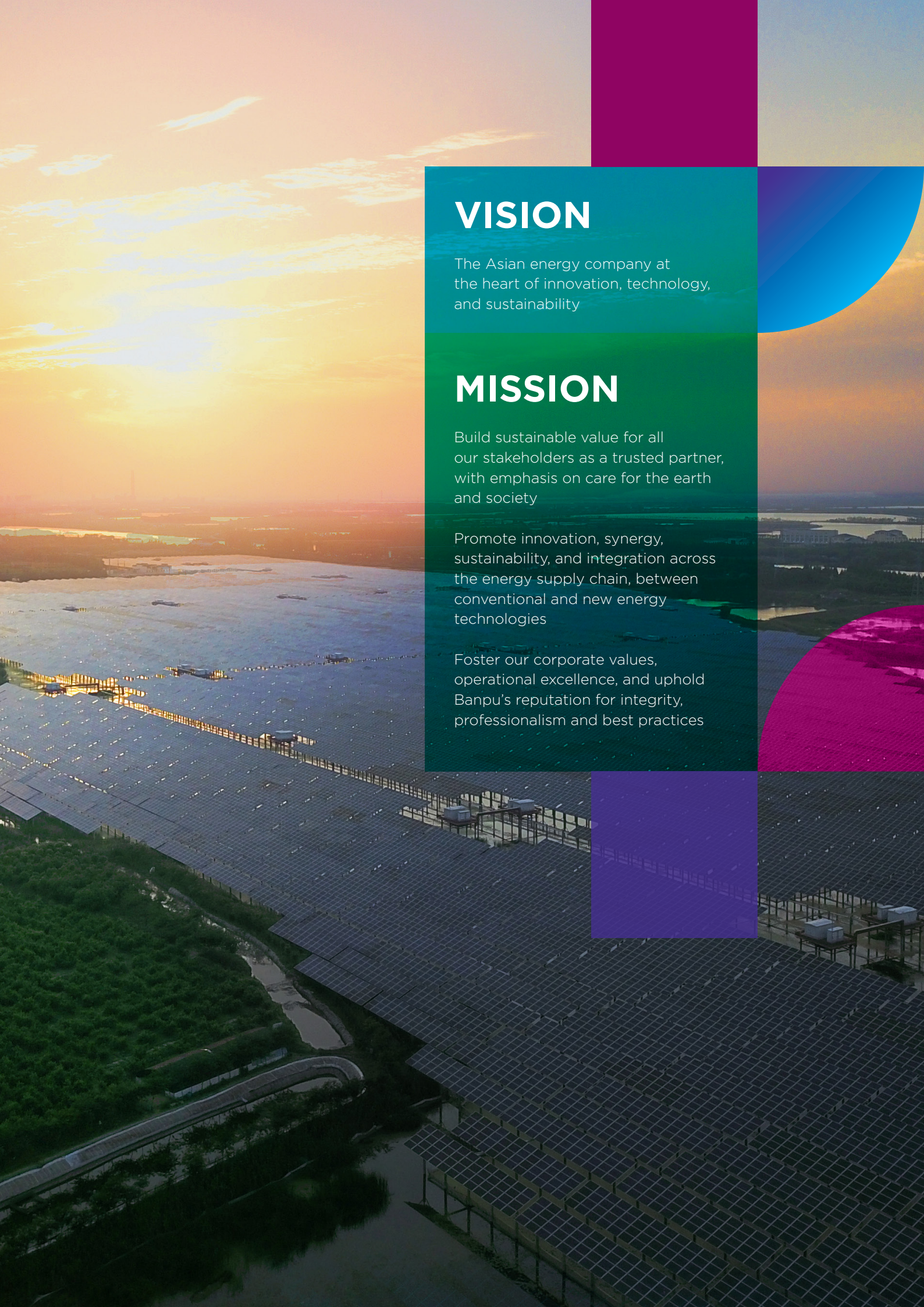
BANPU

SUSTAINABILITY REPORT 2020

SMARTER ENERGY FOR SUSTAINABILITY

CONTENTS



VISION

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

MISSION

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

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

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

MESSAGE FROM CEO

In 2020, we were faced with the "Never Normal" era that impacted economics globally. Therefore, it is essential that we quickly build business resilience to ensure that we can move forward on a strong foundation. Under this situation, we continue to operate business under the Greener & Smarter strategy and commit to delivering "Smarter Energy for Sustainability" for all our stakeholders with priority in 3 areas:

- **Sustainable Partnership:** Under "Greener & Smarter" strategy, we have therefore partnered with stakeholders to drive business in a sustainable manner. As a member of the United Nations Global Compact (UNGC), we are committed to the Ten Principles of the UNGC. We also participated in the "UN Global Compact Leaders Summit 2020" to share our practices during the Covid-19 pandemic.
- **Sustainable People:** We have developed a sense of obligation to prepare our staff in adopting flexibility, adaptability, mobility, and positive creativity; and to embrace professionalism among our people under the corporate culture "Banpu Heart" which comprises of Passionate, Innovative, and Committed. This corporate culture strengthens the Company's resilience that help the Company goes through the crisis with no panic for any unexpected situation.
- **Sustainable Energy Solution:** Under the operations of "Banpu NEXT", we have continued to deliver solutions that meet customers' needs. This year, we introduced Thailand's first electric passenger boats, "Banpu NEXT e-Ferry" to deliver a next-level Green Tourism experience. The Company also promotes Banpu NEXT EV Car Sharing, the 24/7 flagship station that features the complete pick-up and return service as well as charging station. Currently, the Company is developing a "Solar Floating" project with a total capacity of 16 megawatts, which will be the largest privately-owned development in Thailand.

We encourage all stakeholders to recognize the importance of Environmental, Social, and Governance (ESG) principles and follow the path of growing sustainability together. This year, we have set the long-term ESG targets towards 2025 and re-aligned the targets with the UN Sustainable Development Goals (SDGs) to ensure sustainable management in 7 SDGs such as Goal 7 Affordable and clean energy, Goal 13 Climate action, and Goal 15 Life on land.

We are transitioning to a sustainable business. With our determination and efforts to conduct business according to the ESG principles, we have conducted ESG risk assessment covering climate change, water, and human rights issues to determine the potential risks and will extend to cover more key ESG issues. In addition, we are proud of being a supporter for the Task Force on Climate-related Financial Disclosures (TCFD) and we are committed to publishing performance report following the TCFD recommendation in 2023.

In 2020, we have successfully achieved our ESG performance, with no fatalities and no significant environmental incidents. Although we have not achieved our greenhouse gas (GHG) emissions targets due to the gassy mine situation, various initiatives have been undergoing in recent years. To ensure reliability of ESG information for stakeholders, this sustainability report was verified by an external party for the fourth consecutive year, covering energy consumption, GHG emissions, and occupational health and safety. Furthermore, for this year, we have extended the verification scope in thermal power and renewable power businesses in China to cover water, air emissions, and waste data. We also plan to continue broadening the assurance scope of our sustainability report in terms of topics and business units in the future.

With accomplishment of these commitments and achievements in 2020, we have continued to be nationally and internationally recognized as a leader in sustainability:

- Maintained as a member of Dow Jones Sustainability Indices (DJSI) for the seventh year consecutively
- Recognized as Industry Leader in the Coal & Consumable Fuels Industry by S&P Global
- Rated A (on a scale of AAA-CCC) in the MSCI ESG Ratings assessment
- Listed on the Thailand Sustainability Investment (THSI) for the sixth consecutive year
- Achieved Excellent CG Scoring in the Corporate Governance Report of Thai Listed Companies 2020

Finally, on behalf of Banpu management team and the Sustainability Committee, I would like to express our sincere gratitude to all stakeholders for their continuous trust and support. I believe that our strong Sustainability Policy and corporate culture will drive the Company towards "Smarter Energy for Sustainability."

