corporate governance by stressing the importance of preventive audit, focusing on risk-based audit, and supporting and promoting the improvement of internal audit quality according to international standards. The Audit Committee also emphasized internal audit staff development and application of technology to improve efficiency of audit and monitoring. It also provided recommendations on internal audit that correspond to the strategic plan to create added value and protect stakeholders' interests.

Due to the COVID-19 pandemic worldwide in 2020, the Global Internal Audit Unit adopted 'remote audit' based on data analytics and digital technologies to gain more insight and analyze anomalies or red flags. This helped improve the effectiveness and efficiency of the internal controls in major businesses, enhance operational efficiency, reduce costs, and enhance preparedness for future expansion and investment. The internal control quality and effectiveness were also maintained to support the Department's advancement into "Smart Audit & Continuous Monitoring."

3. Review of Compliance

The Audit Committee reviewed Banpu Group's compliance with laws and regulations relevant to its businesses. The Corporate Compliance Department is responsible for promoting and monitoring compliance performance to ensure full compliance with applicable laws and regulations and for reporting the results to the Audit Committee. To facilitate risk management and compliance, the Company has improved its group compliance documents which is currently enforced in all countries based on the Three Lines Model, provided consultancy to business units on

legal compliance, and improved its activity-based compliance process to cover both high-level and end-to-end operations.

In 2020, Banpu started using C-RiM (Compliance Risk Management) application in its risk management and law compliance monitoring process. The application's real-time risk monitoring and reporting capabilities can support a wide range of reporting needs of diverse users. The Company also developed the Laws in Hand application to monitor legal changes and address them in a timely manner to ensure full compliance. Moreover, Banpu has prepared for compliance with Thailand's Personal Data Protection Act BE 2562 (2019) (PDPA) and applicable data protection laws and regulations in other countries by formulating policies and practices, setting up a working team, appointing a data protection officer, and developing a data inventory at every business unit. The Company has also communicated the new regulations to employees to ensure that they understand and strictly comply with them. Besides, the Company reports risk management situations and internal audit results covering significant compliance risk to the Audit Committee on a regular basis.

4. Good Corporate Governance

The Audit Committee reviewed Board members', management's, and employees' compliance with the Code of Conduct and the effectiveness of corporate governance principles followed by them. The Committee has the opinion that the Board members and the management are role model for corporate governance. 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 interest in accordance with the SEC's and SET's

rules and regulations. The Company is committed to ethical and transparent business operations under good corporate governance principles and the Code of Conduct. It has promoted strict compliance with the Anti-corruption Policy and the Corporate Fraud Management Policy. The Company has established whistleblower channels for receiving complaints or reports of corruption and entrusted the Investigation Committee to investigate corruption or suspicious acts of corruption through a procedure that is fair to all parties.

5. Oversight of Risk Management

Based on the Risk Management Department's quarterly report, the Audit Committee reviews the efficiency and effectiveness of the risk management process, closely monitors key risks that may impact the Company's business operations, ensures that risk management measures remain at an acceptable level, as well as catches up with the trends of new businesses in which the Company has invested. The risks facing the Company may arise from changing business situations and environments, including strategic, operational, financial, compliance, information technology, corruption, and reputation risks. The Audit Committee monitors the management of critical risks, mitigation approaches, and situations that may affect the businesses. The approach to risk management focuses on systematic management that timely responds to rapidly changing business situations and trends. In 2020, the Company prioritized emerging global risks such as cybersecurity and ESG (Environment, Social and Governance), on which it has closely monitored and prepared response plans.

6. Appointment of Auditors and Audit Fees for 2021

The Audit Committee considered the selection of auditors based on Banpu's evaluation criteria, including their experience, knowledge, expertise, independence, timeliness, and reasonable audit fees. The Committee also reviewed the auditors' qualifications to ensure that they fully 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 from PricewaterhouseCoopers ABAS Ltd. (PwC) were nominated:

1. Ms. Rodjanart Banyatananusard, CPA, License No. 8435; and/or
2. Ms. Amornrat Permpoonwattanasuk, CPA, License No. 4599; and/or
3. Mr. Pongthavee Ratanakoses, CPA, License No. 7795; and/or
4. Mr. Boonrueng Lerdwiseswit, CPA License No. 6552.

One of the individuals on this list shall be the auditor and express opinions on behalf of PricewaterhouseCoopers ABAS Ltd. (PwC) on Banpu's financial statements. In case none of these CPA auditors can perform the duties, PricewaterhouseCoopers ABAS Ltd. (PwC) is obligated to find a substitute. The total audit fee for Banpu was proposed at THB 2,580,900.

In summary, in 2020, the Audit Committee performed its duties and responsibilities set forth in the Audit Committee Charter with accuracy, independence, and prudence for equitable interest of the stakeholders. The Audit Committee maintained its opinion that 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, which safeguards and supports long-term business value creation. Banpu's financial report is accurate and reliable with sufficient disclosure of information and in conformity with generally accepted accounting principles.

19 February 2021

On behalf of the Audit Committee,



(Mr. Teerana Bhongmakapat)
Chairman of the Audit Committee
Banpu Public Company Limited

Report of the Corporate Governance and Nomination Committee

The Corporate Governance and Nomination Committee of Banpu Public Company Limited consists of Mr. Rawi Corsiri, the Chairman of the Committee, with Mr. Sudiarso Prasatio*, Mr. Anon Sirisaengtaksin, Mr. Verajet Vongkusolkrit, and Mr. Piriya Khempon** as directors. The Committee independently performs duties to the full extent as entrusted by the Board of Directors, in compliance with principles and charter of the Corporate Governance and Nomination Committee and the SEC's Corporate Governance Code 2017.

*Mr. Sudiarso Prasatio resigned from the position of Director and the member of the Corporate Governance and Nomination Committee, effective from 8 April 2020.

**Mr. Piriya Khempon was appointed as Director, effective from 8 April 2020, and as a member of the Corporate Governance and Nomination Committee, effective from 1 May 2020, in replacement of Mr. Sudiarso Prasatio's position and the remaining term of office.

In 2020, the Corporate Governance and Nomination Committee convened four meetings with full attendance. The Corporate Governance and Nomination Committee summarized its performance in two main points as follows:

The Corporate Governance Mission

1. Monitoring of Compliance with the Corporate Governance Policy and the Code of Conduct

In 2020, the Corporate Governance and Nomination Committee monitored the implementation of Banpu's Corporate Governance Policy and the Code of Conduct by using the survey on employee attitude toward the corporate culture in 2020, using "Committed" as an indicator. The survey results, which are classified by work level and work location, were satisfactory.

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 the corporate culture and positive attitude toward corporate governance through a wide range of activities in 2020, 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 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 2020, there were nine complaints from stakeholders that were addressed and resolved.

4. Performance Evaluation of the Board and Directors

The Corporate Governance and Nomination Committee reported the annual evaluation results to the Board of Directors' meeting. The Board of Directors' overall performance was satisfactory, with a score of 4.74 out of 5. Specifically, each topic received a score in the "good to excellent" range (between 4.5 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 a “very good” score range with an average score of 4.67 out of 5. Each sub-committee submitted its annual self-evaluation report to the Board of Directors as part of its 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 4.56 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 Retired by Rotation in 2020

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 2020 Annual General Meeting of Shareholders for consideration and approval. In the 2020 AGM, four directors re-elected by the shareholders were as follows:

1. Mr. Metee Auapinyakul
2. Mr. Pichai Dusdeekulchai
3. Mr. Suthad Setboonsarng
4. Mr. Anon Sirisaengtaksin

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 2020 Annual General Meeting of Shareholders for consideration and approval of re-election according to the nomination process, which has been completed.

Succession Plan for Senior Executive Officers

In 2020, the Corporate Governance and Nomination Committee received a progress report on the succession plan once and reported the succession plan to the Board of Directors once.



Mr. Rawi Corsiri
Chairman of the Corporate Governance
and Nomination
Banpu Public Company Limited

Report of the Compensation Committee

The Compensation Committee of Banpu Public Company Limited comprises of four members: three are independent directors, and one is a non-executive director, who were appointed by the Board of Directors according to knowledge, competence, skills, and experience in Thailand and abroad.

The Compensation Committee consists of Mr. Buntoeng Vongkusolkrit, the Chairman of the Compensation Committee, and other three members, Dr. Teerana Bhongmakapat, Dr. Suthad Setboonsarng, and Dr. Teerapat Sanguankotchakorn.

The Compensation Committee Charter B.E. 2552 prescribed duties and responsibilities of the Compensation Committee as follows:

- To provide recommendations on remuneration management to the Board of Directors regarding the remuneration of the Board of Directors, Sub-committees appointed by the Board, and any other persons attending the Board of Directors meetings or Sub-committee meetings.
- To consider and recommend remuneration and other benefits, including annual remuneration, by taking duties and responsibilities of the Chief Executive Officer into consideration, and deliberate the overall budget for an annual salary increase, bonuses as well as other benefits for employees.
- To review and recommend the amendment of the scope of work, duties, and responsibilities of the Compensation Committee in response to changing circumstances and determine appropriate structure and criteria for consideration and deliberation on remuneration.
- To submit a performance report to the Board of Directors at least once a year.

In 2020, the Compensation Committee convened eight meetings, comprising five regular meetings, two adjourned meetings, and one special meeting, in which the Committee considered agenda prepared by the Secretary of the Committee. The Committee also provided recommendations to the Board of Directors for consideration and approval. The meetings can be summarized as follows.

1. Remuneration and Other Benefits

In 2020, the Compensation Committee considered and provided recommendations on remuneration of the Board of Directors, Sub-committees, Chief Executive Officer, and Banpu group's employees in all countries based on their duties, responsibilities, and performances in the previous year, the Company's operating results, key economic information, and remuneration surveys of leading companies in Thailand and abroad. The Secretary of the Committee presented the relevant information to support the Compensation Committee's deliberations on remuneration.

The Compensation Committee considered and provided recommendations on remuneration in a thorough, careful, and transparent manner to keep employees motivated with attractive incentives so that they perform duties at their full capacity to create benefits and added value for the Company and shareholders over the following years.

The economic downturn in 2020 due to several factors directly impacted the Company's current and future performances. Taking its full responsibility to shareholders and stakeholders, the Compensation Committee proposed pay cuts for the Board of Directors and the Sub-committees, namely the Audit Committee, the Compensation Committee, and the Corporate Governance and Nomination Committee. "The retainer and attendance fees are reduced by 25%" of the total remuneration in the previous year, starting from the date after the 2020 Annual General Meeting of Shareholders.

2. Business Directions of the Company

In 2020, the Compensation Committee participated in determining the Company's business operations to achieve fruitful results. The Committee considered and provided suggestions on the Chief Executive Officer's key performance indicators, which appropriately reflected the Company's short- and long-term operational directions and could be put into practice for the benefits of internal and external stakeholders. Apart from that, the Committee considered the Chief Executive Officer's performance in the first half and second half of 2020 and provided recommendations on the matter to the Board of Directors.

3. Collaboration with Employees and the Management

In performing its duties, the Compensation Committee regularly invited executives to attend the meetings on related agenda to provide information and detailed explanations to support its deliberations. The practice not only contributed to accurate, precise, and timely

decisions but also built good rapport between the Compensation Committee and the Company's management, enabling smooth and aligned operations of both parties.

In addition, the Compensation Committee performed a self-evaluation of its performance over the past year regarding its qualifications, duties and responsibilities, meetings, and reporting. The evaluation results were reported to the Board of Directors together with evaluation results of other Sub-Committees.

In conclusion, the Compensation Committee, in 2020, fully performed its duties and responsibilities as prescribed in the Compensation Committee Charter B.E. 2552 of Banpu Public Company Limited and as entrusted by the Board of Directors. The Committee also provided valuable opinions and recommendations to the executives, the Board of Directors, and stakeholders on a regular basis.



Mr. Buntoeng Vongkusolkrit
Chairman of the Compensation Committee
Banpu Public Company Limited

CORPORATE SOCIAL RESPONSIBILITY (CSR)

CSR After Process and Environmental Programs and Activities in 2020

Thailand

Over nearly four decades, Banpu has conducted its business by embracing Environmental, Social, and Governance (ESG) principles to achieve business growth in tandem with creating sustainable values for all stakeholders. In 2020, Banpu still prioritized social issues and carried on the CSR activities, covering the development of education, youth capacity, community, and the environment. All programs and activities promoted **“learning”** to drive change and sustainable development in social, economic, and environmental dimensions both in and outside the classrooms, as Banpu always believes that **“Learning is the Power of Change and Development”**.

Educational Development

Banpu Education for Sustainability

The year 2020 marked the 17th consecutive year of the **“Banpu Education for Sustainability”** project initiated and carried out by Banpu to develop education – the country’s pillar of sustainable development. The Company has supported integrated learning in three dimensions, namely the development of schools to become sustainable community learning centers, teacher capacity development, and promotion of students’ learning for six schools in Lamphun, Lampang, and Phayao – the provinces where Banpu used to have operations. Banpu has also supported English communication skills improvement for teachers and students at Banpu-sponsored schools through the provision of native speakers for nine consecutive years. From 2020, Banpu has faced such a great challenge of the COVID-19 pandemic; however, the sponsored schools managed to adjust



to the New Normal of instruction by transitioning to online teaching and learning.

Over the past 17 years, Banpu’s support for learning and teaching activities under the **“Banpu Education for Sustainability”** program is worth up to THB 45 million. The program has improved sponsored schools and involved stakeholders in many ways. Students have greater academic potential as well as morals and life skills and will one day become valuable resources to their communities. Teachers are also equipped with the knowledge and ability to facilitate interesting and effective instruction. The activities to improve students’ skills and academic achievement have elevated schools’ educational standards, transforming the schools into community learning centers. The schools are also recognized as exemplary schools, model schools, or pilot schools in many aspects.



Sponsorship for Schools in Southern Border Provinces

In 2020, Banpu provided financial support of THB 1.39 million to 16 schools in the specially targeted development zone through the Office of the Basic Education Commission to improve the schools that lack instructional materials. Over the past 14 years, Banpu has sponsored 145 schools in five southern provinces, namely Narathiwat, Pattani, Yala, Songkhla, and Satun.



Partnership School Project

Banpu has participated in the Partnership School Project, a collaborative project between the Ministry of Education and private sector agencies to elevate the standards of educational institutions and prepare students for the future. The Company has supported three schools, namely Non Sa-at Phitthaya School, Khon Kaen Province; Phon Ngam Phon Sawang School, Maha Sarakham Province; and Rong Kham Hong Thong Witthaya School, Roi Et Province.



Banpu has organized activities according to the guideline for elevating the standards of partner schools as follows:

1. Raising academic quality by training 1st Grade teachers on active learning; producing videos on teaching techniques for Grade 4 students in four major subjects: Thai, mathematics, English, and science; and promoting an active learning environment at both early childhood and elementary levels.
2. Improving technology and information technology, for example, providing sufficient computers for instruction, hiring computer or IT teachers for two partner schools that lacked personnel and promoting teaching computer science and coding.