Somruedee Chaimongkol
Chief Executive Officer and
Chairman of the Sustainability Committee

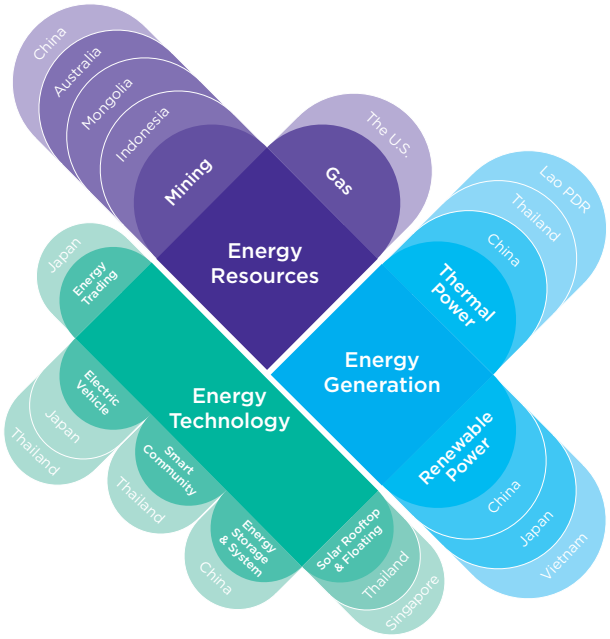
ABOUT THIS REPORT

Banpu published a sustainability report annually, which contains a comprehensive overview of the Company's sustainability strategies, management approach, and sustainability performance of the topics related to governance, environmental and social issues that are most material to its stakeholders and business. This report has been prepared in accordance with the GRI Standards: Core option with additional indicators from the G4 mining and metals sector disclosures and the G4 electric utilities sector disclosures. This report also demonstrates the linkage between Banpu's sustainability performance and the Sustainable Development Goals (SDGs) and the United Nations Global Compact (UNGC).

REPORTING BOUNDARY

This report covers performance from 1st January to 31st December 2020 in the business entities in which Banpu holds a greater than 50% of total shares and has management control. These entities include mining business in Indonesia, Australia and Mongolia, thermal power business in China, renewable power business in China and Japan, solar rooftop business in Thailand, as well as the head office and related business in Thailand, and the offices in Singapore and Vietnam. This report also extended the boundary to cover 2 of solar power plants in Japan, which began commercial operation in 2020.

This report excludes performance of the business entities that Banpu holds less than 50% either direct or indirect investment and does not directly participate in their management, in other words only supervision through their Board of Directors. Such entities include mining business in China, thermal power business in Thailand and Lao PDR, and solar rooftop business in Singapore. More information on each business is disclosed on page 8-13.



REPORTING CONTENT

The content of this report covers 14 material topics and 16 relevant topics, namely eleven governance topics, ten environmental topics and nine social topics. The material topics have been re-validated with some difference in material level comparing to the previous year.

ASSURANCE

This report was assured by an external party that it was prepared in accordance with the GRI Standards: Core option. The scope of assurance is as follows:

- Energy and GHG emissions data of mining business in Indonesia and Australia, thermal power business in China, renewable power business in China and Japan, and solar rooftop business in Thailand.
- Occupational health and safety data of mining business in Indonesia, Australia, and Mongolia, thermal power business in China, renewable power business in China and Japan, solar rooftop business in Thailand, and the head office as well as related business in Thailand.
- Water, Air emissions, Waste data of thermal power business in China.

More details on the assurance scope are available on page 140-141. The Company is committed to broadening the assurance scope, both in terms of topics and business units.

CONTACT DETAILS

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OUR BUSINESS

Energy Resources

Gas

Production Capacity

NOW 2020		NEXT 2025
700 MMcfed	›››	700 MMcfed

The shale gas production is based in the Marcellus shale in Pennsylvania and Barnett shale* in Texas, United States of America. All gas produced is transferred via national gas pipeline network to serve domestic customers.

* Purchase and sale agreement was completed in October 2020.

Mining

Production Volume

NOW 2020		NEXT 2025
39 Mt	›››	40 Mt

The Company operates both open-pit and underground mining in Indonesia, Australia, and China. Our high-quality coal is sold primarily to industrial customers and coal-fired power plants in Asia and Europe.

Energy Generation

Renewable Power

Production Capacity

NOW 2020		NEXT 2025
657 MW	›››	1,100 MW

The Company provides electricity generated from solar and wind to serve clean energy markets across Asia-Pacific. Our production operates in China, Japan, and Vietnam, while some are under project development or construction.

Thermal Power

Production Capacity

NOW 2020		NEXT 2025
2,403 MW	›››	4,500 MW

The thermal power plant provides both electricity and heat to serve industrial sectors as well as household consumers in China, Thailand and Lao PDR who require reliable energy with high efficiency low emissions (HELE) technology.

Energy Technology

Energy Trading

Electricity Sale

NOW 2020		NEXT 2025
280 GWh	›››	1,000 GWh

The Company provides the electricity supply through a digital platform. The current investment is in Japan.

Electric Vehicle

	NOW 2020		NEXT 2025
Number of Ride-Hailing Passengers	2,500 Passengers/Day	›››	10,000 Passengers/Day
EV under Fleet Management	100 EVs	›››	5,500 EVs
E-Ferry Sold	1 e-Ferry Sold	›››	100 e-Ferries Sold

The Company provides integrated EV fleet management with "Mobility as a Service" concept offering one-stop service solutions to meet specific needs of each customer, including consultancy, market evaluation, EV fleet, and after-sales support.

Smart Community

Number of Projects

NOW 2020		NEXT 2025
5 Projects	›››	9 Projects

The Company offers state-of-the-art energy technology solutions for a well-developed ecosystem of clean energy and energy efficiency based on each customer's requirement. The solutions include smart poles, solar kiosks, and EV charging stations.

Energy Storage & System

Lithium-ion Battery Production Capacity

NOW 2020		NEXT 2025
1.0 GWh	›››	3.0 GWh

The Company provides energy storage and power supply solutions with battery-manufacturing facilities in China for industrial sector as well as battery for electric vehicles.

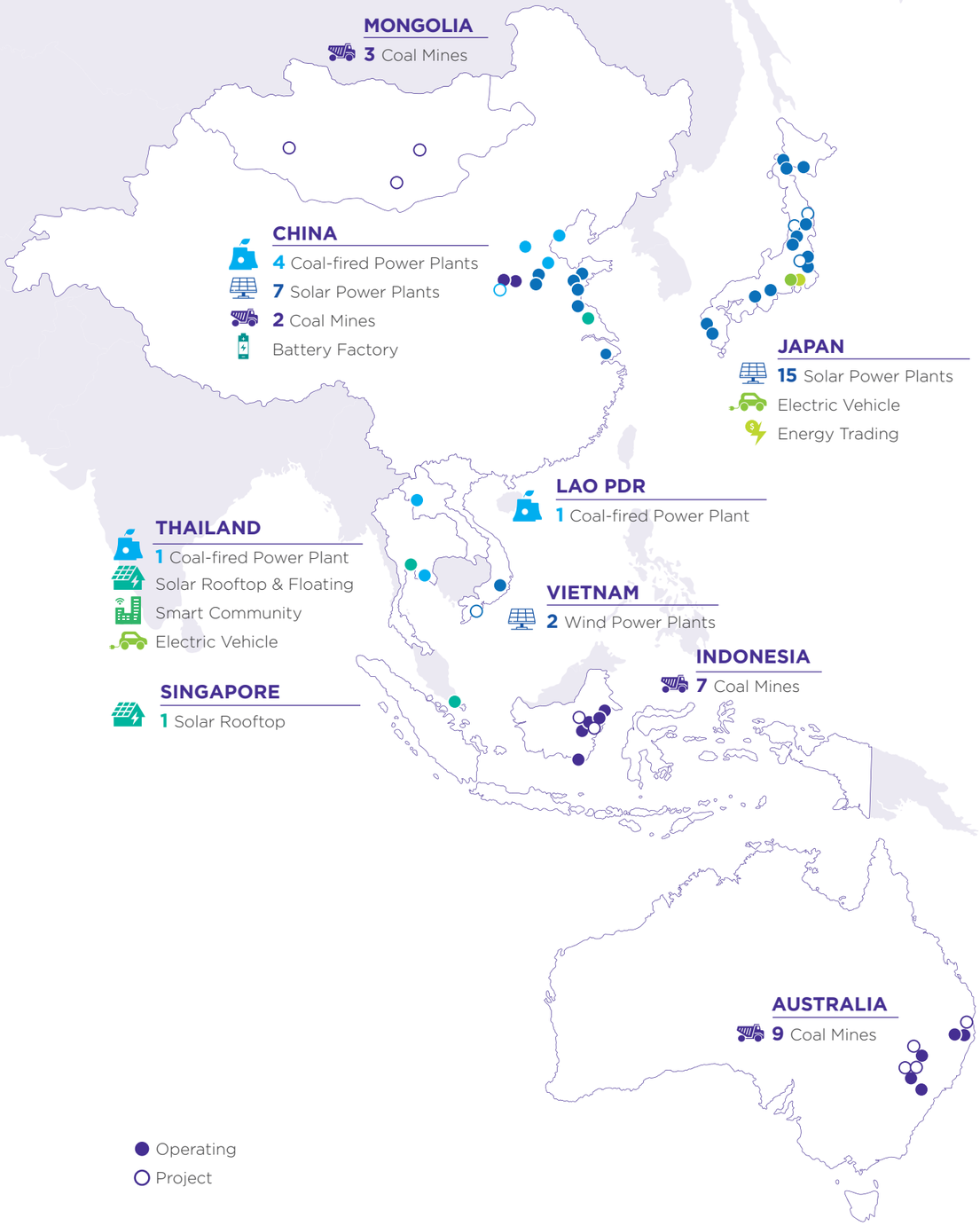
Solar Rooftop & Floating

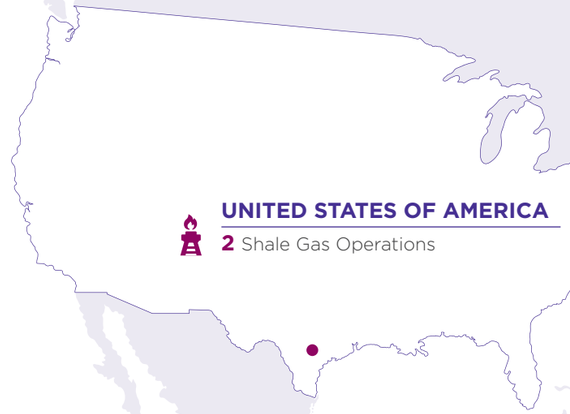
Production Capacity

NOW 2020		NEXT 2025
249 MW	›››	500 MW

The Company provides solar rooftop and solar floating services in Thailand and Singapore, serving retail and industrial customers in Southeast Asia who require the integration of clean energy and smart technology.

MAP OF OPERATIONS





- Mining
- Gas
- Thermal Power
- Renewable Power
- Solar Rooftop & Floating
- Energy Storage & System
- Smart Community
- Electric Vehicle
- Energy Trading

LAO PDR

Banpu invests in Hongsa Power Plant (HPC) through BPP, a mine-mouth power plant with a capacity of 1,878 MW, in Xayaburi province. HPC is a joint venture between BPP, RATCH Group Public Company Limited, and Lao Holding State Enterprise (LHSE), a state-owned enterprise of Lao PDR.

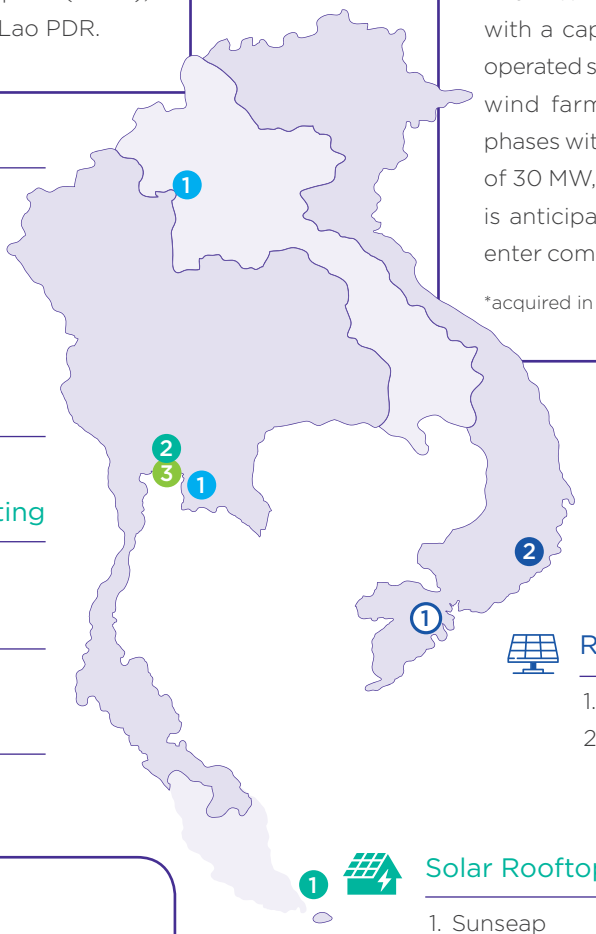
Thermal Power

1. HPC

VIETNAM

Banpu invests in the renewable power business through Banpu NEXT with a capacity of 117.6 MW from 2 wind power plants, namely El Wind Mui Dinh and Vinh Chau. The El Wind Mui Dinh* wind farm, with a capacity of 37.6 MW, has operated since 2019. The Vin Chau wind farm has 3 development phases with respective capacities of 30 MW, 30 MW, and 20 MW. It is anticipated that the plant will enter commercial service in 2021.