3. Enhancing English skills by hiring English teachers, promoting teaching English at the early childhood level, and increasing the number of English hours at the elementary level.
4. Supporting training of vocational and life skills to inspire students and introduce choices for their future education and occupations, such as hairdressers, barbers, flower offering and garland makers, farmers, and electricians.
5. Building a professional learning community; for example, Non Sa-at Phitthaya School was invited to present academic works at a conference hosted by the Provincial Education Office, and Phon Ngam Phon Sawang School organized training for parents on how to use government applications.



Light and Learn: Solar Project for Education

In 2020, Banpu NEXT Company Limited, a subsidiary of Banpu, carried out the **"Light and Learn"** project for the fourth consecutive year with the aim of developing an electric utility system for needy schools to facilitate teaching and learning as well as to provide access to information and resources, e.g., satellite systems. The project not only helps expand students' knowledge and capacity to equip them for their future careers and sustainable living but also empowers hill tribe communities. This year, Banpu NEXT installed solar panel systems including batteries and inverters for 15 schools in Kanchanaburi that lack electricity access, namely three schools in Sangklaburi and Sriwawat Districts and a school in Thong Pha Phum District. Banpu NEXT also provided learning facilities and materials such as televisions, sets of satellite receivers, and storybooks entitled **"Solar Wonders and Never-ending Renewable Power,"** worth more than THB 1.6 million. For the past four years, 68 schools have been sponsored under this project.



Environmental Development

Power Green Camp

Banpu, in collaboration with the Faculty of Environment and Resource Studies, Mahidol University, has hosted the **“Power Green Camp”** since 2006 based on the concept of **Envi-Science: Learning through Actions**. The camp aims to raise environmental awareness among young people and create a right understanding of the environment and natural resources so that they can systematically apply scientific knowledge to solve environmental problems.

The camp activities include the development of learning and thinking processes, classroom learning, and hands-on practice in a laboratory, as well as a field trip to broaden their knowledge about the environment and natural resources. Young participants will be able to relate their learning through various activities and create their own projects on the environment and natural resources to improve their skills, creativity, teamwork, and presentation.

In 2020, the **“Power Green Camp”** adapted to the situation during the spread of COVID-19 by hosting a special event under the theme **“Jungle Rumble – Echo from the Deep Forest.”** This year, students in Matthayoms 1-6 of all programs nationwide could apply for an online quiz competition. Teams of three members participated in the 2-round online quiz, which assessed knowledge and an understanding of



the environment and natural resources. Participating students could also earn special points from extra online activities. The five winning teams of 15 members in total were awarded a field trip to Kaeng Krachan National Park in Phetchaburi during 7-9 December 2020 to explore nature and experience the abundance of ecosystems in the Kaeng Krachan Forest Complex. The camp aimed to expand young people's knowledge and understanding of the environment, science, and natural resources, raise their awareness of environmental sustainability, and build future youth leaders and a network of youth leaders.

During the trip, 15 students had the opportunity to gain insight from environmentalists, explore nature trails and experience the abundance of ecosystems in the Kaeng Krachan Forest Complex. They learned about plant and animal species, including insects, how to stay safe in a forest, track animals, and install hidden cameras to monitor wildlife population and their behaviors. The students also enjoyed bird watching activity and stargazing to learn about astronomy.

Furthermore, the young participants joined a CSR activity to make artificial salt licks to provide essential minerals for wild animals, which in a way prevents them from getting into danger when seeking out food in community areas and resolve the conflicts with villagers.

Over the past 15 years, the Power Green Camps were attended by around 1,000 youths. Among these, 174 participants were trained to be environmental youth leaders who serve as camp facilitators and help expand the environmental network.



Youth Capacity Development

Banpu Champions for Change

"Banpu Champions for Change" has been carried out since 2011 by Banpu and ChangeFusion, a non-profit institute under the Thai Rural Reconstruction Movement Foundation under the Royal Patronage, to support young social entrepreneurs who are full of creative force and potential to make positive social changes. Through this program, the young entrepreneurs are supported to grow their business ideas both in terms of revenue and positive social, community, and environmental impacts. The program aims to promote learning and understanding about social enterprises, inculcate morals and business ethics, build a suitable ecosystem in support of social enterprises for the betterment of society, and lay a strong foundation for Thailand's economy and sustainability.

"Banpu Champions for Change" also opened Social Enterprise (SE) School, Thailand's first online learning platform that provides useful knowledge and courses on social enterprises for the participants and general public free of charge to help them expand their businesses and create positive changes and social impacts.

In 2020, due to the COVID-19 situation, social distancing measures had to be complied with, posing many limitations on physical training activities. The COVID-19 pandemic also affected the economy and society, including SEs in Thailand. The Company, therefore, continued "Banpu Champions for Change"



in 2020 by enrolling 20 teams of social entrepreneurs, including those who participated in previous programs and other entrepreneurs. The program provided business knowledge and skills as well as capacity building through the incubation process and networking based on the "Up-Thinking → Up-Skilling → Up-Implementing" principle. In addition, there were four webinars by experts and professionals on business management, online marketing development, financing, business expansion, and tricks and tips, for participants who are social entrepreneurs and those interested.



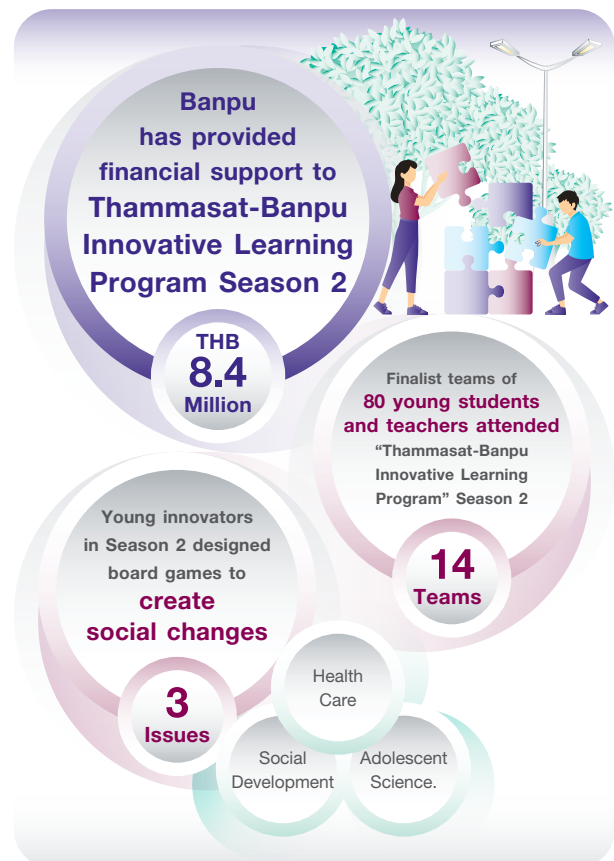


Thammasat-Banpu Innovative Learning Program

Banpu and the Faculty of Learning Sciences and Education, Thammasat University, have co-organized the **"Thammasat-Banpu Innovative Learning Program"** to develop innovation skills for high school and vocational students and teachers. The training of innovation skills such as critical and analytical thinking, creative thinking and communication, responsibility, and leadership was carried out via a design process of **"Learning Games."**

Starting in 2019, the **"Thammasat-Banpu Innovative Learning Program"** has now completed its second season. Banpu has provided financial support worth THB 8.4 million in total for the incubation of young innovators joining this program. In 2020, 14 teams of young innovators were selected to develop design thinking skills through the board game designing process to address social issues and create positive social changes for the target groups and society at large. All 14 finalist teams got an opportunity to showcase their board games to the public for trial at the **Games & Learning 2020** event in October 2020. Their board games were later experimented with their target groups to educate and create understanding and positive change in their behaviors and attitudes.

The award presentation ceremony for the **"Thammasat-Banpu Innovative Learning Program"** Season 2 will be held in March 2021 to present the royally bestowed trophy from Her Royal Highness Princess Maha Chakri Sirindhorn to the winner and other awards to the winning teams in each category.



Banpu Table Tennis Club

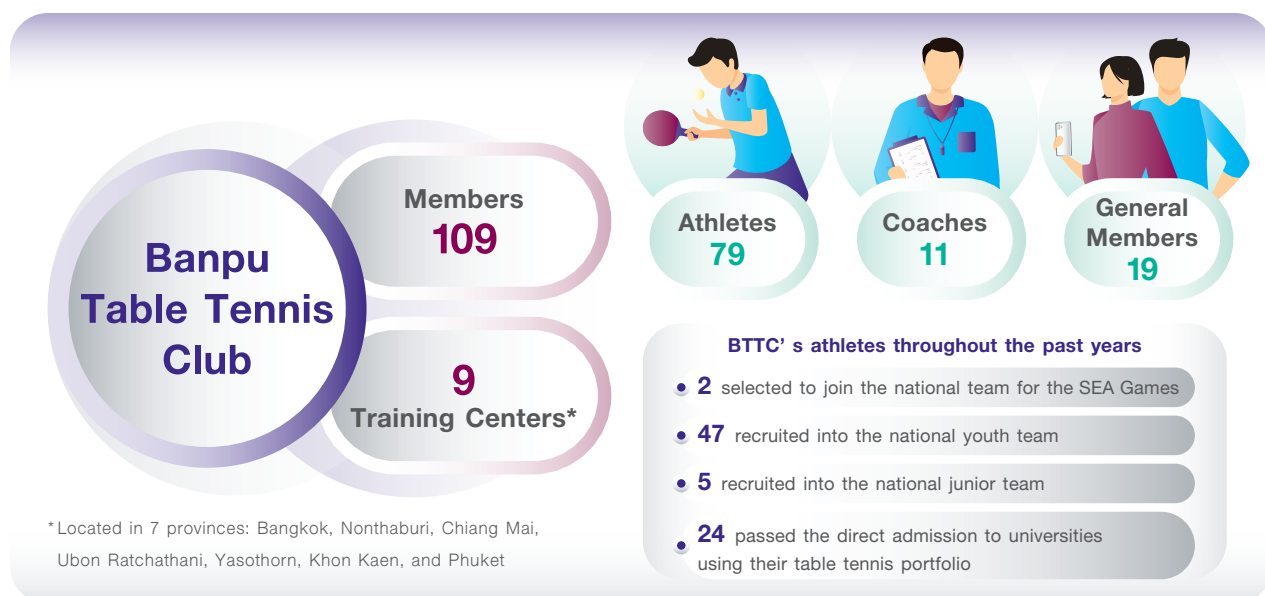
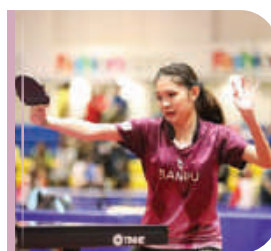
Established in 2008, Banpu Table Tennis Club (BTTC) has sponsored young Thai athletes for 12 consecutive years through a wide range of activities such as daily training, competing in major domestic and international tournaments. The club has professional coaches to train athletes and devise strategies for competitions. In addition, there is an annual event to strengthen the relationship among team members and instill morals, ethics, disciplines, and solidarity.

In 2020, apart from sending its athletes to compete in international tournaments, BTTC also hosted a special tournament after many national and international tournaments had been canceled due to the COVID-19 outbreak in order to strengthen the relationship and adapt to change. The **"2020 BTTC Virtual Tournament"** was thus hosted at the club with special rules and live-streamed via BTTC's Facebook Page. The event was very well-received by athletes, club members, and the general audience.

At the end of 2020, the BTTC had 109 members, comprising 79 athletes, 11 coaches, and 19 general members. The Club's nine training centers are located in seven provinces: Bangkok, Nonthaburi, Chiang Mai, Ubon Ratchathani, Yasothon, Khon Kaen, and Phuket



Phuket, and its members are from provinces across Thailand. Throughout the past years, two BTTC's athletes were selected to join the national team for the Southeast Asian Games (SEA Games), 47 athletes were recruited into the national youth team and five into the national junior team. 24 athletes passed the direct admission to universities using their table tennis portfolio. The Club's athletes also continue to win prizes from many domestic and international tournaments.



Support for a Young Tennis Athlete

Since 2015, Banpu has supported Mr. Songrit Chanbubpha, a high potential but disadvantaged junior tennis player aged under 18 years, to pursue his dream of being the world's top-ranked player by sponsoring sports equipment, physical fitness training courses, and daily training. The Company has also supported his competitions in Thailand and abroad to expose him to real tournament experiences and to help him enhance his life skills while improving professional athletic disciplines.

In 2020, Mr. Chanbubpha was the 645th ranked junior tennis player by the International Tennis Federation and the 22nd ranked under-18 junior tennis player by the Lawn Tennis Association of Thailand Under His Majesty's Patronage.



Community Development

Religious and Local Tradition Development

The Lamphun Mine offered lent candles to nine temples in Li, Na Sai, and Pa Phai Sub-districts, namely Wat Ban Klang, Wat Ban Waen, Wat Puang Kham, Wat Phra Bat Huay Tom, Wat Pang Pratheep, Wat Pha Nam, Wat Banpu, Wat Na Klang, and Wat Ban Hong. Moreover, the mine joined the Thod Kathin Ceremony to offer robes to monks at Wat Ban Hong to nurture Buddhism and offered Pha Pa robes to Wat Banpu in Li District, Lamphun Province, to preserve local tradition and build a good rapport with the community.



Disaster Relief

Mitr Phol-Banpu Solidarity to Aid Thailand on COVID-19 Confrontation Endowment

Due to the spread of the COVID-19, Banpu set up **“Mitr Phol-Banpu Solidarity to Aid Thailand on COVID-19 Confrontation Endowment”** in March 2020. Banpu Public Company Limited and Mitr Phol Group are private organizations that always adhere to corporate governance principles and prioritize social responsibility in their business operations. The major aim of the THB 500-million-baht Endowment is to sponsor essential healthcare and medical supplies and equipment for the prevention and control of COVID-19, which will enable medical personnel to work to their full potential with safety in response to the ongoing health crisis. The Endowment also expanded support to affected communities, especially to help relief hunger resulting from the economic impact of COVID-19, through donations and supports for various projects.

- Supporting the operation of Thammasat University Hospital, one of the hospitals that has been at the front and center to provide treatment for hospitalized COVID-19 patients during the COVID-19 crisis. The hospital also admits COVID patients transferred from other hospitals. Banpu, therefore, sponsored medical devices and equipment worth THB 30 million in total for the hospital, such as negative pressure rooms for COVID-19 patients with 10 beds, a negative pressure operating theatre, and 11 ventilators. The Company also provided other medical equipment, for instance, digital mobile radiography unit, respiratory inspection equipment, exhaled CO₂ and oxygen saturation monitoring devices, vital signs monitoring devices, an automated CPR machine, laryngoscopes for airway examination equipment, and personal protective equipment against airborne particles and harmful dust. Apart from that, Banpu provided medical devices and personal protective equipment to support medical personnel in other 37 hospitals across Thailand.

- Providing over 4,500 survival bags for those affected by the COVID-19 impact in Bangkok, Pathum Thani, Chon Buri, Samut Prakarn, and Samut Sakhon provinces as well as the affected families and orphans registered for relief through the Amir Al-Mu'minin Foundation the Orphans of Southern Thailand.