*acquired in July 2020



Thermal Power

1. BLCP

Solar Rooftop & Floating

2. Banpu NEXT

Smart Community

2. Banpu NEXT

Electric Vehicle

2. Banpu NEXT
3. Urban Mobility Tech

Renewable Power

1. Vinh Chau
2. El Wind Mui Dinh

Solar Rooftop

1. Sunseap

THAILAND

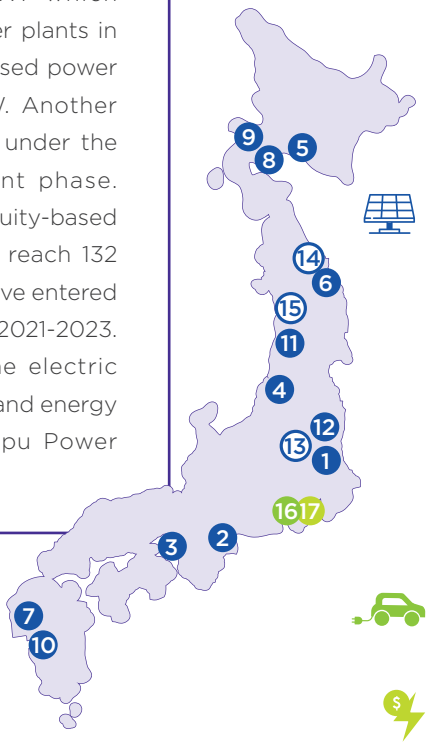
Banpu invests in the energy technology business through Banpu NEXT. The main business under its operations includes solar rooftop & floating, energy storage & system, smart community, electric vehicle, and energy trading. Banpu also invests in BLCP through Banpu Power Public Company Limited (BPP). BLCP is a joint venture between BPP and Electricity Generating Public Company Limited, operating a 1,434 MW coal-fired power plant in the Map Ta Phut Industrial Estate, the Eastern Seaboard in Rayong province.

SINGAPORE

Banpu invests in the solar rooftop business through Banpu NEXT, which has an investment in Sunseap Group Pte. Ltd. Sunseap Group plays a major role in providing solar rooftop solutions, with a share of the total production capacity amounting to 353.9 MW.

JAPAN

Banpu invests in the renewable power business through Banpu NEXT which currently operates 12 solar power plants in Japan, offering a total equity-based power generation capacity of 88 MW. Another 3 further projects are currently under the construction and development phase. It is anticipated that the total equity-based power generation capacity will reach 132 MW when all of these projects have entered commercial operation between 2021-2023. Moreover, Banpu invests in the electric vehicle business through FOMM and energy trading business through Banpu Power Trading G.K.



Renewable Power

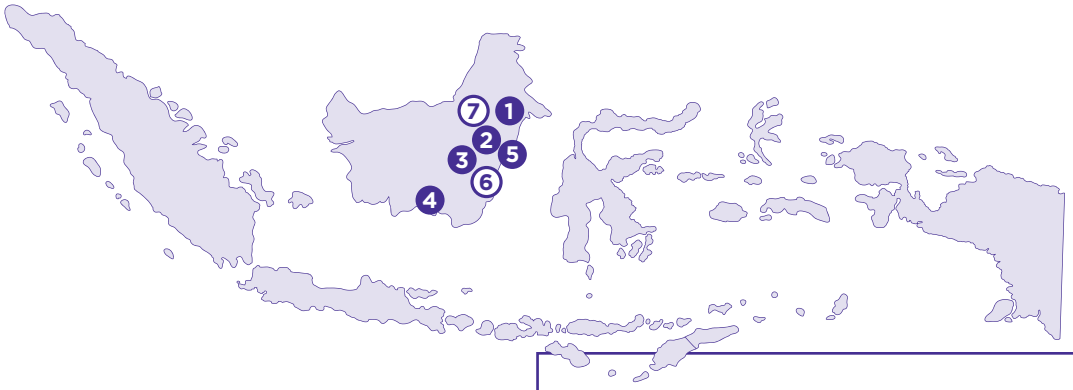
1. Olympia
2. Hino
3. Awaji
4. Nari Aizu
5. Mukawa
6. Kurokawa
7. Tenzan
8. Muroran 1
9. Muroran 2
10. Takeo2
11. Yamagata
12. Yabuki
13. Shirakawa
14. Kesennuma
15. Yamagata Iide

Electric Vehicle

16. FOMM

Energy Trading

17. Banpu Power Trading G.K.



Mining

1. Indominco
2. Trubaindo
3. Bharinto
4. Jorong
5. Kitadin-Embalut
6. Tepian Indah Sukses
7. Nusa Persana Resources

INDONESIA

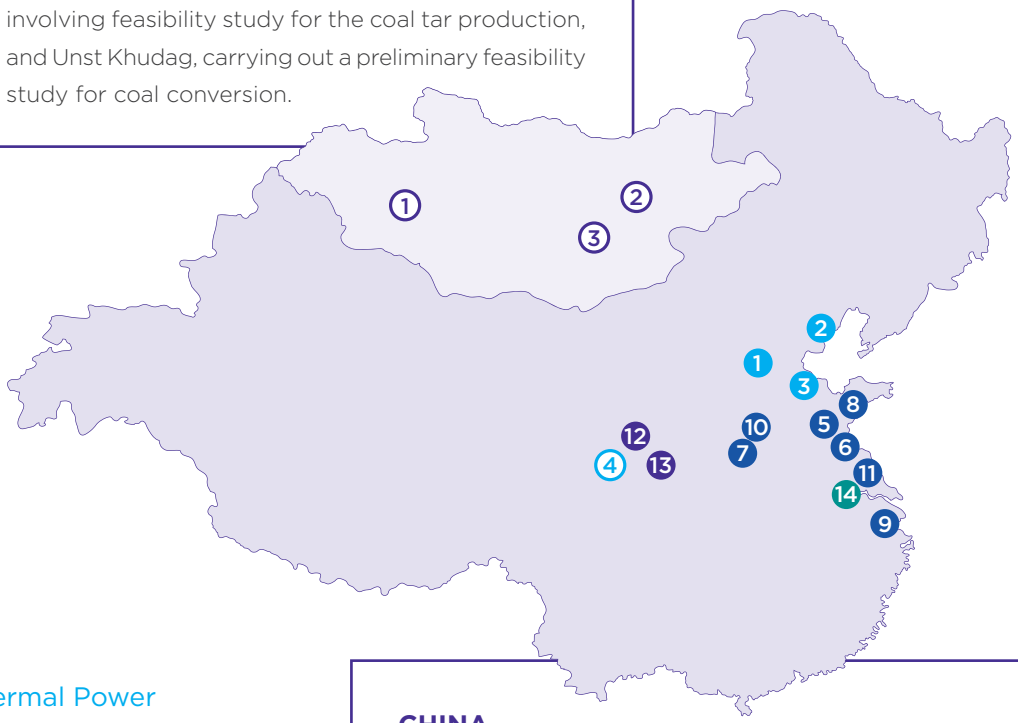
Banpu invests in the mining business through PT. Indo Tambangraya Megah Tbk (ITM), a company listed on the Indonesian Stock Exchange. ITM operates 5 open-pit mines, which produced 18.4 million tonnes of coal in 2020 to serve both domestic and overseas markets. Exports are handled through the Bontang Terminal, which has a current annual capacity of around 21.2 million tonnes. Banpu has recently undergone significant expansion in 2 mining projects set to become operational in the near future.

MONGOLIA

Banpu invests in Hunnu Coal Pty Ltd., a company specializing in coal exploration and mine development in Mongolia. The Company is currently developing 3 projects: Altai Nuurs, receiving the mineral resources and petroleum authority of Mongolia approval of feasibility study of a coal-fired power plant, Tsant Uul, involving feasibility study for the coal tar production, and Unst Khudag, carrying out a preliminary feasibility study for coal conversion.

Mining

1. Altai Nuurs
2. Unst Khudag
3. Tsant Uul



Thermal Power

1. Zhengding
2. Luannan
3. Zouping
4. Shanxi Lu Guang

Renewable Power

5. Jinshan
6. Huineng
7. Haoyuan
8. Hui'en
9. Deyuan
10. Xingyu
11. Jixin

Mining

12. Gaohe
13. Hebi

Energy Storage & System

14. Durapower

CHINA

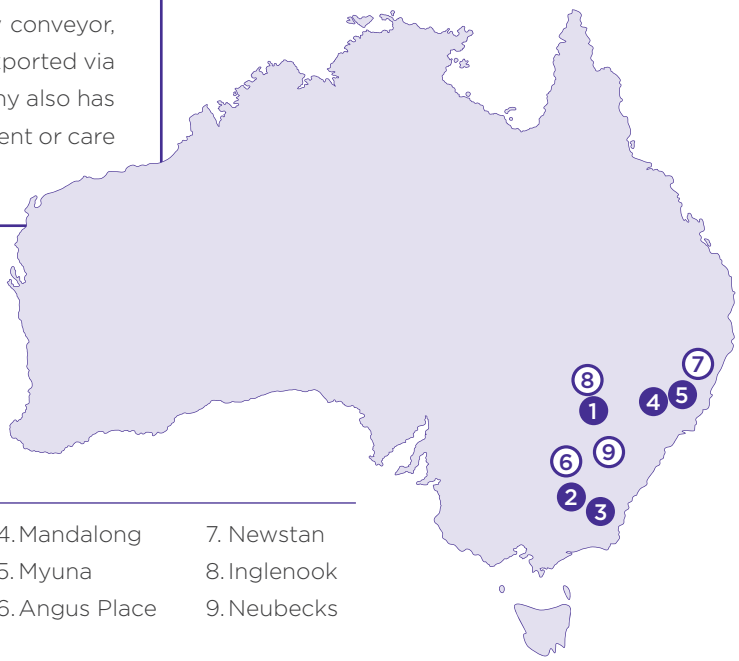
Banpu invests in the energy generation business through BPP. There are 3 Combined Heat and Power (CHP) plants in northern China, with a total equity-based power generation capacity of 539 MW, and a coal-fired power plant, Shanxi Lu Guang (SLG). SLG completed construction and set of start-up trial operation. It will be ready to commission and supply heat in the 1st quarter of 2021 with a total equity-based power generation capacity of 396 MW.

Beside, Banpu has made investments in the renewable power business through Banpu NEXT in 7 solar power plants, providing a total equity-based power generation capacity of 177.3 MW and in the energy technology business in Durapower Holdings Pte., Ltd. Durapower provides expertise in the design, production, and installation of lithium-ion batteries for the automotive industry and energy storage system with an annual battery production capacity of 1.0 GWh.

Banpu also invests in the mining business through BP Overseas Development Co., Ltd. and Banpu Mineral Co., Ltd. There are 2 underground mines in Shanxi and Henan provinces, offering a total production of 10.2 million tonnes in 2020.

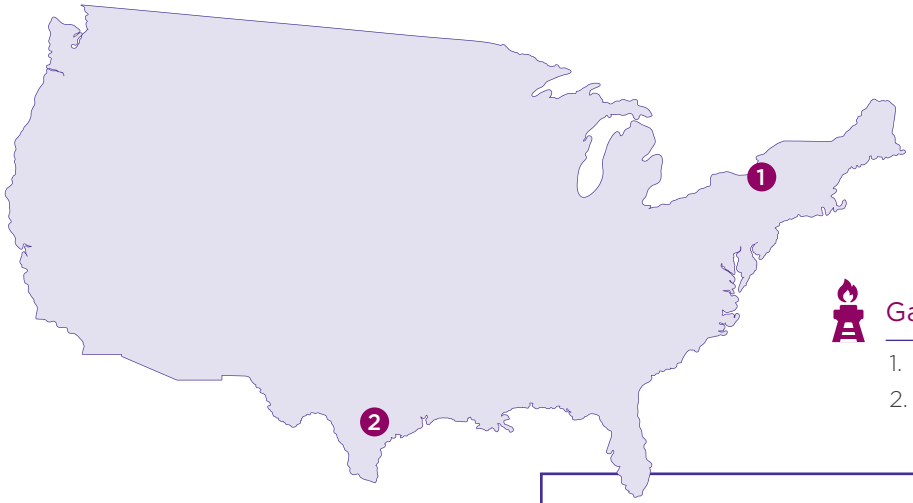
AUSTRALIA

Banpu invests in the mining business through Centennial Coal Co., Ltd., which is the operator of 5 underground mines producing 12.4 million tonnes of coal in 2020. The coal is distributed by conveyor, truck and rail to domestic customers or exported via Kembla and Newcastle ports. The Company also has 4 mine projects currently under development or care & maintenance phases.