- Delivering 1.3 million high quality cloth masks ordered to produce by Banpu to teachers and students in 1,500 schools, communities at high risk for COVID-19, government, and officials as well as Thai people across the country.
- Sponsoring EV car sharing through **"Banpu NEXT EV Car Sharing for Caring"** for three months free of charge for medical personnel working for Chulalongkorn University Hospital, the Thai Red Cross Society, "Phyathai and Paolo Memorial" Group, Navaminthra (Navamin 9) Hospital, Piyavate Hospital, etc., to accommodate their home visiting during COVID-19 so that they can safely provide medical services while maintaining social distancing.



- Supporting the activities of the organizations and institutions that support medical personnel and the public in accordance with the intent of the endowment, for instance, the **"White Gown Warrior Fighting COVID-19"** project by the Medical Association of Thailand to offer life insurance for medical doctors and nurses nationwide; sponsoring the production 400,000 masks for the **"Mask for Blood Hero"** campaign by the Thai Red Cross **"Plus One Blood Donation, More Blood More Lives"** project to encourage more blood donations due to blood shortage situation across Thailand; and sponsoring the development of software for people staying in the alternative state quarantine to report their illnesses, check the temperature, and communicate with hotel officers.



Banpu's
total support through
the **"Mitr Phol-Banpu
Solidarity to Aid Thailand
on COVID-19 Confrontation
Endowment"**
was worth up to

**THB
108,168,242**

As of 31 December 2020



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 (IMM), Trubaindo Coal Mining (TCM), Bharinto Ekatama (BEK), Kitadin (KTD) and Jorong Barutama Greston (JBG).

Educational Development

Education is an important component in improving quality of community's lives. ITM carries out various educational programs mainly to support vulnerable students to get access with better education in order to improve their quality of life in the future. The company's educational development support includes:

Community Learning Center (CLC) – Non-formal Education

The CLC development is carried out in response to the low literacy rate and high dropout rates that may lead to certain social risks. Through its subsidiaries (IMM), ITM is fostering 3 PKBMs (Pusat Kegiatan Belajar Masyarakat or Community Learning Center) including PKBM Malahing, PKBM Damai Mandiri and PKBM Salaka. The literacy rate has increased since 2011 through 90 life-skills training courses conducted during the years with 1,657 beneficiaries to date.

Scholarship

ITM also provides continuous support to the education sector through scholarships granted to the local students from elementary schools up to universities in the communities surrounding ITM operations. More than 200 students were granted with scholarships to support their educational needs.

School Facilities

ITM offers continuous financial support to schools for improving learning facilities as well as providing equipment including furnitures, teaching materials,



and books. ITM also provided an improved learning environment for schools in need.

Community Development

Economic Development

In 2020, ITM continued its support for the economic development for communities through its subsidiaries by providing training programs to improve farmers' competencies to foster local businesses. The programs include Bokashi Organic Fertilizer Development, Integrated Farming System (IFS), Indominco Mandiri Home Industry Team (HITIM) and the development of processed fish products.

- Conducted by PT. Jorong Barutama Greston, ITM subsidiary, Bokashi Organic Fertilizer Development program provided trainings for local groups to produce organic fertilizer to supply the mine rehabilitation activities. In 2020, approximately 1,670 tons of organic fertilizer were produced, generating a gross income of IDR 17 million per month.



- Kitadin, ITM subsidiary, initiated a fishery program that aligns with the government's fish consumption campaign. Starting in 2015, the program combined the activities of breeding, rearing, fattening, as well as marketing, leading to a self-sustaining business. Community members who participated in the program have reached average monthly income of IDR 3.25 million.

Enhancement of Public Health

IITM has been promoting health and sanitation development for the communities. ITM's public health aspect programs focus on maternal, child and elderly health as part of the company's strategy to support the quality of life of the locals.

- Providing free health care and examinations, supporting Posyandu (Community Health Center) for babies and toddlers, and offering health checkup for expecting mothers.
- Arranging workshops for local health officers to combat with the COVID-19 pandemic as well as for the communities to understand how to get health services during the pandemic.



- Providing access to clean water for 460 households in Santan Tengah Village, which saved IDR 424,340 million per month on water expense. IMM also supported the community to establish the village-owned enterprises so they can be self-sustainable.

Environmental Conservation

To support and maintain environmental preservation, in 2020, ITM conducted the following programs:

- Planting trees to conserve nature together with communities and government on commemoration of the Environment Day.
- Sharing the company's knowledge and experience in environment management through exhibitions and seminars in universities.
- Becoming a partner in the conservation of the Kutai National Park.
- Restoring coral reefs and planting mangroves along the Bontang Lestari coastline as an effort to control abrasion and conserve marine life.



- Supporting waste management in Bangun Rejo village, Kutai Kartanegara with the Waste Bank program. This program encouraged community members to gather and sort household wastes and sell it to the program to generate extra income from recycled products. To-date, 1,423 households have participated, and an accumulated 50 tons of waste had been processed under the program.

Public Infrastructure Development

ITM enhanced the infrastructure at the local level to boost the economic condition and improve public health and education through multi-utility community buildings construction, school renovation, roads repairs, agricultural irrigation, as well as repairing and constructing mosques and churches and village bridges.



Philanthropic Contributions

In response to the COVID-19 pandemic, ITM dedicated an endowment as follows:

- In DKI Jakarta, ITM distributed a number of aid funds through the Indonesian Coal Companies Association (APBI) and delivered donation to those who were affected.
- In East Kalimantan, Central Kalimantan and South Kalimantan, medical equipment was donated to the Bontang Regional Hospital, the COVID-19 Referral Hospital, the Regional COVID-19 Task Force, and several community health centers.
- Clean and Healthy Living Habits (PHBS) facilities including washing facilities were installed in various areas. Also, an awareness on public health was raised through counseling and campaigns.
- Through the Contractor's CSR Forum, ITM ensured that contractors actively participate in the response to COVID-19 pandemic.

In 2020, a total of over IDR 3.1 billion was dedicated to the society in the fight against the COVID-19 pandemic.

People's Republic of China

2020 marks an extraordinary year for the entire world with the COVID-19 outbreak. In addition to the long-term CSR programs initiated by Banpu Investment (China) Co., Ltd. (BIC), Banpu's subsidiary in China, BIC focused on providing financial and material aids to local governments and communities to safeguard the people against the pandemic.

Social Contributions in Response to COVID-19 Pandemic

At the beginning of the year, the COVID-19 pandemic quickly spread across China. Thousands of people

lost their lives due to the disease while millions lives were threatened. With a strong commitment of being a good corporate citizen, BIC quickly responded by providing financial and material support to the affected communities and its stakeholders to overcome the crisis.



Scholarship for students in need surrounding Gaohe Mine and Hebi Mine

BIC offered scholarships worth a total amount of RMB 350,000 to 122 students with financial difficulties in the areas surrounding Gaohe Mine and Hebi Mine. The grants provided the financial support for their further study in college.

- In February 2020, BIC donated 50,000 pairs of sanitary gloves and 10,000 pieces of surgical masks to the Royal Thai Embassy in Beijing. The masks were distributed to Thai people in Wuhan, cities in Hubei Province, and other territorial responsibilities of the embassy. The support eased the shortage of surgical masks and provided the much-needed daily protection during the COVID-19 pandemic in China.
- The three CHP power plants also provided the fund to the charity foundations and local government with a total value of RMB 900,000 to help the local communities combat the pandemic.



Hebei Banpu Fitness Club

Shijiazhuang Chengfeng Cogen Co., Ltd. has been supporting the Hebei Banpu Fitness Club (formerly known as Banpu Table Tennis Club) since 2003. This year, the power plant provided a fund of RMB 150,000 to the Club to sponsor the training and competition of its athletes.

Education and Sport Support

Luannan Banpu Special Education School

BIC has been supporting the Luannan Banpu Special Education School for 13 consecutive years through its subsidiary CHP plant - Tangshan Banpu Heat & Power Co., Ltd.. This year, the power plant sponsored eight laptops worth around RMB 50,000 to the school to further improve their teaching facilities.



BOARD OF DIRECTORS AND MANAGEMENT

Mr. Chanin Vongkusolkrit

Age: 68

- **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 4 and 12



Mr. Teerana Bhongmakapat

Age: 64

- **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



Education/Training

1

- 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 : 0.35
- Spouse : 0.13

Work Experience in the Last Five Years

Banpu Group

- 2016 – Present : Chairman, Banpu Plc.
- 1983 – Present : Director, Banpu Plc.
- 2015 – 2016 : Senior Executive Officer, Banpu Plc.
- 1983 – 2015 : Chief Executive Officer, Banpu Plc.
- 2015 – Present : Member of the Corporate Governance and Nomination Committee, Banpu Power Plc.
- 1996 – Present : Director, Banpu Power Plc.

Other Listed Companies

- 2018 – Present : Chairman, The Erawan Group Plc.
- 2004 – Present : Director, The Erawan Group Plc.

Other Companies

- 1983 – Present : Director, Mitr Phol Sugar Corp., Ltd.

Other Organizations

- 2019 – Present : Director, Thai Listed Companies Association
- 2015 – Present : Director, Private Sector Collective Action Coalition Against Corruption Council (CAC)
- 2012 – Present : Director, Faculty of Economics, Thammasat University
- 2012 – Present : Chairman, Thammasat Economics 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

2

- 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)
- Risk Management for Corporate Leaders (RCL) #15/2019, Thai Institute of Directors Association (IOD)
- IT Security Awareness for Top Management, ACIS Professional Center Co., Ltd.

% Share Held

- Own share : -
- Spouse : -

Work Experience in the Last Five Years

Banpu Group

- 2014 – Present : Chairman of Audit Committee/Member of Compensation Committee, Banpu Plc.
- 2012 – Present : Independent Director, Banpu Plc.

Other Listed Companies

- 2013 – Present : Director/Chairman of Corporate Governance Committee/Chairman of the Risk Oversight Committee, Tisco Financial Group Plc.

Other Organizations

- 2018 – Present : Chairman of Evaluation Board, Thai Health Promotion Foundation
- 2016 – 2019 : Chairman of the Research Support Committee, National Anti-Corruption Commission (NACC)
- 2011 – 2016 : Professor of Economics (C11), Chulalongkorn University
- 2006 – 2011 : Professor of Economics, Chulalongkorn University
- 2010 – 2015 : Eminent Member, Anti-Money Laundering Office (AMLO)

Mr. Rawi Corsiri

Age: 71

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



Mr. Buntoeng Vongkusolkit

Age: 64

- **Director**
Appointed Date: 3 April 2014
- **Chairman of the Compensation Committee**
Appointed Date: 25 April 2019

* A nephew of person number 1 and a cousin of person number 12



Education/Training

3

- 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 Plc.
- 2012 – Present : Director, Banpu Plc.
- 2012 – 2016 : Member of the Corporate Governance and Nomination Committee, Banpu Plc.
- 2015 – 2016 : Advisor, Banpu Plc.
- 2015 – Present : Member of the Corporate Governance and Nomination Committee, Banpu Power Plc.
- 2001 – Present : Director, Banpu Power Plc.
- 2001 – Present : Director, BLCP Power Ltd.
- 2010 – 2017 : Director, Centennial Coal Co., Ltd.
- 2009 – 2020 : Director, Hongsa Power Co., Ltd.
- 2009 – 2020 : Director, Phu Fai Mining Co., Ltd.

Education/Training

4

- Doctor of Agriculture (Innovative Agriculture), Khon Kaen University
- 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 : 0.085
- Spouse : -

Work Experience in the Last Five Years

Banpu Group

- 2019 – Present : Chairman of the Compensation Committee, Banpu Plc.
- 2014 – Present : Director, Banpu Plc.
- 2014 – 2019 : Member of the Compensation Committee, Banpu Plc.

Other Companies

- 2020 – Present : Chairman/Chairman of Executive Director, Mitr Phol Group
- 1982 – Present : Director, Mitr Phol Group
- 2018 – 2020 : Vice Chairman/Chairman of Executive Director, Mitr Phol Group
- 2015 – 2020 : Chief Operating Officer – Cane Management Business, Mitr Phol Group
- 2011 – 2018 : Senior Executive Vice President, Sugarcane Development & Management Group, Mitr Phol Group

Other Organizations

- 2019 – Present : Honorary Member, King Mongkut's Institute of Technology Ladkrabang Council

Mr. Suthad Setboonsarng

Age: 69

- **Independent Director**
Appointed Date: 3 April 2014
- **Member of the Audit Committee**
Appointed Date: 30 April 2014
- **Member of the Compensation Committee**
Appointed Date: 25 April 2019



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)
- Cyber Resilience Leadership Mission in Action 2019, Bank of Thailand

% Share Held

- Own share : 0.004
- Spouse : -

Work Experience in the Last Five Years

Banpu Group

- 2019 – Present : Member of the Compensation Committee, Banpu Plc.
- 2014 – Present : Independent Director/Member of the Audit Committee, Banpu Plc.

Other Listed Companies

- 2019 – Present : Director/Audit Committee, Somboon Advance Technology Plc.

Other Organizations

- 2018 – Present : Special Subcommittee for Public Sector Audit and Evaluation #2 (Eastern Economic Corridor), Public Sector Development Commission
- 2013 – Present : Chairman, NawaChiOne Foundation
- 2013 – Present : Director/Chairman of Finance, Board of Trustee International Rice Research Institute (IRRI), Los Banos, Philippines
- 2015 – 2020 : Director/Chairman of the Audit Committee/ Risk Oversight Committee, Bank of Thailand

Mr. Pichai Dusdeekulchai

Age: 59

- **Independent Director**
Appointed Date: 4 April 2019
- **Member of the Audit Committee**
Appointed Date: 25 April 2019



Education/Training

- Master of Business Administration (MBA), Ashland University, Ohio, U.S.A.
- Bachelor of Arts Program in Mathematics and Statistic, Thammasat University
- TLCA Leadership Development Program (LDP) #1, Thai Listed Companies Association
- Director Certification Program (DCP) #278/2019, Thai Institute of Directors Association (IOD)

% Share Held

- Own share : -
- Spouse : -

Work Experience in the Last Five Years

Banpu Group

- 2019 – Present : Independent Director, Banpu Plc.
- 2019 – Present : Member of the Audit Committee, Banpu Plc.

Other Listed Companies

- 2020 – Present : Independent Director/Member of the Audit Committee/ Member of the Corporate Governance, Land and Houses Bank Plc.
- 2020 – Present : Independent Director/Chairman of the Nomination and Remuneration Committee/Member of the Audit Committee/Member of the Risk Oversight Committee, LH Financial Group Plc.

Other Organizations

- 2018 – 2018 : General Manager & Deputy Country Head of Thailand, Sumitomo Mitsui Banking Corporation
- 2002 – 2018 : Head of Business Promotion, Sumitomo Mitsui Banking Corporation

Mr. Teerapat Sanguankotchakorn

Age: 55

- Independent Director
Appointed Date: 3 April 2019
- Member of the Compensation Committee
Appointed Date: 25 April 2019



Education/Training

- Doctor of Philosophy Program in Information Processing, Tokyo Institute of Technology
- Master of Engineering Program in Information Processing, Tokyo Institute of Technology
- Bachelor of Engineering Program in Electrical Engineering, Chulalongkorn University
- Director Certification Program (DCP) #148/2011, Thai Institute of Directors Association (IOD)
- Advance Audit Committee Program (AACP) #14/2014, Thai Institute of Directors Association (IOD)
- Board Matters and Trends (BMT) #8/2019, Thai Institute of Directors Association (IOD)

% Share Held

- Own share : -
- Spouse : -

Work Experience in the Last Five Years

Banpu Group

- 2019 – Present : Independent Director, Banpu Plc.
- 2019 – Present : Member of the Compensation Committee, Banpu Plc.