Mining

1. Airly
2. Springvale
3. Clarence
4. Mandalong
5. Myuna
6. Angus Place
7. Newstan
8. Inglenook
9. Neubecks



Gas

1. Marcellus
2. Barnett

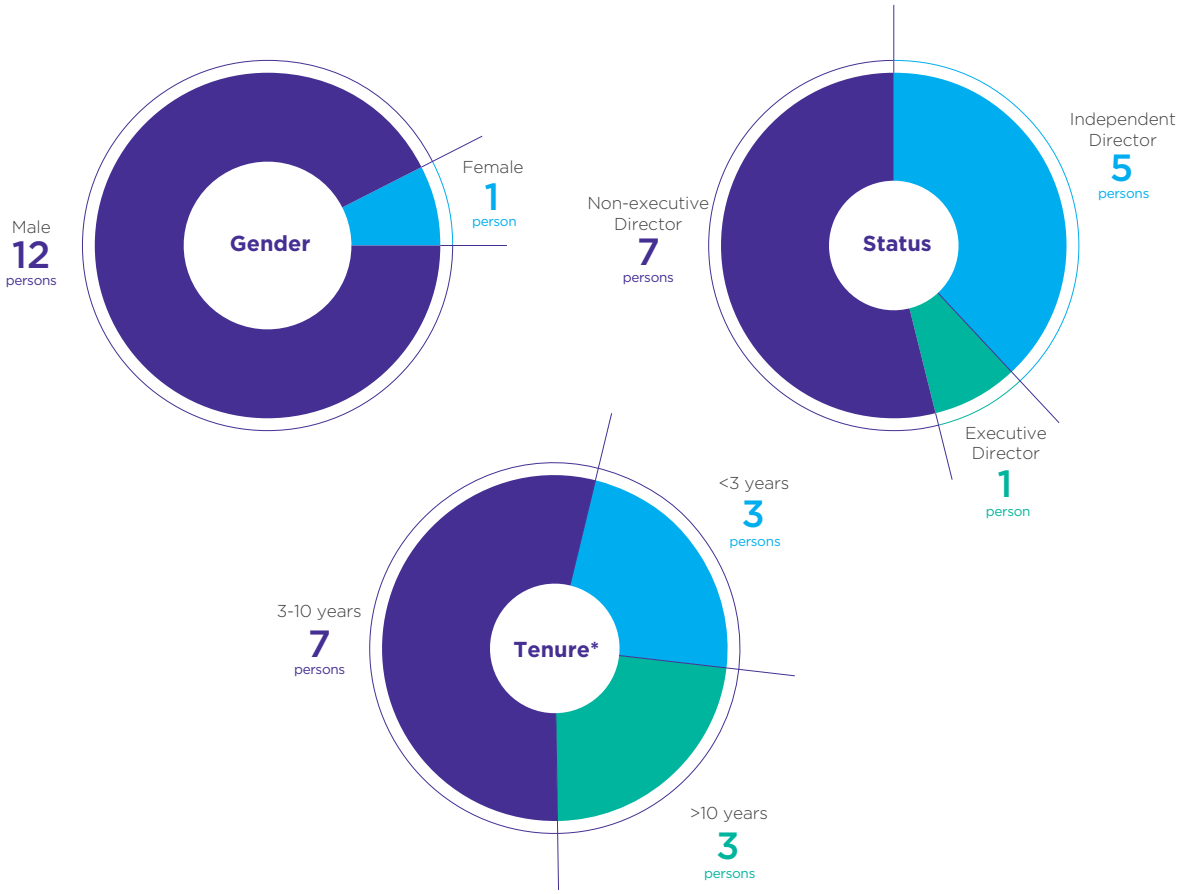
UNITED STATES OF AMERICA

Banpu invests in the gas business through Banpu North America Corporation, which operates a shale gas production in the Marcellus shale in northeastern Pennsylvania and Barnett shale* in Texas. The total equity-based production currently exceeds 700 MMcfed. The gas produced is sold exclusively to the domestic market via the national gas pipeline network.

*Purchase and sale agreement was completed in October 2020.

MANAGEMENT STRUCTURE

The Board of Directors of Banpu Public Company Limited is a one-tier system with 3 sub-committees. The Board of Directors is responsible for ensuring that the Company's business operations are compliant with relevant laws, the Company's objectives and regulations, and shareholder resolutions. The Board of Directors' Practice has been formulated and regularly reviewed to ensure good governance.



*Average tenure 12.3 years

	Member	Role & Responsibility
Corporate Governance and Nomination Committee	1 Independent Director 3 Non-executive Directors	• Review and update the Corporate Governance Policy (CG Policy) and Code of Conduct to ensure their appropriation and adequacy • Monitor compliance with the CG policy and Code of Conduct through CG Complaint Channel • Review the Board composition and prepare a succession plan • Nominate Directors, CEO and senior executives
Audit Committee	3 Independent Directors	• Review the financial reports, the process of internal controls, internal audits, risk management, and extent of the Company's compliance with regulatory requirements • Review the connected transactions or transactions that may lead to conflicts of interests
Compensation Committee	3 Independent Directors 1 Non-executive Director	• Review remuneration, compensation, and benefits of the Board of Directors, sub-committees, and the CEO • Review compensation structure and employee remuneration

BOARD OF DIRECTORS NOMINATION

The Corporate Governance and Nomination Committee is responsible for setting nomination criteria and reviewing the qualifications of the directors. In general, the tenure of Independent Board Directors must not exceed 9 years or 3 consecutive terms and Directors must not hold more than 5 external directorships in other listed companies. Moreover, a number of aspects are taken into consideration when each candidate is assessed, including independence, gender, nationality, religion, age, experience, skill and expertise. The attributes of the candidates are assessed using the Board Skills Matrix to ensure benefits to the Company and expectations of the stakeholders. After the screening process, the Corporate Governance and Nomination Committee will nominate the candidate for the Board's approval to propose the candidate director to be elected by shareholder's approval in the Annual General Meeting.

BOARD SKILLS MATRIX

Skill	No. of Director	
Information Technology	● ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○	1 Person
Economic	● ● ● ● ● ○ ○ ○ ○ ○ ○ ○ ○	5 Persons
Mining	● ● ● ● ○ ○ ○ ○ ○ ○ ○ ○ ○	4 Persons
Power	● ● ● ● ● ○ ○ ○ ○ ○ ○ ○ ○	5 Persons
Management	● ● ● ● ● ● ● ● ● ● ● ● ●	13 Persons
Business Relation	● ● ● ● ● ● ● ● ● ● ● ● ●	13 Persons
Strategic/International	● ● ● ● ● ● ● ● ● ● ● ○ ○	11 Persons
Technical/Engineer	● ● ● ● ● ○ ○ ○ ○ ○ ○ ○ ○	5 Persons
Finance	● ● ● ● ● ○ ○ ○ ○ ○ ○ ○ ○	5 Persons
Marketing/Logistic	● ● ● ○ ○ ○ ○ ○ ○ ○ ○ ○ ○	3 Persons
Oil & Gas	● ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○	1 Person

BOARD OF DIRECTORS PERFORMANCE EVALUATION

The Corporate Governance and Nomination Committee is responsible for reviewing methodology and criteria for the Board of Directors' performance evaluation. Annually, the Board of Directors performs the performance self-assessment, which covers the Board as a whole, sub-committees and individual director self-assessment. Assessment results and suggestions are discussed for improvement to ensure good governance and benefit to the Company and shareholders.

STAKEHOLDER ENGAGEMENT

The analysis of stakeholder interest is carried out through the corporate management standard, which was developed based on the international AA1000 Stakeholder Engagement Standard (AA1000SES) to assess issues that are of importance to stakeholders. Three principles – inclusivity, materiality, and responsiveness – underpin the stakeholder engagement framework. Each business unit is responsible for identifying and analyzing stakeholders related to its business operations. Results from each business unit are collected and analyzed at the corporate level under the supervision of the Sustainability Committee.

PROCESS OF STAKEHOLDER ANALYSIS

1

IDENTIFY STAKEHOLDERS

By considering factors including dependency, responsibility, influence, and other factors as appropriate

2

DEFINE LEVELS OF THE COMPANY'S IMPACTS ON STAKEHOLDERS

By considering the economic, social, and environmental impacts

3

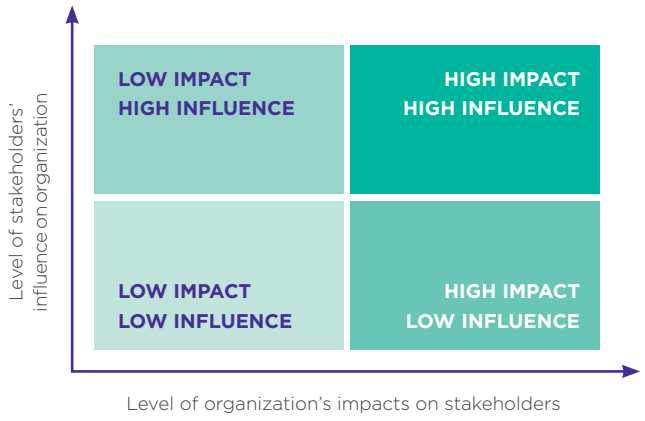
DEFINE LEVELS OF STAKEHOLDERS' INFLUENCE ON THE COMPANY

By considering influence in terms of finance, operations, regulations, reputation, and operational strategies

4

CATEGORIZE STAKEHOLDERS

By dividing stakeholders into four groups according to the levels of impact the Company has on the stakeholders, and stakeholders' influence on the Company



5

PRIORITIZE STAKEHOLDERS

With appropriate engagement approaches for each stakeholder group, for example interviews for high impact and high influence group