Other Organizations

- 2020 – Present : Executive Director, Technology Promotion Association (Thailand-Japan)
- 2018 – Present : Chairman of the Audit Committee, Thai Public Broadcasting Service (Thai PBS)
- 2018 – Present : Board of Governors, Thai Public Broadcasting Service (Thai PBS)
- 2004 – Present : Associate Professor, Telecommunications Field of Study, School of Engineering and Technologies, Asian Institute of Technology (AIT)
- 2018 – 2018 : Member of the Committee for Sustainable Development and Planning of National Education, Ministry of Education
- 2014 – 2018 : Audit Committee, Thai Public Broadcasting Service (Thai PBS)
- 2012 – 2016 : Board of Governors, Thai Public Broadcasting Service (Thai PBS)

Mr. Piriya Khempon

Age: 61

- Independent Director
Appointed Date: 8 April 2020
- Member of the Corporate Governance and Nomination Committee
Appointed Date: 1 May 2020



Education/Training

- Master of Science (International Relations), London School of Economics University of London, United Kingdom
- Bachelor of Arts (Political Science), Chiangmai University
- Director Certification Program (DCP) #298/2020, Thai Institute of Directors Association (IOD)
- Top Executive Program in Energy (TEA) #7, Thailand Energy Academy

% Share Held

- Own share : -
- Spouse : -

Work Experience in the Last Five Years

Banpu Group

- 2020 – Present : Independent Director/Member of the Corporate Governance and Nomination Committee, Banpu Plc.

Other Listed Companies

- 2019 – Present : Director, Saha Pathana Inter-Holding Plc.

Other Organizations

- Present : Advisor, The Federation of Thai Industries
- 2020 – 2020 : Executive Director and Member of the Risk Oversight Committee, Export-Import Bank of Thailand (EXIM)
- 2017 – 2019 : Ambassador Extraordinary and Plenipotentiary of Thailand to the People's Republic of China, Royal Thai Embassy in Beijing, China
- 2015 – 2017 : Deputy Permanent Secretary for Foreign Affairs, Office of the Permanent Secretary, Ministry of Foreign Affairs

Mr. Anon Sirisaengtaksin

Age: 68

- **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



Mr. Metee Auapinyakul

Age: 67

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

* An older brother of person number 11



Education/Training

9

- 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.
- Capital Market Academy Program #1, Capital Market Academy
- 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 : -
- Spouse : -

Work Experience in the Last Five Years

Banpu Group

- 2016 – Present : Director/Member of the Corporate Governance and Nomination Committee, Banpu Plc.
- 2014 – Present : Executive Advisor, Banpu Plc.

Other Listed Companies

- 2020 – Present : Independent Director/Chairman of Nomination, Remuneration and Corporate Governance Committee/Member of Board Risk and Compliance Committee, CIMB Thai Bank Plc.
- 2020 – Present : Independent Director/Member of Audit Committee/Member of Nomination and Remuneration Committee, Saha-Union Plc.
- 2020 – Present : Overseas Business Consultant, PTT Global Chemical Plc.

Other Companies

- 2019 – Present : Chairman, Thai Eastern Group Holdings Co.,Ltd.
- 2019 – Present : Reform Council, Silpakorn University
- 2014 – 2020 : Chairman, PTTGC Innovation America Corp.
- 2014 – 2020 : Chairman, PTTGC International (USA) Inc.
- 2014 – 2020 : Chairman, Natureworks LLC
- 2012 – 2020 : Chairman, PTTGC International Private Ltd.
- 2012 – 2020 : Chairman, PTTGC International (Netherlands) B.V.
- 2012 – 2020 : Chairman, Emery Oleochemical (M) Sdn. Bhd.
- 2012 – 2020 : Chairman, Emery Specialty Chemical Sdn. Bhd.
- 2012 – 2020 : Chairman, Vencorex Holding

Education/Training

10

- 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 : 0.085
- Spouse : 0.01

Work Experience in the Last Five Years

Banpu Group

- 2014 – Present : Advisor, Banpu Plc.
- 1983 – Present : Director, Banpu Plc.
- 2015 – Present : Director, Banpu Power Plc.

Other Listed Companies

- 2004 – Present : Chairman of Advisors, GENCO Plc.

Mr. Ongart Auapinyakul

Age: 64

- **Director**
Appointed Date: 29 July 1983
- **Advisor**
Appointed Date: 1 January 2017
- **Executive Officer**
Appointed Date: 8 January 2001

* A younger brother of person number 10



Mr. Verajet Vongkusolkit

Age: 56

- **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 4



Education/Training

11

- 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
- Top Executive Program for Creative and Amazing Thai Services (ToPCATS) #2, The University of the Thai Chamber of Commerce

% Share Held

- Own share : 0.11
- Spouse : 0.05

Work Experience in the Last Five Years

Banpu Group

- 2017 – Present : Advisor, Banpu Plc.
- 1983 – Present : Director, Banpu Plc.
- 1983 – 2016 : Executive Officer, Banpu Plc.

Education/Training

12

- Bachelor of Science (Finance), Babson College, Massachusetts, U.S.A.
- Director Certification Program (DCP) #24/2002, Thai Institute of Directors Association (IOD)
- TLCA Executive Development Program #13, Thai Listed Companies Association
- TLCA Leadership Development Program (LDP) #2, Thai Listed Companies Association and International Institute for Management Development (IMD)
- Strategy and Innovation for Businesses in ASIA (SIBA) 2016, Mahidol University and MIT Sloan School of Management
- Leadership Communication Certification Program 2018, Thailand Management Association (TMA)
- Senior Executive Program 2019 (SEP) #33, Sasin Graduate Institute of Business Administration of Chulalongkorn University and The Kellogg School of Management and the Wharton School
- Board that Make a Difference (BMD) #10/2020, Thai Institute of Directors Association (IOD)

% Share Held

- Own share : 0.16
- Spouse : 0.005

Work Experience in the Last Five Years

Banpu Group

- 2010 – Present : Director/Member of the Corporate Governance and Nomination Committee, Banpu Plc.

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.

Ms. Somruedee Chaimongkol

Age: 59

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



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 : 0.12
- Spouse : -

Work Experience in the Last Five Years

Banpu Group

- 2015 – Present : Chief Executive Officer/Director, Banpu Plc.
- 2006 – 2015 : Chief Financial Officer, Banpu Plc.
- 2009 – Present : Director, Banpu Power Plc.
- Present : Director, BLOP Power Ltd.
- Present : Director, Banpu NEXT Co., Ltd.
- Present : Director, Banpu NEXT Green Leasing Co., Ltd.
- Present : Director, Banpu Minerals Co., Ltd.
- Present : Director, Banpu International Ltd.
- Present : Director, Chiang Muan Mining Co., Ltd.
- Present : Director, Banpu Coal Sales Co., Ltd.
- Present : Director, Power Vietnam Co., Ltd.
- Present : Director, Banpu Coal Power Ltd.
- Present : Director, Banpu Innovation & Ventures Co., Ltd.
- Present : Director, Hunnu Investments Pte. Ltd.
- Present : Director, AFE Investments Pty Ltd.
- Present : Director, Banpu Singapore Pte. Ltd.
- Present : Director, BP Overseas Development Co., Ltd.
- Present : Director, Centennial Coal Co., Ltd.
- Present : Director, Hunnu Coal Pty Ltd.
- Present : Director, Banpu Minerals (Singapore) Pte. Ltd.
- Present : Director, Banpu Coal Investment Co., Ltd.
- Present : Director, Asian American Coal, Inc.
- 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 North America Corporation
- Present : Director, BOG Co., Ltd.
- Present : Director, Durapower Holdings Pte. Ltd.
- Present : Director, FoMM Corporation
- Present : Director, Banpu Japan K.K.
- Present : Director, Banpu Energy Australia Pty Ltd.
- Present : Director, Banpu Renewable Australia Pty Ltd.
- Present : Director, BKV Corporation

Mr. Somsak Sithinamsuwan

Age: 60

- **Head of Mining Business**
Appointed Date: 1 January 2020



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 : -

Work Experience in the Last Five Years

Banpu Group

- 2020 – Present : Head of Mining Business, Banpu Plc.
- 2019 – 2019 : Chief Operating Officer – Coal Business, Banpu Plc.
- 2018 – 2018 : Assistant Chief Operating Officer – Coal Business, Banpu Plc.
- Present : Director, Hunnu Gobi Altai LLC
- Present : Director, Banpu Vietnam LLC
- 2019 – Present : Director, Banpu Energy Services (Thailand) Co., Ltd.
- 2019 – Present : Director, Banpu Engineering Services Co., Ltd.
- 2019 – Present : Director, Banpu International Ltd.
- 2019 – Present : Director, Banpu Mineral Co., Ltd.
- 2019 – Present : Director, Banpu Coal Sales Co., Ltd.
- 2019 – Present : Director, Hunnu Coal Pty Ltd.
- 2019 – Present : Director, BP Overseas Development Company
- 2019 – Present : Director, Banpu Minerals (Singapore) Pte. Ltd.
- 2019 – Present : Director, Banpu Singapore Pte. Ltd.
- 2019 – Present : Director, BMS Coal Sales Pte. Ltd.
- 2019 – Present : Director, Hunnu Investments Pte. Ltd.
- 2019 – Present : Director, Aura Land Development Pte. Ltd.
- 2018 – Present : Commissioner, PT. Indo Tambangraya Megah Tbk
- 2018 – Present : Director, Banpu Coal Power Ltd.
- 2019 – 2020 : Director, Chiang Muan Mining Co., Ltd.
- 2015 – 2017 : Senior Vice President – Office of Chief Executive Officer, Banpu Power Plc.
- 2015 – 2017 : Managing Director, Hongsa Power Co., Ltd.

Mr. Kirana Limpaphayom

Age: 46

- **Head of Power Business**
Appointed Date: 10 April 2020
- **Chief Executive Officer –**
Banpu Power Public Company Limited
Appointed Date: 10 April 2020



Mr. Thiti Mekavichai

Age: 58

- **Head of Oil and Gas Business**
Appointed Date: 1 November 2018



Education/Training

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- Ph.D. Sociology, Centre for Comparative Labour Studies, University of Warwick, United Kingdom
- M.Sc. Industrial Relations, Labour Market Economic, London School of Economics and Political Science (LSE), University of London, United Kingdom
- Bachelor of Economics, Chulalongkorn University
- Master of Business Administration in Executive Finance, Sasin Graduate Institute of Business Administration of Chulalongkorn University and The Kellogg School of Management and the Wharton School
- Graduate of the Australian Institute of Company Directors (GAICD)
- Director Certification Program (DCP) #294/2020, Thai Institute of Directors Association (IOD)

% Share Held

- Own share : -
- Spouse : -

Work Experience in the Last Five Years

Banpu Group

- 2020 – Present : Head of Power Business, Banpu Plc.
- 2020 – Present : Chief Executive Officer, Banpu Power Plc.
- Present : Director, Banpu Australia Co., Pty Ltd.
- Present : Director, AFE Investments Pty Ltd.
- Present : Director, Banpu Australia Resources Pty Ltd.
- Present : Director, Banpu Energy Australia Pty Ltd.
- Present : Director, Centennial Coal Co., Pty Ltd.
- 2020 – Present : Director, BLCP Power Ltd.
- 2020 – Present : Director, Banpu NEXT Co., Ltd.
- 2020 – Present : Director, Power Vietnam Co., Ltd.
- 2020 – Present : Director, Banpu Coal Power Ltd.
- 2020 – Present : Director, Hongsa Power Co., Ltd.
- 2020 – Present : Director, PT. ITM Banpu Power Co., Ltd.
- 2016 – 2020 : President Director, PT. Indo Tambangraya Megah Tbk
- 2015 – 2016 : Senior Vice President – Office of the President Director, PT. Indo Tambangraya Megah Tbk
- 2015 – 2016 : Senior Vice President – Head of Australia Investment, Banpu Australia Co., Pty Ltd.
- 2015 – 2016 : Director, Centennial Coal Co., Ltd.

Education/Training

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- Diploma in Hydrographic Surveying, Plymouth Polytechnic, England
- Bachelor of Science in Geography, Srinakharinvirot University
- Executive Program in Energy Literacy for a Sustainable Future #9, Thailand Energy Academy
- Diploma Course in Democratic Politics and Governance for Executives #19, King Prajadhipok's Institute
- Executive Program in "Thammasat for Society" #5, Thammasat Leadership Program
- PTT Leadership Development Program III, PTT Leadership and Learning Institute
- Executive Leadership Development Program (EP-LEAD), IMD
- Media Response for Spokesperson, Hill+Knowlton Strategies
- Safety Leadership Workshop, Safety Management Consultants (UK) Limited

% Share Held

- Own share : -
- Spouse : -

Work Experience in the Last Five Years

Banpu Group

- 2018 – Present : Head of Oil and Gas Business, Banpu Plc.

Other Listed Companies

- 2011 – 2018 : Executive Vice President of Human Resources and Business Services Group, PTT Exploration and Production Plc.

Mr. Sutee Sukruan*

Age: 56

- Senior Vice President – Corporate Development
Appointed Date: 10 April 2020

* Remark:

Mr. Sutee Sukruan was appointed as Head of Corporate Development, effective on 1 January 2021.



Ms. Arisara Sakoongravek

Age: 50

- Chief Financial Officer
Appointed Date: 1 March 2019



Education/Training

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- 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)
- Global Leadership Program for Strategic Leader 2019, IMD Business School
- TLCA Leadership Development Program (LDP) #5, Thai Listed Companies Association and International Institute for Management Development (IMD)
- Leadership Program - Accelerating Transformation Series, Banpu Plc. and Pacrim Group

% Share Held

- Own share : -
- Spouse : -

Work Experience in the Last Five Years

Banpu Group

- 2021 – Present : Head of Corporate Development, Banpu Plc.
- 2020 - 2020 : Senior Vice President – Corporate Development, Banpu Plc.
- 2018 - 2020 : Chief Operating Officer – Power Business, Banpu Plc.
- 2009 – 2017 : Senior Vice President – Corporate Finance, Banpu Plc.
- 2018 – 2020 : Chief Executive Officer, Banpu Power Plc.
- 2019 – Present : Director, Power Vietnam Co., Ltd.
- 2019 – Present : Director, Banpu Japan K.K.
- 2018 – Present : Director, Banpu Coal Power Ltd.
- 2018 – Present : Director, Banpu Renewable Energy Co., Ltd.
- 2018 – Present : Director, BLOP Power Ltd.
- 2018 – Present : Director, Banpu Power Japan Co., Ltd.
- 2018 – Present : Director, Pan-Western Energy Corporation LLC
- 2018 – Present : Director, Shanxi Lu Guang Power Co., Ltd.
- 2018 – Present : Director, PT. ITM Banpu Power
- 2018 – Present : Director, Banpu Power International Ltd.
- 2018 – Present : Director, Zouping Peak Pte. Ltd.
- 2018 – Present : Director, BRE Singapore Pte. Ltd.
- 2018 – Present : Director, BPP Vinh Chau Wind Power LLC

Education/Training

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- Master of Science in Accounting, Thammasat University
- Bachelor of Accounting (BA), Thammasat University
- Certified Public Accountant (Thailand) (CPA)
- Orchestrating Winning Performance 2016, IMD Business School
- Global Leadership Program for Strategic Leader 2017, IMD Business School
- Certification from School of Tax
- 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

- Own share : -

Work Experience in the Last Five Years

Banpu Group

- 2019 – Present : Chief Financial Officer, Banpu Plc.
- 2018 – 2018 : Senior Vice President – Corporate Finance, Banpu Plc.
- 2016 – 2017 : Senior Vice President – Controller, Banpu Plc.
- 2011 – 2015 : Vice President – Accounting, Banpu Plc.
- 2020 – Present : Director, Banpu Vietnam LLC
- 2020 – Present : Director, Banpu International Ltd.
- 2020 – Present : Director, Banpu Minerals Co., Ltd.
- 2020 – Present : Director, Banpu Coal Sales Co., Ltd.
- 2019 – Present : Executive Manager, Aizu Land Solar G.K.
- 2019 – Present : Director, Banpu Innovation & Ventures Co., Ltd.
- 2019 – Present : Director, Banpu Innovation & Ventures (Singapore) Pte. Ltd.
- 2019 – Present : Vice President, Banpu Innovation & Ventures LLC
- 2018 – Present : Director, Banpu Singapore Pte. Ltd.
- 2018 – Present : Director, Banpu Minerals (Singapore) Pte. Ltd.
- 2018 – Present : Director, BP Overseas Development Co., Ltd.
- 2018 – Present : Director, Banpu Coal Investment Co., Ltd.
- 2018 – Present : Director, Aura Land Development Pte. Ltd.
- 2018 – Present : Director, Hunnu Investment Pte. Ltd.
- 2018 – Present : Director, Banpu Renewable Energy Co., Ltd.
- 2018 – Present : Director, Banpu Engineering Services Co., Ltd.
- 2018 – Present : Director, Banpu Energy Services (Thailand) Co., Ltd.
- 2018 – Present : Director, BOG Co., Ltd.
- 2018 – Present : Business Executor, Hokkaido Solar Estate G.K.
- 2018 – Present : Vice President, Banpu North America Corporation

Mr. Varoj Limjaroon

Age: 60

- Head of Human Resources
Appointed Date: 1 January 2018



Education/Training

- M.B.A. (Strategic Management), Thammasat University
- B.B.A., Finance and Accountancy, Thammasat University

% Share Held

- Own share : -
- Spouse : -

Work Experience in the Last Five Years

Banpu Group

- 2018 – Present : Head of Human Resources, Banpu Plc.
- 2009 – 2017 : Senior Vice President – Human Resources, Banpu Plc.

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Mr. Jirameth Achcha*

Age: 51

- Senior Vice President – Corporate Services
Appointed Date: 1 January 2018

* Remark:

Mr. Jirameth Achcha was appointed as Head of Corporate Services, effective on 1 January 2021



Education/Training

- Master of Economics (Business Economics), Kasetsart University
- Bachelor of Economics (Fiscal Economics), Ramkhamhaeng University

% Share Held

- Own share : -
- Spouse : -

Work Experience in the Last Five Years

Banpu Group

- 2021 – Present : Head of Corporate Services, Banpu Plc.
- 2018 – 2020 : Senior Vice President – Corporate Services, Banpu Plc.
- 2016 – 2017 : Vice President – Corporate Compliance, Banpu Plc.
- 2015 – 2016 : Vice President – Business Process Management, Banpu Plc.

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Ms. Udomlux Olarn*

Age: 60

- Head of Corporate Communications
Appointed Date: 1 July 2009

* Remark:
Ms. Udomlux Olarn retire on 1 January 2021



Education/Training

- B.A., Journalism and Mass Communication (Advertising and Public Relations), Thammasat University

% Share Held

- Own share : 0.003
- Spouse : -

Work Experience in the Last Five Years

Banpu Group

- 2009 – 2020 : Head of Corporate Communications, Banpu Plc.

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Mr. Virach Vudhihanaseth

Age: 46

- Company Secretary
Appointed Date: 1 January 2018
- Senior Vice President – Corporate Strategy
Appointed Date: 10 April 2020



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)
- WIAL Certified Action Learning Coach Program, Banpu Plc. and World Institute for Action Learning (Thailand) Ltd.
- Leadership Program - Accelerating Transformation Series, Banpu Plc. and Pacrim Group

% Share Held

- Own share : -
- Spouse : -

Work Experience in the Last Five Years

Banpu Group

- 2020 – Present : Senior Vice President – Corporate Strategy, Banpu Plc.
- 2020 – Present : Head of Corporate Secretary, Banpu Plc.
- 2020 – Present : Head of Investor Relations, Banpu Plc.
- 2018 – 2019 : Vice President – Corporate Secretary & Investor Relations, Banpu Plc.
- 2015 – 2017 : Vice President – Investor Relations, Banpu Plc.

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Ms. Wiyada Wiboonsirichai

Age: 51

- Secretary of the Audit Committee
Appointed Date: 16 January 2018
- Head of Global Internal Audit and Compliance
Appointed Date: 1 January 2019



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), Institute of Internal Auditors (IIA)
- Certified Control Self-Assessment (CCSA), Institute of Internal Auditors (IIA)
- TLCA Executive Development Program #13, Thai Listed Companies Association

% Share Held

- Own share : 0.001

Work Experience in the Last Five Years

Banpu Group

- 2018 – Present : Head of Global Internal Audit and Compliance, Banpu Plc.
- 2018 – Present : Secretary of the Audit Committee, Banpu Plc.
- 2014 – 2017 : Senior Vice President – Information Technology, Banpu Plc.

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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 2020

		Ordinary Share		
Name		31 Dec 2020	31 Dec 2019	+/(−)
1.	Mr. Chanin Vongkusolkrit	17,887,176	17,887,176	-
	Spouse/Minor Child	6,488,580	6,488,580	-
2.	Mr. Teerana Bhongmakapat	-	-	-
	Spouse/Minor Child	-	-	-
3.	Mr. Rawi Corsiri	-	-	-
	Spouse/Minor Child	1,200,000	1,200,000	-
4.	Mr. Buntoeng Vongkusolkrit	4,329,228	2,660,000	1,669,228
	Spouse/Minor Child	-	-	-
5.	Mr. Suthad Setboonsarng	210,188	50,188	160,000
	Spouse/Minor Child	-	5,000	(5,000)
6.	Mr. Pichai Dusdeekulchai	-	-	-
	Spouse/Minor Child	-	-	-
7.	Mr. Teerapat Sanguankotchakorn	-	-	-
	Spouse/Minor Child	-	-	-
8.	Mr. Piriya Khempon	-	-	-
	Spouse/Minor Child	-	-	-
9.	Mr. Anon Sirisaengtaksin	20,000	20,000	-
	Spouse/Minor Child	13,518	13,518	-
10.	Mr. Metee Auapinyakul	4,301,200	4,301,200	-
	Spouse/Minor Child	645,200	645,200	-
11.	Mr. Ongart Auapinyakul	5,595,200	7,439,200	(1,844,000)
	Spouse/Minor Child	2,700,000	3,690,000	(990,000)
12.	Mr. Verajet Vongkusolkrit	8,008,209	6,075,536	1,932,673
	Spouse/Minor Child	238,970	238,970	-
13.	Ms. Somruedee Chaimongkol	5,885,910	5,255,910	630,000
	Spouse/Minor Child	-	-	-
14.	Mr. Somsak Sithinamsuwan	65,525	65,525	-
	Spouse/Minor Child	-	-	-
15.	Mr. Kirana Limpaphayom	-	-	-
	Spouse/Minor Child	-	-	-
16.	Mr. Sutee Sukruan	-	-	-
	Spouse/Minor Child	-	-	-
17.	Ms. Arisara Sakoongaravek	-	-	-
	Spouse/Minor Child	-	-	-
18.	Mr. Varoj Limjaroon	-	-	-
	Spouse/Minor Child	-	-	-
19.	Mr. Jirameth Achcha	90	90	-
	Spouse/Minor Child	23,097	23,097	-
20.	Ms. Udomlux Olarn	165,000	165,000	-
	Spouse/Minor Child	-	-	-

REMUNERATION OF THE BOARD OF DIRECTORS AND EXECUTIVES

1. Remuneration in Cash for the Year Ended 31 December 2020

1.1 Total cash remuneration of the Board of Directors in forms of monthly compensation, meeting allowance, and annual remuneration amounted to THB 43,415,176.00 the details of which are as follows.

Name / Position	Monthly Compensation and Meeting Allowance (THB)	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	1,209,000.00	-	-	-	2,979,940.00	4,188,940.00
2. Mr. Teerana Bhongmakapat Independent Director/ Chairman of the Audit Committee/Member of the Compensation Committee	930,000.00	362,700.00	-	210,000.00	2,292,264.00	3,794,964.00
3. Mr. Rawi Corsiri Director/Chairman of the Corporate Governance and Nomination Committee	930,000.00	-	136,500.00	-	2,292,264.00	3,358,764.00
4. Mr. Buntoeng Vongkusolkit Director/Chairman of the Compensation Committee	870,000.00	-	-	273,000.00	2,292,264.00	3,435,264.00
5. Mr. Suthad Setboonsarng Independent Director/ Member of the Audit Committee/ Member of the Compensation Committee	930,000.00	279,000.00	-	210,000.00	2,292,264.00	3,711,264.00
6. Mr. Pichai Dusdeekulchai Independent Director/ Member of the Audit Committee	930,000.00	279,000.00	-	-	1,719,198.00	2,928,198.00
7. Mr. Teerapat Sanguankotchakorn Independent Director/ Member of the Compensation Committee	930,000.00	-	-	210,000.00	1,719,198.00	2,859,198.00

Name / Position	Monthly Compensation and Meeting Allowance (THB)	Meeting Allowance (THB)			Annual Remuneration (THB)	Total Remuneration (THB)
	Director	Audit Committee	Corporate Governance and Nomination Committee	Compensation Committee		
8. Mr. Piriya Khempon* Independent Director/ Member of the Corporate Governance and Nomination Committee	570,000.00	-	45,000.00	-	-	615,000.00
9. Mr. Anon Sirisaengtaksin Director/Member of the Corporate Governance and Nomination Committee	930,000.00	-	105,000.00	-	2,292,264.00	3,327,264.00
10. Mr. Metee Auapinyakul Director	930,000.00	-	-	-	2,292,264.00	3,222,264.00
11. Mr. Ongart Auapinyakul Director	930,000.00	-	-	-	2,292,264.00	3,222,264.00
12. Mr. Verajet Vongkusolkit Director/Member of the Corporate Governance and Nomination Committee	900,000.00	-	105,000.00	-	2,292,264.00	3,297,264.00
13. Ms. Somruedee Chaimongkol Director	600,000.00	-	-	-	2,292,264.00	2,892,264.00
14. Mr. Sudiarmo Prasatio**	240,000.00	-	30,000.00	-	2,292,264.00	2,562,264.00
Total						43,415,176.00

Notes:

* Mr. Piriya Khempon (person number 8) was appointed as an independent director, effective on 8 April 2020 and a member of the Corporate Governance and Nomination Committee, effective on 1 May 2020.

** Mr. Sudiarmo Prasatio (person number 14) resigned from being a Director (retirement), effective on 8 April 2020.

- In addition to the above remuneration, each Director received other benefits, including annual medical check-up fee of THB 50,000, 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 Chief Executive Officer and Company's executives in forms of salaries and bonuses are rewarded based on performance against the predetermined Key Performance Indicators and individual achievement.

Unit: THB	Number of Executives	2020	Number of Executives	2019
Total Salaries	8	67,893,030.00	9	70,691,225.00
Total Bonuses	8	11,698,700.00	9	16,928,200.00
Total		79,591,730.00		87,619,425.00

Notes:

- 2020: There were eight executives including 1) Ms. Somruedee Chaimongkol 2) Mr. Somsak Sithinamsuwan 3) Mr. Kirana Limpaphayom (as Head of Power Business since April 10, 2020 onwards) 4) Mr. Sutee Sukruan (as Chief Operating Officer – Power Business until April 9, 2020 and as Senior Vice President – Corporate Development since April 10, 2020 until December 31, 2020) 5) Ms. Arisara Sakoongaravek 6) Mr. Varoj Limjaroon 7) Mr. Jirameth Achcha and 8) Ms. Udomlux Olarn.
- 2019: There were nine executives including 1) Ms. Somruedee Chaimongkol 2) Mr. Somyot Ruchirawat (as Deputy Chief Executive Officer until July 2019) 3) Mr. Akaraphong Dayananda 4) Mr. Somsak Sithinamsuwan 5) Mr. Sutee Sukruan 6) Ms. Arisara Sakoongaravek 7) Mr. Varoj Limjaroon 8) Mr. Jirameth Achcha and 9) Ms. Udomlux Olarn.

2. Other Remunerations

Contributions to Provident Fund

Details of the Company's contributions to the provident fund for the Chief Executive Officer and Company's executives, are as follows:

Unit: THB	Number of Executives	2020	Number of Executives	2019
Contribution to Provident Fund	8	4,097,853.00	9	3,356,710.00

Notes:

- 2020: There were eight executives including 1) Ms. Somruedee Chaimongkol 2) Mr. Somsak Sithinamsuwan 3) Mr. Kirana Limpaphayom (as Head of Power Business since April 10, 2020 onwards) 4) Mr. Sutee Sukruan (as Chief Operating Officer – Power Business until April 9, 2020 and as Senior Vice President – Corporate Development since April 10, 2020 until December 31, 2020) 5) Ms. Arisara Sakoongaravek 6) Mr. Varoj Limjaroon 7) Mr. Jirameth Achcha and 8) Ms. Udomlux Olarn.
- 2019: There were nine executives including 1) Ms. Somruedee Chaimongkol 2) Mr. Somyot Ruchirawat (as Deputy Chief Executive Officer until July 2019) 3) Mr. Akaraphong Dayananda 4) Mr. Somsak Sithinamsuwan 5) Mr. Sutee Sukruan 6) Ms. Arisara Sakoongaravek 7) Mr. Varoj Limjaroon 8) Mr. Jirameth Achcha and 9) Ms. Udomlux Olarn.