ENGAGEMENT METHOD AND STAKEHOLDER'S ISSUE

Stakeholder	Engagement Method	Stakeholder's Issue	Banpu's Sustainability Topic
Employee	• Communication between human resources department and employee • Employee involvement in committees • Compliant channel • "Banpu Heart" behavioral survey • Employee engagement survey • Town Hall Meeting	• Direction of the Company	• Challenge and Opportunity
		• Business ethics and responsible business practices	• Business Ethics
		• Happiness in the workplace • Reasonable wages and benefits • Career opportunities	• Employee Management
		• Capability development	• Human Capital Development
		• Safety in the workplace	• Occupational Health & Safety
Community	• Community Consultative Committee (CCC) • Community satisfaction survey • Compliant channel • Communication with community development officers • Public information on the website	• Social and environmental impact from the Company's activities	• Community Engagement • Air Emissions & Waste
		• Safety in life and residence	• Resettlement
		• Respect on human rights	• Human Rights • Indigenous Peoples
		• Community well-being and economic distribution	• Economic Distribution • Community Development
Customer	• Customer satisfaction survey • Compliant channel • Customer visit • Response the request for data disclosure • Report on annual maintenance plan and emergency drill • Inform consent for customer data use • Data security mechanism	• Quality and price of product • On-time product delivery	• Customer & Product Stewardship
		• Social and environmental impact from the use of product	• Customer & Product Stewardship • GHG Emissions
		• Availability of products and services	• Efficiency and Reliability of Power Plants
		• Personal data breaches • Use of customer data	• Data Privacy & Cybersecurity
Government	• Occasional visit • Support to governmental initiatives and activities • Response the request for data disclosure • Publication of annual report and sustainability report • Public information on the website	• Value creation for economy and society	• Sustainability Governance • Partnership
		• Business ethics • Data transparency and disclosure	• Business Ethics
		• Compliance with laws and regulations	• Environmental Compliance • Socioeconomic Compliance
		• Maximization of natural resource consumption	• Energy & Water
		• Supply chain management	• Supplier Management • Customer & Product Stewardship
		• Social and environmental impact from the Company's activities	• GHG Emissions • Water, Air Emissions & Waste • Biodiversity • Mine Closure
		• Driving SDGs into practices	• Banpu and SDGs • Banpu and UN Global Compact
Supplier	• Regular meeting with supplier • Data security mechanism	• Fair and transparent procurement process	• Business Ethics
		• Future opportunity for doing business with the Company	• Supplier Management
		• Personal data breaches	• Data Privacy & Cybersecurity

Stakeholder	Engagement Method	Stakeholder's Issue	Banpu's Sustainability Topic
Contractor	• Regular meeting with contractor • Annual mining contractor meeting	• Fair and transparent procurement process	• Business Ethics
		• Safety in the workplace	• Occupational Health and Safety
		• Reduction of energy consumption	• Energy
		• Future opportunity for doing business with the Company	• Supplier Management
Financial institution	• Analyst meeting • Publication of annual report and sustainability report	• Business transparency	• Business Ethics
		• Business growth and financial performance	• Performance Overview
Business partner	• Board meeting at subsidiaries and associated companies • Publication of annual report and sustainability report • Report on annual maintenance plan and emergency drill	• Business transparency	• Business Ethics
		• International reputation	• Awards & Recognitions
		• Business growth and financial performance	• Performance Overview
		• Business continuity	• Efficiency & Reliability of Power Plants
Shareholder	• Annual general meeting of shareholder • Publication of annual report and sustainability report • Compliant channel • Public information on the website	• Qualification of Board of Directors and managements	• Management Structure
		• Business transparency	• Business Ethics
		• Risk management	• Risk Management • Business Continuity Management
		• Research & development for operational excellence	• Digital Transformation
		• Business growth and financial performance	• Performance Overview
Investor	• Opportunity investment roadshow • Presentation on Opportunity Day organized by Stock Exchange of Thailand • Publication of annual report and sustainability report • Public information on the website	• Qualification of Board of Directors and Managements	• Management Structure
		• Business transparency	• Business Ethics
		• Value creation for economy, society and environment	• Sustainability Governance
		• Risk management	• Risk Management • Business Continuity Management
		• Business growth and financial performance	• Performance Overview
Media and NGOs	• Response the request for data disclosure • Fact sheet summary • Public information on the website	• Value creation for economy and society	• Sustainability Governance
		• Business transparency	• Business Ethics
		• Data transparency and disclosure	• Performance Data
		• Compliance with laws and regulations	• Environmental Compliance • Socioeconomic Compliance
		• Social and environmental impact from the Company's activities	• GHG Emissions • Water, Air Emissions & Waste • Community Engagement

MATERIALITY ASSESSMENT

The assessment and prioritization of material topics are carried out through the corporate management standard, which was developed based on the internationally recognized Global Reporting Initiative (GRI) Standard and AA1000 AccountAbility Principles Standard (AA1000APS), while taking into consideration the governance, environment and social aspects for impacts on the Company and stakeholders. The material topics are annually reviewed and approved by the Sustainability Committee.

PROCESS OF MATERIALITY ASSESSMENT

1

IDENTIFY SUSTAINABILITY TOPICS

The various stakeholders' expectations are considered and analyzed alongside the topic master list, which is derived from an overview of the relevant regulations, material topics of related industry sectors, and those identified by international sustainability standards or assessments, and matters of global concern.

2

IDENTIFY IMPACTS ON ORGANIZATION

The degree of impact on the organization is assessed for each of the identified sustainability topics, focusing on the financial, operational, strategic, reputational, and regulatory aspects along with the likelihood of each incident occurring and its respective magnitude.

3

IDENTIFY IMPACTS ON STAKEHOLDERS

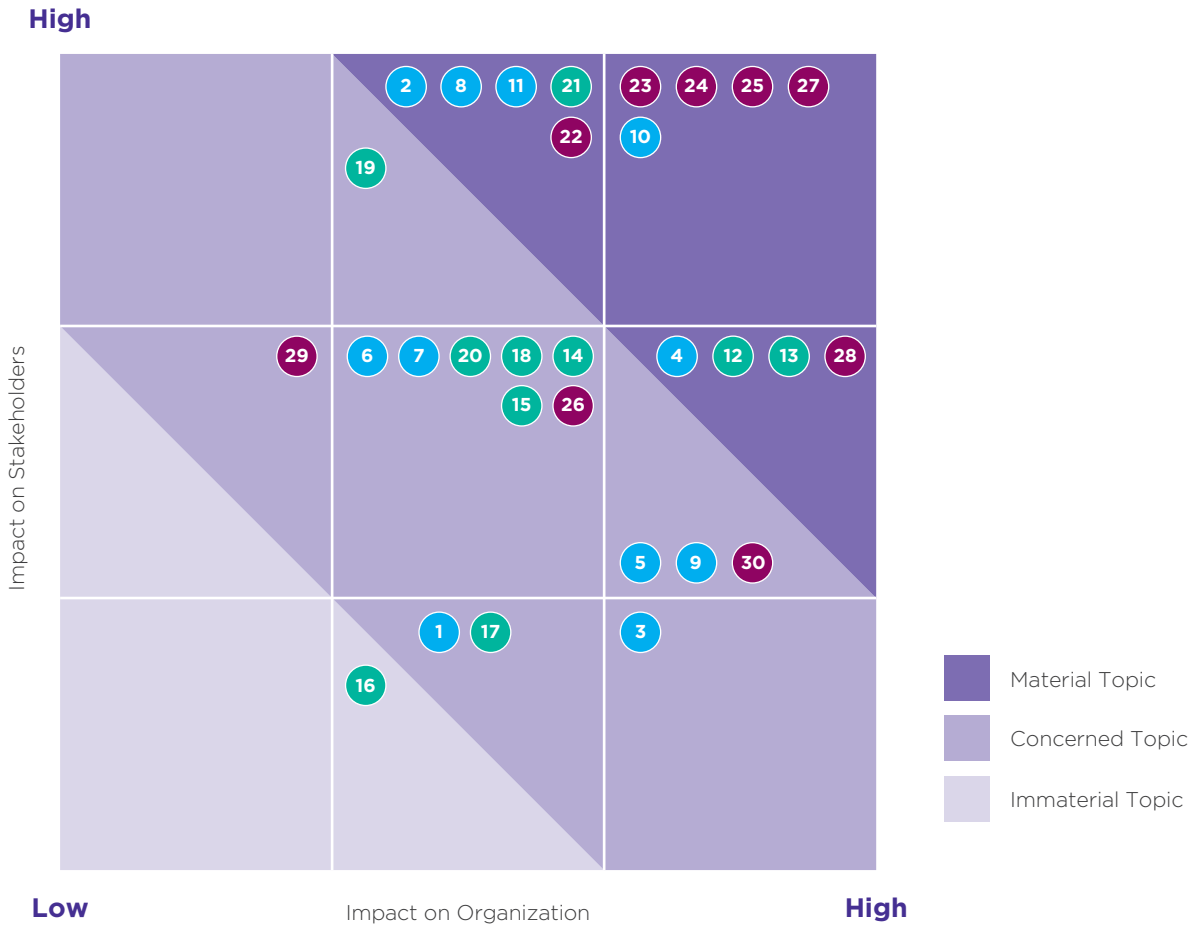
The degree of possible impact on stakeholders for each sustainability topic is determined together with the level of influence those stakeholders have on the organization.