MAJOR SHAREHOLDERS

Top 10 major shareholders, as of 31 December 2020

Major Shareholders	No. of Shares	%
1. Vongkusolkrit Family	482,055,820	9.50
Mitr Phol Sugar Corp., Ltd.	288,309,528	5.68
TME Capital Co., Ltd.	73,210,200	1.44
City Holding Co., Ltd.	41,251,700	0.81
United Farmer & Industry Co., Ltd.	35,611,300	0.70
MP Particle Board Co., Ltd.	30,438,448	0.60
Mid-Siam Capital Co., Ltd.	14,916,382	0.29
Pacific Sugar Corporation Co., Ltd.	13,646,682	0.27
Mitr Phol Bio-Power (Phu Wiang) Co., Ltd.	12,311,744	0.24
Ufinves Co., Ltd.	11,633,000	0.23
Mitr Kalasin Sugar Co., Ltd.	9,606,042	0.19
2. Thai NVDR Co., Ltd.	262,398,055	5.17
3. Social Security Office	146,165,700	2.88
4. Mr. Prateep Tangmatitham	96,625,500	1.90
5. South East Asia UK (Type C) Nominees Limited	85,955,335	1.69
6. Credit Suisse AG, Singapore Branch	78,551,450	1.55
7. State Street Europe Limited	51,830,152	1.02
8. N.C.B. Trust Limited-Polunin Developing Countries Fund, LLC	34,220,500	0.67
9. East Fourteen Limited-Dimensional Emer MKT Value FD	32,925,150	0.65
10. Bualuang Long - Term Equity Fund	31,760,600	0.63
Total	1,833,423,288	36.11

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 Kanjanakumnerd Family holds 3.82% of its paid-up capital.
 4. The Putongsiriporn Family holds 0.94% of its paid-up capital.
- City Holding Co., Ltd.
 1. The Vongkusolkrit Family holds 90.50% of its paid-up capital.
 2. The Kanjanakumnerd Family holds 6.00% of its paid-up capital.
 3. The Putongsiriporn Family holds 2.00% of its paid-up capital.
 4. The Jenlapwattanukul 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 Corporation Co., 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.

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CONNECTED PERSONS AND TRANSACTIONS

As of 31 December 2020

Company / Type of Business	Description of Relationship	Major Shareholders	Members of the Board of Directors
1. Mitr Phol Sugar Corp., Ltd. (Production and distribution of sugar and molasses)	1. One of the shareholders of Banpu Plc., holding 5.68% of its paid-up capital 2. The major shareholder is Mid-Siam Sugar Co., Ltd. 3. There are three joint directors: 1) Mr. Chanin Vongkusolkrit 2) Mr. Buntoeng Vongkusolkrit 3) Mr. Verajet Vongkusolkrit	1. Mid-Siam Sugar Co., Ltd. 99.99%	1. Mr. Isara Vongkusolkrit 2. Mr. Chanin Vongkusolkrit 3. Mr. Buntoeng Vongkusolkrit 4. Mr. Chusak Vongkusolkrit 5. Mr. Klanarong Sriroth 6. Mrs. Amporn Kanjanakamnerd 7. Mr. Pongsakorn Wongwuttikraikul 8. Mr. Krisda Monthienvichienchai 9. Mr. Verajet Vongkusolkrit 10. Mr. Attaphol Vongkusolkrit
2. TME Capital Co., Ltd. (Investment company)	1. One of the shareholders of Banpu Plc., holding 1.44% of its paid-up capital 2. The major shareholder is the Vongkusolkrit Family and Ufinves Co., Ltd. 3. There is no joint director.	1. The Vongkusolkrit Family 80.01% 2. Ufinves Co., Ltd. 15.23% 3. The Kanjanakamnerd Family 3.82% 4. The Putongsiriporn Family 0.94%	1. Mr. Vitoon Vongkusolkrit 2. Mr. Annap Vongkusolkrit 3. Ms. Phatsawan Vongkusolkrit 4. Ms. Theerarat Vongkusolkrit 5. Ms. Supawee Vongkusolkrit 6. Mr. Banchot Vongkusolkrit 7. Mr. Kavin Vongkusolkrit 8. Mrs. Arada Vongkusolkrit 9. Mr. Amnuay Kanjanakamnerd
3. City Holdings Co., Ltd. (Holding company)	1. One of the shareholders of Banpu Plc., holding 0.81% of its paid-up capital 2. The major shareholder is the Vongkusolkrit Family. 3. There is no joint director.	1. The Vongkusolkrit Family 90.50% 2. The Kanjanakamnerd Family 6.00% 3. The Putongsiriporn Family 2.00% 4. The Jenlapwattanukul Family 1.50%	1. Mr. Vitoon Vongkusolkrit 2. Mr. Banchot Vongkusolkrit 3. Mrs. Arada Vongkusolkrit 4. Ms. Theerarat Vongkusolkrit 5. Ms. Phatsawan Vongkusolkrit 6. Mr. Kavin Vongkusolkrit 7. Mr. Amnuay Kanjanakamnerd 8. Mr. Annap Vongkusolkrit 9. Ms. Supawee Vongkusolkrit
4. United Farmer and Industry Co., Ltd. (Production and distribution of sugar and molasses)	1. One of the shareholders of Banpu Plc., holding 0.70% of its paid-up capital 2. The major shareholder is Mitr Phol Sugar Corp., Ltd. 3. There are two joint directors: 1) Mr. Buntoeng Vongkusolkrit 2) Mr. Verajet Vongkusolkrit	1. Mitr Phol Sugar Corp., Ltd. 87.56%	1. Mr. Isara Vongkusolkrit 2. Mr. Buntoeng Vongkusolkrit 3. Ms. Chayawadee Chaianan 4. Mrs. Anchalee Suwattanapim 5. Mr. Sukkan Wattanawekin 6. Mr. Krisda Monthienvichienchai 7. Mr. Verajet Vongkusolkrit 8. Mr. Pongsakorn Wongwuttikraikul
5. MP Particle Board Co., Ltd. (Investment company)	1. One of the shareholders of Banpu Plc., holding 0.60% of its paid-up capital 2. The major shareholder is United Farmer and Industry Co., Ltd. 3. There is no joint director.	1. United Farmer and Industry Co., Ltd. 99.99%	1. Mr. Isara Vongkusolkrit 2. Mr. Krisda Monthienvichienchai 3. Mrs. Amporn Kanjanakamnerd 4. Mr. Pariwat Kanchanathana 5. Ms. Kannikar Vongkusolkrit

Company / Type of Business	Description of Relationship	Major Shareholders	Members of the Board of Directors
6. Mid-Siam Capital Co., Ltd. (Sugar cane planting and stock investment)	1. One of the shareholders of Banpu Plc., holding 0.29% of its paid-up capital 2. The major shareholder is Mid-Siam Sugar Co., Ltd. 3. There are two joint directors: 1) Mr. Buntoeng Vongkusolkrit 2) Mr. Verajet Vongkusolkrit	1. Mid-Siam Sugar Co., Ltd. 99.99%	1. Mr. Isara Vongkusolkrit 2. Mr. Buntoeng Vongkusolkrit 3. Mr. Verajet Vongkusolkrit 4. Mrs. Amporn Kanjanakamnerd 5. Mr. Attaphol Vongkusolkrit
7. Pacific Sugar Corp., Ltd. (Import and export of sugar)	1. One of the shareholders of Banpu Plc., holding 0.27% of its paid-up capital 2. The major shareholder is Mitr Phol Sugar Corp., Ltd. 3. There is one joint director: 1) Mr. Verajet Vongkusolkrit	1. Mitr Phol Sugar Corp., Ltd. 99.99%	1. Mr. Verajet Vongkusolkrit 2. Mr. Parin Amatyakul 3. Mr. Jirasak Vongkusolkrit
8. Mitr Phol Bio-Power (Phuviang) Co., Ltd. (Production and distribution of sugar and molasses)	1. One of the shareholders of Banpu Plc., holding 0.24% of its paid-up capital 2. The major shareholder is United Farmer and Industry Co., Ltd. 3. There are two joint directors: 1) Mr. Buntoeng Vongkusolkrit 2) Mr. Verajet Vongkusolkrit	1. United Farmer and Industry Co., Ltd. 51.04%	1. Mr. Isara Vongkusolkrit 2. Mr. Buntoeng Vongkusolkrit 3. Mr. Krisda Monthienvichienchai 4. Mr. Sirasak Tathong 5. Mr. Prawit Prakritsri 6. Mr. Jirasak Vongkusolkrit 7. Ms. Theeranat Vongkusolkrit 8. Mr. Nattapong Vongkusolkrit 9. Mr. Arnat Panya 10. Mr. Watchara Hemruchatanun 11. Mr. Verajet Vongkusolkrit
9. Ufinves Co., Ltd. (Holding company)	1. One of the shareholders of Banpu Plc., holding 0.23% of its paid-up capital 2. The major shareholder is TME Capital Co., Ltd. 3. There is no joint director.	1. TME Capital Co., Ltd. 100%	1. Mr. Vitoon Vongkusolkrit 2. Mr. Annop Vongkusolkrit 3. Ms. Phatsawan Vongkusolkrit 4. Ms. Theeranat Vongkusolkrit 5. Ms. Supawee Vongkusolkrit 6. Mr. Banchoet Vongkusolkrit 7. Mr. Kawin Vongkusolkrit 8. Mrs. Arada Vongkusolkrit 9. Mr. Amnuay Kanjanakamnerd
10. Mitr Kalasin Sugar Co., Ltd. (Production and distribution of sugar and molasses)	1. One of the shareholders of Banpu Plc., holding 0.19% of its paid-up capital 2. The major shareholder is United Farmer and Industry Co., Ltd. 3. There are two joint directors: 1) Mr. Buntoeng Vongkusolkrit 2) Mr. Verajet Vongkusolkrit	1. United Farmer and Industry Co., Ltd. 99.99%	1. Mr. Isara Vongkusolkrit 2. Mr. Buntoeng Vongkusolkrit 3. Mr. Pongsakorn Wongwuttikraikul 4. Mr. Sukkan Wattanawekin 5. Ms. Chayawadee Chaianan 6. Mr. Krisda Monthienvichienchai 7. Mrs. Anchalee Suwattanapim 8. Mr. Verajet Vongkusolkrit

OTHER REFERENCES

1. Ordinary Share Registrar	Thailand Securities Depository Company Limited 1 st Floor, The Securities Exchange of Thailand 93 Ratchadapisek Road, Din Daeng, Bangkok 10400 Tel. +66 2009 9000 Contact center +66 2009 9999
2. Debenture Registrar	Bangkok Bank Public Company Limited 333 Silom Road, Bangrak, Bangkok 10500 Tel. +66 2230 1893
3. Bond Representative	Siam Commercial Bank Public Company Limited 9 Ratchadapisek Road, Jatujak, Bangkok 10900 Tel. +66 2544 1111 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 Bangkok Bank Public Company Limited 333 Silom Road, Bangrak, Bangkok 10500 Tel. +66 2230 1893
4. Auditor	Ms. Rodjanart Banyatananusard Authorised Auditor No. 8435 PricewaterhouseCoopers ABAS Company Limited 15 th Floor, Bangkok City Tower 179/74-80 South Sathorn Road, Bangkok 10120 Tel. +66 2844 1000
5. Financial Advisor	--None--
6. Advisor or Manager under Management Agreement	The Company did not hire any advisors or managers under any permanent management agreement. Advisors, including financial advisors, were hired on a case-by-case basis as necessary to support its operations from time to time. The Company's management is mainly supervised by the Board of Directors.
7. Financial Institutions	The Company is regularly in contact with around 30 local and international commercial banks and financial institutions.

DETAIL OF THE COMPANY, ITS SUBSIDIARIES AND ASSOCIATED COMPANIES, AND JOINT VENTURES

As of 31 December 2020

	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 Public Company Limited	Energy	5,074,581,515 THB	5,074,581,515 THB	5,074,581,515	1	-	1550, Thanapoom Tower, 27 th Floor, New Petchburi Road, Makkasan, Ratchathewi, Bangkok 10400, Thailand	66 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	100.00% (held by Banpu Public Company Limited)	58/1, Moo 1, Tambon Thungkwaw, Amphoe Muang Phrae, Phrae Province 54000, Thailand	66 2694 6600
3	Chiang Muan Mining Co., Ltd.	Coal mining and trading	57,837,500 THB	57,837,500 THB	5,783,750	10	100.00% (held by Banpu Minerals Co., Ltd.)	1550, Thanapoom Tower, 27 th Floor, New Petchburi Road, Makkasan, Ratchathewi, Bangkok 10400, Thailand	66 2694 6600
4	Banpu Coal Sales Co., Ltd.	Coal trading	320,000,000 THB	320,000,000 THB	3,200,000	100	100.00% (held by Banpu Minerals Co., Ltd.)	1550, Thanapoom Tower, 27 th Floor, New Petchburi Road, Makkasan, Ratchathewi, Bangkok 10400, Thailand	66 2694 6600
5	Banpu International Ltd.	Investment studying	1,040,000,000 THB	1,040,000,000 THB	104,000,000	10	100.00% (held by Banpu Minerals Co., Ltd.)	1550, Thanapoom Tower, 27 th Floor, New Petchburi Road, Makkasan, Ratchathewi, Bangkok 10400, Thailand	66 2694 6600
6	BOG Co., Ltd.	Investment in energy business	33,506,000,000 THB	30,924,700,000 THB	335,060,000	100	100.00% (held by Banpu Public Company Limited)	1550, Thanapoom Tower, 27 th Floor, New Petchburi Road, Makkasan, Ratchathewi, Bangkok 10400, Thailand	66 2694 6600
7	Banpu Engineering Services Co., Ltd.	Investment in alternative energy	247,000,000 THB	247,000,000 THB	24,700,000	10	100.00% (held by Banpu Public Company Limited)	1550, Thanapoom Tower, 27 th Floor, New Petchburi Road, Makkasan, Ratchathewi, Bangkok 10400, Thailand	66 2694 6600
8	Banpu Energy Services (Thailand) Co., Ltd.	Investment in alternative energy	236,124,430 THB	236,124,430 THB	23,612,443	10	100.00% (held by Banpu Engineering Services Co., Ltd.)	1550, Thanapoom Tower, 27 th Floor, New Petchburi Road, Makkasan, Ratchathewi, Bangkok 10400, Thailand	66 2694 6600
9	Banpu Innovation & Ventures Co., Ltd.	Research and development in disruptive technology	112,000,000 THB	112,000,000 THB	1,120,000	100	100.00% (held by Banpu Public Company Limited)	1550, Thanapoom Tower, 27 th Floor, New Petchburi Road, Makkasan, Ratchathewi, Bangkok 10400, Thailand	66 2694 6600
10	Banpu Power Public Company Limited	Energy generation business	31,044,920,000 THB	30,510,217,000 THB	3,051,021,700	10	78.66% (held by Banpu Public Company Limited)	1550, Thanapoom Tower, 26 th Floor, New Petchburi Road, Makkasan, Ratchathewi, Bangkok 10400, Thailand	66 2007 6000
11	Banpu Coal Power Ltd.	Investment in energy and power business	5,921,587,160 THB	5,921,587,160 THB	592,158,716	10	100.00% (held by Banpu Power Public Company Limited)	1550, Thanapoom Tower, 26 th Floor, New Petchburi Road, Makkasan, Ratchathewi, Bangkok 10400, Thailand	66 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
12	Power Vietnam Co., Ltd.	Investment in energy and power business	400,000,000 THB	400,000,000 THB	40,000,000	10	100.00% (held by Banpu Coal Power Ltd.)	1550, Thanapoom Tower, 26 th Floor, New Petchburi Road, Makkasan, Ratchathewi, Bangkok 10400, Thailand	66 2007 6000
13	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 Public Company Limited)	1550, Thanapoom Tower, 26 th Floor, New Petchburi Road, Makkasan, Ratchathewi, Bangkok 10400, Thailand	66 2007 6000
14	Banpu NEXT Co., Ltd.	Smart clean energy solution business	11,087,000,000 THB	11,087,000,000 THB	1,108,700,000	10	50.00% (held by Banpu Public Company Limited) 50.00% (held by Banpu Power Public Company Limited)	1550, Thanapoom Tower, 24 th Floor, New Petchburi Road, Makkasan, Ratchathewi, Bangkok 10400, Thailand	66 2694 6600
15	Banpu NEXT Green Leasing Co., Ltd.	Investment in energy business and leasing	50,000,000 THB	50,000,000 THB	5,000,000	10	100.00% (held by Banpu NEXT Co., Ltd.)	1550, Thanapoom Tower, 24 th Floor, New Petchburi Road, Makkasan, Ratchathewi, Bangkok 10400, Thailand	66 2095 6569
Indonesia									
16	PT. Indo Tambangraya Megah Tbk	Major trading of solid, liquid and gas fuel, and other related products	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
17	PT. Kitadin	Coal mining in Indonesia	1,000,000,000,000 IDR	377,890,000,000 IDR	188,945	2,000,000	100% (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
18	PT. Indominco Mandiri	Coal mining in Indonesia	20,000,000,000 IDR	12,500,000,000 IDR	12,500	1,000,000	100% (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
19	PT. Jorong Barutama Greston	Coal mining in Indonesia	4,500,000,000 IDR	318,855,000,000 IDR	21,257	15,000,000	100% (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
20	PT. Trubaindo Coal Mining	Coal mining in Indonesia	100,000,000,000 IDR	63,500,000,000 IDR	63,500	1,000,000	100% (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
21	PT. Bharinto Ekatama	Coal mining in Indonesia	68,000,000,000 IDR	17,000,000,000 IDR	17,000	1,000,000	100% (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
22	PT. ITM Indonesia	Major trading of solid, liquid and gas fuel, and other related products	40,000,000,000 IDR	11,000,000,000 IDR	11,000	1,000,000	100% (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
23	PT. Tambang Raya Usaha Tama	Mining and other excavations support activities	500,000,000,000 IDR	353,980,000,000 IDR	35,398	10,000,000	100% (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
24	PT. ITM Batubara Utama	Coal mining business	40,000,000,000 IDR	11,000,000,000 IDR	11,000	1,000,000	100% (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
25	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
26	PT. ITM Banpu Power	Electric power generator	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 Public Company Limited)	Pondok Indah Office Tower 3, 3 rd Floor, Jl. Sultan Iskandar Muda, Pondok Indah Kav. V-TA, Jakarta 12310, Indonesia	6221 29328100
27	PT. Gas Emas	Major trading of solid, liquid and gas fuel, and other related products	306,050,000,000 IDR	283,682,500,000 IDR	21,200,000	9,725 (Series A Shares) 13,700 (Series B Shares)	91.99% (held by PT. Indo Tambangraya Megah Tbk) 6.01% (held by PT. ITM Indonesia)	Pondok Indah Office Tower 3, 3 rd Floor, 3 Jl. Sultan Iskandar Muda Kav. V-TA Pondok Pinang, Kebayoran Lama, Jakarta 12310, Indonesia	6221 29328100
28	PT. Tepian Indah Sukses	Coal mining in Indonesia	3,000,000,000 IDR	1,000,000,000 IDR	1,000	1,000,000	100% (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
29	PT. Nusa Persada Resources	Coal mining in Indonesia	10,000,000,000 IDR	3,700,000,000 IDR	37,000	100,000	100% (held by PT. Indo Tambangraya Megah Tbk)	Jalan Pendreh, Komplek Perumahan Nur Asri Perdana, RT. 33-A, Kel., Kec., Kab. Barito Utara, Prop. Kalimantan Tengah. Corresponding office: 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
30	PT. Energi Batubara Perkasa	Major trading of solid, liquid and gas fuel, and other related products	1,000,000,000 IDR	1,000,000,000 IDR	1,000	1,000,000	100% (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
31	PT. Sentral Mutiara Energy	Major trading of solid, liquid and gas fuel, and other related products	150,000,000,000 IDR	131,897,000,000 IDR	1,318,970	100,000	100% (held by PT. Indo Tambangraya Megah Tbk)	Gd. Menara Pertiwi Lt.28 Unit C-D Jl.Mega Kuningan Barat III Kav.10.1 No.3 Kel. Kuningan Timur, Kec. Setiabudi Jakarta Selatan -12950	6221 25983737
32	PT. Graha Panca Karsa	Coal mining and major trading of metal goods for construction material	500,000,000 IDR	270,000,000 IDR	270	1,000,000	75.00% (held by PT. Sentral Mutiara Energy)	Gd. Menara Pertiwi Lt.28 Unit C-D Jl.Mega Kuningan Barat III Kav.10.1 No.3 Kel. Kuningan Timur, Kec. Setiabudi Jakarta Selatan -12950	6221 25983737
Australia									
33	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, 1 Market Street, Sydney NSW 2000, Australia	61 2 9266 2700
34	Centennial Coal Co. Pty Ltd.	Coal mining and marketing	2,599,783,562 AUD	2,599,783,562 AUD	545,126,381	4.8	100.00% (held by Banpu Australia Co. Pty Ltd.)	Level 18, 1 Market Street, Sydney NSW 2000, Australia	61 2 9266 2700
35	Centennial Northern Coal Services Pty Ltd.	Employer company for Newstan Washery	1 AUD	1 AUD	1	1	100.00% (held by Centennial Coal Co. Pty Ltd.)	Level 18, 1 Market Street, Sydney NSW 2000, Australia	61 2 9266 2700
36	Berrima Coal Pty Ltd.	Dormant	2 AUD	2 AUD	2	1	100.00% (held by Centennial Coal Co. Pty Ltd.)	Level 18, 1 Market Street, Sydney NSW 2000, Australia	61 2 9266 2700
37	Centennial Airly Pty Ltd.	Coal mining	2 AUD	2 AUD	2	1	100.00% (held by Centennial Coal Co. Pty Ltd.)	Level 18, 1 Market Street, Sydney NSW 2000, Australia	61 2 9266 2700
38	Centennial Angus Place Pty Ltd.	Coal mining	1 AUD	1 AUD	1	1	100.00% (held by Centennial Coal Co. Pty Ltd.)	Level 18, 1 Market Street, Sydney NSW 2000, Australia	61 2 9266 2700
39	Centennial Coal Infrastructure Pty Ltd.	Coal exporting logistics and infrastructure	2 AUD	2 AUD	2	1	100.00% (held by Centennial Coal Co. Pty Ltd.)	Level 18, 1 Market Street, Sydney NSW 2000, Australia	61 2 9266 2700
40	Centennial Coal Services and Marketing Pty Ltd.	Coal marketing	1 AUD	1 AUD	1	1	100.00% (held by Centennial Coal Co. Pty Ltd.)	Level 18, 1 Market Street, Sydney NSW 2000, Australia	61 2 9266 2700
41	Centennial Northern Mining Services Pty Ltd.	Dormant	1 AUD	1 AUD	1	1	100.00% (held by Centennial Coal Co. Pty Ltd.)	Level 18, 1 Market Street, Sydney NSW 2000, Australia	61 2 9266 2700
42	Centennial Inglenook Pty Ltd.	Coal mining	1 AUD	1 AUD	1	1	100.00% (held by Centennial Coal Co. Pty Ltd.)	Level 18, 1 Market Street, Sydney NSW 2000, Australia	61 2 9266 2700
43	Centennial Mandalong Pty Ltd.	Coal mining	1 AUD	1 AUD	1	1	100.00% (held by Centennial Coal Co. Pty Ltd.)	Level 18, 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
44	Centennial Mannering Pty Ltd.	Coal mining	1 AUD	1 AUD	1	1	100.00% (held by Centennial Coal Co. Pty Ltd.)	Level 18, 1 Market Street, Sydney NSW 2000, Australia	61 2 9266 2700
45	Centennial Munmorah Pty Ltd.	Coal mining (Now dormant)	1 AUD	1 AUD	1	1	100.00% (held by Centennial Coal Co. Pty Ltd.)	Level 18, 1 Market Street, Sydney NSW 2000, Australia	61 2 9266 2700
46	Centennial Myuna Pty Ltd.	Coal mining	1 AUD	1 AUD	1	1	100.00% (held by Centennial Coal Co. Pty Ltd.)	Level 18, 1 Market Street, Sydney NSW 2000, Australia	61 2 9266 2700
47	Centennial Newstan Pty Ltd.	Coal mining	1 AUD	1 AUD	1	1	100.00% (held by Centennial Coal Co. Pty Ltd.)	Level 18, 1 Market Street, Sydney NSW 2000, Australia	61 2 9266 2700
48	Charbon Coal Pty Ltd.	Coal mining	2 AUD	2 AUD	2	1	100.00% (held by Centennial Coal Co. Pty Ltd.)	Level 18, 1 Market Street, Sydney NSW 2000, Australia	61 2 9266 2700
49	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. Pty Ltd.)	Level 18, 1 Market Street, Sydney NSW 2000, Australia	61 2 9266 2700
50	Centennial Fassifern Pty Ltd.	Coal mining	2 AUD	2 AUD	2	1	100.00% (held by Centennial Coal Co. Pty Ltd.)	Level 18, 1 Market Street, Sydney NSW 2000, Australia	61 2 9266 2700
51	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, 1 Market Street, Sydney NSW 2000, Australia	61 2 9266 2700
52	Powercoal Superannuation Pty Ltd.	Superannuation company (Dormant)	2 AUD	2 AUD	2	1	100.00% (held by Powercoal Pty Ltd.)	Level 18, 1 Market Street, Sydney NSW 2000, Australia	61 2 9266 2700
53	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. Pty Ltd.)	Level 18, 1 Market Street, Sydney NSW 2000, Australia	61 2 9266 2700
54	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, 1 Market Street, Sydney NSW 2000, Australia	61 2 9266 2700
55	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, 1 Market Street, Sydney NSW 2000, Australia	61 2 9266 2700
56	Clarence Coal Pty Ltd.	Coal mining - Clarence JV	2 AUD	2 AUD	2	1	100.00% (held by Coalex Pty Ltd.)	Level 18, 1 Market Street, Sydney NSW 2000, Australia	61 2 9266 2700
57	Collieries Superannuation Pty Ltd.	Superannuation company (Dormant)	2 AUD	2 AUD	2	1	100.00% (held by Powercoal Pty Ltd.)	Level 18, 1 Market Street, Sydney NSW 2000, Australia	61 2 9266 2700
58	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, 1 Market Street, Sydney NSW 2000, Australia	61 2 9266 2700
59	Huntley Colliery Pty Ltd.	Dormant	354,000 AUD	354,000 AUD	177,000	2	100.00% (held by Powercoal Pty Ltd.)	Level 18, 1 Market Street, Sydney NSW 2000, Australia	61 2 9266 2700
60	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, 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
61	Powercoal Employee Entitlements Co. Pty Ltd.	Employee trust company Ex Powercoal	2 AUD	2 AUD	2	1	100.00% (held by Centennial Coal Co. Pty Ltd.)	Level 18, 1 Market Street, Sydney NSW 2000, Australia	61 2 9266 2700
62	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. Pty Ltd.)	Level 18, 1 Market Street, Sydney NSW 2000, Australia	61 2 9266 2700
63	Ivanhoe Coal Pty Ltd.	Coal mining	2 AUD	2 AUD	2	1	100.00% (held by Centennial Coal Co. Pty Ltd.)	Level 18, 1 Market Street, Sydney NSW 2000, Australia	61 2 9266 2700
64	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. Pty Ltd.)	Level 18, 1 Market Street, Sydney NSW 2000, Australia	61 2 9266 2700
65	Centennial Springvale Holdings Pty Ltd.	Coal mining	1 AUD	1 AUD	1	1	100.00% (held by Centennial Coal Co. Pty Ltd.)	Level 18, 1 Market Street, Sydney NSW 2000, Australia	61 2 9266 2700
66	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, 1 Market Street, Sydney NSW 2000, Australia	61 2 9266 2700
67	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, 1 Market Street, Sydney NSW 2000, Australia	61 2 9266 2700
68	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, 1 Market Street, Sydney NSW 2000, Australia	61 2 9266 2700
69	AFE Investments Pty Ltd.	Mining investment	2 AUD	2 AUD	2	1	100.00% (held by Banpu Australia Co. Pty Ltd.)	Level 18, 1 Market Street, Sydney NSW 2000, Australia	61 2 9266 2700
70	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, 1 Market Street, Sydney NSW 2000, Australia	61 2 9266 2700
71	Springvale Coal Sales Pty Ltd.	Coal marketing	2 AUD	2 AUD	2	1	100.00% (held by Centennial Springvale Holding Pty Ltd.)	Level 18, 1 Market Street, Sydney NSW 2000, Australia	61 2 9266 2700
72	Centennial Energy Australia Pty Ltd.	Renewable energy	2 AUD	2 AUD	2	1	100.00% (held by Banpu Australia Co. Pty Ltd.)	Level 18, 1 Market Street, Sydney NSW 2000, Australia	61 2 9266 2700
73	Airly Solar Pty Ltd.	Renewable energy	2 AUD	2 AUD	2	1	100.00% (held by Banpu Australia Co. Pty Ltd.)	Level 18, 1 Market Street, Sydney NSW 2000, Australia	61 2 9266 2700
74	Centennial Wallarah Pty Ltd.	Mining investment	2 AUD	2 AUD	2	1	100.00% (held by Centennial Coal Co. Pty Ltd.)	Level 18, 1 Market Street, Sydney NSW 2000, Australia	61 2 9266 2700
75	Banpu Renewable Australia Pty Ltd.	Renewable energy	2 AUD	2 AUD	2	1	100.00% (held by Banpu NEXT Co., Ltd.)	Level 18, 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
76	Hunnu Coal Pty Ltd.	Coal mining and trading	284,688,631 AUD	284,688,631 AUD	400,752,717	No par value*	100.00% (held by Banpu Minerals (Singapore) Pte. Ltd.)	Level 18, 1 Market Street, Sydney NSW 2000, Australia	61 2 9166 2700
China									
77	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 507, No.20 Jiafeng Road, Pilot Free Trade Zone (Shanghai), P.R. China	8610 57580337
78	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.)	East of Jingshen Highway, Zhengding County, Shijiazhuang City, Hebei Province, P.R. China, 050800	86311 85176918
79	Banpu Investment (China) Ltd.	Investment in energy business and other industrial areas	30,000,000 USD	30,000,000 USD	N/A	N/A	100.00% (held by Banpu Power Investment Co., Ltd.)	Unit 508, 5 th Floor, Tower 21, No. 10 Jiuxianqiao Road, Chaoyang District, Beijing, P.R. China	8610 57580388
80	Tangshan Banpu Heat and Power Co., Ltd.	Power and steam generation and sales	78,082,200 USD	47,504,217 USD	N/A	N/A	87.92% (held by Pan-Western Energy Corporation LLC) 12.08% (held by Banpu Investment (China) Ltd.)	West of Gujiaying Village, Bencheng Town, Luannan County, Tangshan City, Hebei Province, P.R. China, 063500	86315 4168274
81	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.)	Handian Town, Zouping County, Binzhou City, Shandong Province, P.R. China, 256209	86543 4615655
82	BPP Renewable Investment (China) Co., Ltd.	Investment in renewable energy business	160,000,000 USD	97,620,000 CNY	N/A	N/A	100.00% (held by Banpu NEXT Co., Ltd.)	Unit 108, No. 26 Jiafeng Road, Pilot Free Trade Zone (Shanghai), P.R. China	8610 57580388
83	Anqiu Huineng Renewable 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.)	1 st Floor, Unit 1, Dafugou Village, Wushan Town, Anqiu County, Weifang City, Shandong Province, P.R. China	8610 57580310
84	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.)	2 nd Floor, Unit 1, Dafugou Village, Wushan Town, Anqiu County, Weifang City, Shandong Province, P.R. China	8610 57580310
85	Dongping County 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 the north section of Xishan Road, Dongping County, Taian City, Shandong Province, P.R. China	8610 57580310

* 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
86	Anqiu County 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.)	Unit 2, Longwangmiao Village, Dasheng Town, Anqiu County, Weifang City, Shandong Province, P.R. China	8610 57580310
87	Jiaxing Deyuan Energy-Saving Technology Co., Ltd.	Solar power generation	150,740,000 CNY	150,737,586 CNY	N/A	N/A	100.00% (held by BPP Renewable Investment (China) Co., Ltd.)	No. 999 Xianghu Road, Yaozhuang Town, Jiashan County, Jiaxing City, Zhejiang Province, P.R. China	8610 57580310
88	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) Ltd.)	No.28 Xiwang Zhongxin Road, Handian Town, Zouping County, Binzhou City, Shandong Province, P.R. China	86543 4866099
89	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) Ltd.)	(West Wing, 3 rd Floor, Office Building of Shijiazhuang Chengfeng Cogen Co., Ltd.) North of Beiguan Village, Zhengding County, Shijiazhuang City, Hebei Province, P.R. China	86311 85176969
90	Feicheng Xingyu Solar Power PV Technology Co., Ltd.	Solar power generation	55,000,000 CNY	55,000,000 CNY	N/A	N/A	100.00% (held by BPP Renewable Investment (China) Co., Ltd.)	Huangtuling Village, Anzhan Town, Feicheng County, Tai'an City, Shandong Province, P.R. China	8610 57580310
91	Banpu (Beijing) Energy Trading Ltd.	Coal trading	80,000,000 CNY	40,000,000 CNY	N/A	N/A	100.00% (held by Banpu Minerals (Singapore) Pte. Ltd.)	Unit 508A, 5 th Floor, Tower 21, No.10 Jiuxianqiao Road, Chaoyang District, Beijing, P.R. China	8610 57580337
92	Jiangsu Jixin Electric Power Co., Ltd.	Solar power generation	64,000,000 CNY	64,000,000 CNY	N/A	N/A	100.00% (held by BPP Renewable Investment (China) Co., Ltd.)	Zhengwei Village, Qianfeng Town, Jinhu County, Huai'an City, Jiangsu Province, P.R. China	8610 57580310
Mongolia									
93	Hunnu Altai LLC	Foreign trade, investment in coal mining	94,143,561,104.47 MNT	94,143,561,104.47 MNT	679,785	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
94	Hunnu Gobi Altai LLC	Foreign trade, minerals exploration, 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
95	Hunnu Altai Minerals LLC	Foreign trade, 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

	Name	Type of business	Authorized Capital	Paid-up Capital	No. of Paid-up Capital (Shares)	Par Value per Share	% of Holding	Head Office	Telephone
96	Hunnu Resources LLC	Foreign trade, investment in coal mining	358,566,594,196.57 MNT	358,566,594,196.57 MNT	223,465,465	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
97	Munkh Sumber Uul LLC	Foreign trade	3,148,769,582.83 MNT	3,148,769,582.83 MNT	314,876	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
98	Golden Gobi Mining LLC	Foreign trade, minerals exploration	18,417,657,766.51 MNT	18,417,657,766.51 MNT	1,841,764	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
99	Bilegt Khairkhan Uul LLC	Foreign trade, minerals mining	30,465,045,204.99 MNT	30,465,045,204.99 MNT	3,046,504	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
100	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
101	Munkhnoyon Suvraga LLC	Foreign trade, minerals mining, tourism, construction materials sale	184,702,055,850 MNT	184,702,055,850 MNT	184,702,055	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									
102	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
103	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
104	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
105	Hunnu Investments Pte. Ltd.	Investment in coal business	N/A	100 SGD 35,100,188.82 USD	100 35,100,188	No par value*	100.00% (held by Hunnu Coal Pty Ltd.)	One Marina Boulevard, #28-00 Singapore 018989	65 6890 7188

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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
106	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
107	Zouping Peak Pte. Ltd.	Investment in power business	N/A	2 SGD 140,495,758 CNY	2 140,495,758	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
108	Banpu Renewable Singapore Pte. Ltd.	Investment in renewable energy business	N/A	9,760,029,719.80 JPY 55,987,676.69 USD	9,760,029,719 55,987,675	No par value*	100.00% (held by Banpu NEXT Co., Ltd.)	8 Marina Boulevard, #05-02 Marina Bay Financial Centre, Singapore 018981	65 6338 1888
109	BRE Singapore Pte. Ltd.	Investment in renewable energy business	N/A	21,320,001 USD	21,320,001	No par value*	100.00% (held by Banpu NEXT Co., Ltd.)	8 Marina Boulevard, #05-02 Marina Bay Financial Centre, Singapore 018981	65 6338 1888
110	Banpu Innovation & Ventures (Singapore) Pte. Ltd.	Research and development in disruptive technology	N/A	3,000,000 USD	3,000,000	No par value*	100.00% (held by Banpu Innovation & Ventures Co., Ltd.)	8 Marina Boulevard, #05-02 Marina Bay Financial Centre, Singapore 018981	65 6338 1888
Mauritius									
111	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
112	BP Overseas Development Co., Ltd.	Investment in coal mining	515,533,002 USD	515,533,002 USD	515,533,002	1	100.00% (held by Banpu Public Co., Ltd.)	4 th Floor, Ebene Skies, Rue de L'Institut, Ebene, Republic of Mauritius	230 404 8000
113	BPIN Investment Co., Ltd.	Investment in renewable energy	212,497,600 USD	212,497,600 USD	212,497,600	1	100.00% (held by Banpu NEXT Co., Ltd.)	4 th Floor, Ebene Skies, Rue de L'Institut, Ebene, Republic of Mauritius	230 404 8000
114	Banpu Power International Ltd.	Investment in power business	85,050,000 USD	85,050,000 USD	85,050,000	1	100.00% (held by Banpu Power Public Company Limited)	4 th Floor, Ebene Skies, Rue de L'Institut, Ebene, Republic of Mauritius	230 404 8000
British Virgin Islands									
115	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
Cayman Islands									
116	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

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Japan								
117 Aizu Land Solar G.K.	Land owner of solar project	N/A	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
118 Banpu Power Trading G.K.	Energy Trading	N/A	100,000,000 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
119 Banpu Japan K.K.	Investment in renewable energy business	N/A	83,500,000 JPY	13,700	No par value*	100.00% (held by Banpu NEXT Co., Ltd.)	Kasumigaseki Building, 33 rd Floor, 3-2-5, Kasumigaseki, Chiyoda-ku, Tokyo, Japan 100-6033	81 3 6205 4665
United States of America								
120 Banpu North America Corporation	Investment in oil and gas business	938,000,100 USD	938,000,100 USD	938,000,100	1	"100.00% (held by BOG Co., Ltd.)"	2711 Centerville Road, Suite 400, Wilmington, Delaware 19808, U.S.A.	1 302 654 7584
121 BKV Corporation	Investment in oil and gas business	3,000,000,000 USD	1,170,840,000 USD	117,084,000	0.01	96.30% (held by Banpu North America Corporation)	1200 17 th Street, Suite 2100, Denver, Colorado 80202, U.S.A.	1 720 375 9680
122 Kalnin Venture LLP	Investment in oil and gas business	N/A	18,576,245 USD	N/A	No par value per share*	100.00% (held by BKV Corporation)	1200 17 th Street, Suite 2100, Denver, Colorado 80202, U.S.A.	1 720 375 9680
123 BKV Oil & Gas Capital Partners, L.P.	Investment in oil and gas business	N/A	228,906,976 USD	N/A	No par value per share*	100.00% (held by BKV Corporation)	1200 17 th Street, Suite 2100, Denver, Colorado 80202, U.S.A.	1 720 375 9680
124 BKV Chaffee Corners, LLC	Investment in oil and gas business	N/A	109,529,841 USD	N/A	No par value per share*	100.00% (held by BKV Oil & Gas Capital Partners, L.P.)	1200 17 th Street, Suite 2100, Denver, Colorado 80202, U.S.A.	1 720 375 9680
125 BKV Chelsea, LLC	Investment in oil and gas business	N/A	205,285,594 USD	N/A	No par value per share*	100.00% (held by BKV Oil & Gas Capital Partners, L.P.)	1200 17 th Street, Suite 2100, Denver, Colorado 80202, U.S.A.	1 720 375 9680
126 BKV Operating, LLC	Investment in oil and gas business	N/A	195,541,343 USD	N/A	No par value per share*	100.00% (held by BKV Oil & Gas Capital Partners, L.P.)	1200 17 th Street, Suite 2100, Denver, Colorado 80202, U.S.A.	1 720 375 9680
127 BKV Barnett, LLC	Investment in oil and gas business	N/A	406,000,000 USD	N/A	No par value per share*	100.00% (held by BKV Oil & Gas Capital Partners, L.P.)	1200 17 th Street, Suite 2100, Denver, Colorado 80202, U.S.A.	1 720 375 9680
128 Banpu Innovation & Ventures LLC	Research and development in disruptive technology	1,000,000 USD	1,000,000 USD	N/A	No par value*	100.00% (held by Banpu Innovation & Ventures (Singapore) Pte. Ltd.)	1150 North Market Street, Suite 1300, Wilmington, Delaware 19801, U.S.A.	1 302 427 7650

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Vietnam								
129 BPP Vinh Chau Wind Power LLC	Wind power production, power transmission and distribution	427,395,900,000 VND	427,395,900,000 VND	N/A	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
130 Banpu Vietnam LLC	Management consulting services (Except for financial, accounting and legal consultancy)	23,000,000,000 VND	23,000,000,000 VND	N/A	No par value*	100.00% (held by BRE Singapore Pte. Ltd.)	8 th Floor, Friendship Tower, 31 Le Duan Street, Ben Nghe Ward, District 1, Ho Chi Minh City, Vietnam	849 0748 4047
Associated Companies								
Australia								
131 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
Japan								
132 FOMM Corporation	Planning, developing, manufacturing, and selling of compact electric vehicle	N/A	3,505,170,250 JPY	2,046,635	No par value*	21.45% (held by Banpu NEXT Co., Ltd.)	7-7 Shinkawasaki, Saiwai-ku, Kawasaki-shi, Kanagawa 212-0032, Japan	81 4 4200 4020
133 Global Engineering Co., Ltd.	Electricity sales and resource aggregator of virtual power plant	N/A	304,000,000 JPY	3,620,000	No par value*	19.90% (held by Banpu Renewable Singapore Pte. Ltd.)	Nishiko Living Kashii 2 nd Floor, 1-1-1, Kashii, Higashi-ku, Fukuoka City, Fukuoka Prefecture, Japan 813-0011	81 92 692 7547
Singapore								
134 Durapower Holdings 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								
135 Urban Mobility Tech Co., Ltd.	Electric vehicle business	1,442,120 THB	1,442,120 THB	144,212	10	30.66% Preference Shares (held by Banpu NEXT Co., Ltd.)	256 Soi Soonvijai, Rama IX Soi 17 Road, Bangkapi, Huaykwang, Bangkok 10310, Thailand	668 6887 4796

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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
Joint Ventures								
Indonesia								
136 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
China								
137 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.)	Haojiazhuang Town, Changzhi County, Changzhi City, Shanxi Province, P.R. China	8610 5820 3663
138 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.)	Sikuang Industrial Park, Hebi, Hebei City, Henan Province, P.R. China	8639 2291 7401-2
139 Shanxi Lu Guang Power Co., Ltd.	Power generating and sales	1,745,818,000 CNY	1,500,000,000 CNY	N/A	N/A	30.00% (held by Banpu Power Investment Co., Ltd.)	Songcun Town, Zhangzi County, Changzhi City, Shanxi Province, P.R. China	86355 8580511
Japan								
140 Hokkaido Solar Estate G.K.	Land owner of solar project	N/A	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
141 Digital Energy Solutions Corporation	Electricity sales and management	N/A	50,000,000 JPY	5,000	No par value*	49.00% (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								
142 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 Public Company Limited)	NNN Building 4 th Floor, Room No.D5 Bourichan Road, Phonsinouane Village, Sisattanak District, Vientiane Capital, Lao PDR	856 21 219381
143 Phu Fai Mining Co., Ltd.	Mining concession	50,000 USD	50,000 USD	5,000	10	37.50% (held by Banpu Power Public Company Limited)	NNN Building 4 th Floor, Room No.D5 Bourichan Road, Phonsinouane Village, Sisattanak District, Vientiane Capital, Lao PDR	856 21 219381

* 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
Singapore								
144 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
145 Aizu Energy Pte. Ltd.	Investment in renewable energy business	N/A	2,271,979,544.11 USD 17,630,952.87 JPY	2,271,979,543 17,630,949	No par value*	75.00% (held by Banpu NEXT Co., Ltd.)	8 Marina Boulevard, #05-02 Marina Bay Financial Centre, Singapore 018981	65 6338 1888
146 Sunseap Group Pte. Ltd.	Investment in renewable energy business	N/A	13,496,103.63 SGD 323,031,364.05 SGD	1,192,407 2,366,387	No par value*	48.63% (held by BPIN Investment Co., Ltd.)	2 Boon Leat Terrace, #04-03/04 Harbourside Building 2, Singapore 119844	65 6816 1000
Thailand								
147 BLCP Power Ltd.	Power generation and sales	12,010,000,000 THB	12,010,000,000 THB	120,100,000	100	50.00% (held by Banpu Coal Power Ltd.)	9 I-8 Road, Map Ta Phut Industrial Estate, Muang District, Rayong, Thailand	6638 925 100
148 G.E.P.P. SA-ARD Co., Ltd.	Integrated waste management platform	2,666,700 THB	2,666,700 THB	26,667	100	25.00% (held by Banpu NEXT Co., Ltd.)	559/186 Nonsi Road, Chong Nonsi Subdistrict, Yannawa District, Bangkok, Thailand	668 4360 2928

* Under Corporate Law



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