4

PRIORITIZE SUSTAINABILITY TOPICS

The topics are prioritized into three categories according to their level of impact on the organization and stakeholders. The three categories are material topic, concerned topic, and immaterial topic.

MATERIALITY MATRIX



Governance	Environment	Social
1. Sustainability Governance	12. GHG Emissions	22. Employee Management
2. Business Ethics	13. Energy	23. Human Capital Development
3. Digital Transformation	14. Air Emissions	24. Corporate Culture
4. Supplier Management	15. Water	25. Occupational Health & Safety
5. Customer & Product Stewardship	16. Waste	26. Human Rights
6. Economic Distribution	17. Biodiversity	27. Community Engagement
7. Efficiency & Reliability of Power Plants	18. Mineral Waste	28. Community Development
8. Socioeconomic Compliance	19. Mine Closure	29. Resettlement
9. Risk Management	20. Mine Subsidence	30. Indigenous Peoples
10. Business Continuity Management	21. Environmental Compliance	
11. Data Privacy & Cybersecurity*		

* New topic in 2020

RE-VALIDATION OF MATERIAL TOPICS

In 2020, the Company conducted a materiality assessment by consolidating the assessment results from the mining business in Australia and Indonesia, together with the global trend. Topic "Data Privacy & Cybersecurity" is added and "Corporate Philanthropy" is removed. Topic "Specific Waste from Power Plant" is also merged with the "Waste" topic. In addition, the topic "Digital Transformation" is renamed to emphasize the current business circumstances. Moreover, the Company considered raising the priority of 4 topics, including Business Continuity Management, Mine Closure, Mine Subsidence, and Corporate Culture, based on their levels of impact on the organization and stakeholders. As a result, the report contents cover 30 topics with 14 material topics.

IMPACT BOUNDARY OF MATERIAL TOPIC

Material Topic	Impact Boundary									
	Employee	Business Partner	Community	Contractor	Financial Institution	Customer	Government	Investor	Shareholder	Supplier
2 Business Ethics	●	●		●	●		●	●	●	●
4 Supplier Management				●			●			●
8 Socioeconomic Compliance							●			
10 Business Continuity Management						●		●	●	
11 Data Privacy & Cybersecurity						●				●
12 GHG Emissions						●	●			
13 Energy				●			●			
21 Environmental Compliance							●			
22 Employee Management	●									
23 Human Capital Development	●									
24 Corporate Culture	●									
25 Occupational Health and Safety	●			●						
27 Community Engagement			●							
28 Community Development			●							

PERFORMANCE OVERVIEW

GOVERNANCE

0
Significant socioeconomic non-compliance

100%
Business units with key risk indicators

9
Significant corporate governance complaints

3%
Critical tier-1 suppliers assessed for ESG risks

100%
Coverage of CMT/IMT exercise

ENVIRONMENT

GHG Emissions

-16%
Mining business
(against baseline 2012)

-1%
Power business
(against baseline 2012)

Environmental Compliance

0
Significant incidents

0
Significant fines

Energy Consumption

0.42
Mining business
(GJ/tonne)

1.46
Power business
(GJ/MWh)

Hazardous Waste

87%
Hazardous waste reused and recycled for mining business

Water Consumption

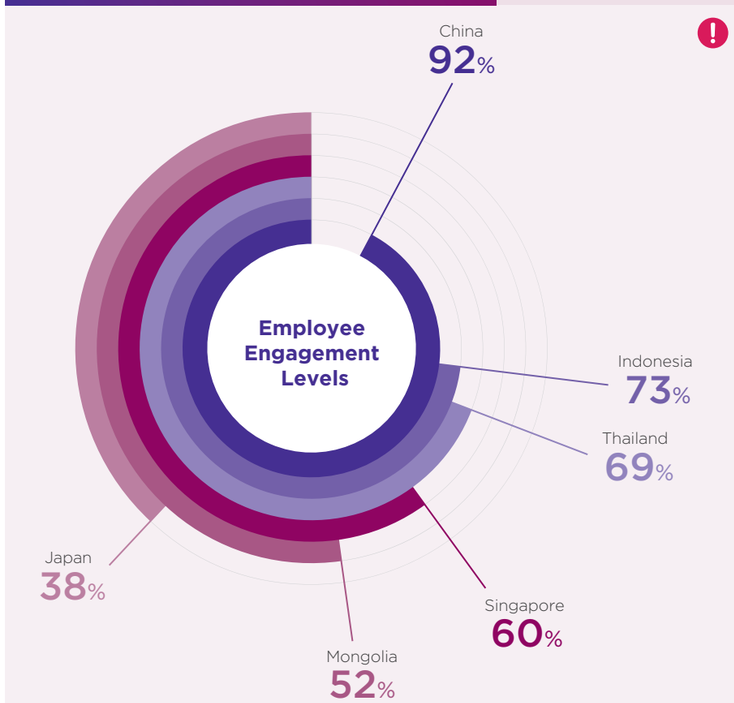
0.237
Mining business
(m^3/tonne)

0.857
Power business
(m^3/MWh)

Achieved
Not achieved
In progress toward long-term targets

SOCIAL

75% BanpuHeart
Level of alignment between employee behavior and the corporate culture "Banpu Heart"



200
Significant community complaints

63%
High critical positions with successor identified

78%
Stakeholder satisfaction survey on community development projects

0
Occupational fatalities

Lost Time Injury

2.99
Employees
(person/million man-hour)

0.21
Contractors
(person/million man-hour)

0
Significant resettlement complaints

94%
Business units assessed for human rights risks

Total Recordable Injury

16.91
Employees
(person/million man-hour)

0.78
Contractors
(person/million man-hour)

0
Indigenous peoples and ethnic minorities' rights violations

SUSTAINABILITY RECOGNITIONS

With long emphasized business ethics and strong corporate sustainability in governance, a number of leading sustainability authorities have recognized the Company's achievements both internationally and nationally.

INTERNATIONAL RECOGNITION

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 also 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 A

CCC | B | BB | BBB | A | AA | AAA

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

NATIONAL RECOGNITION

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).

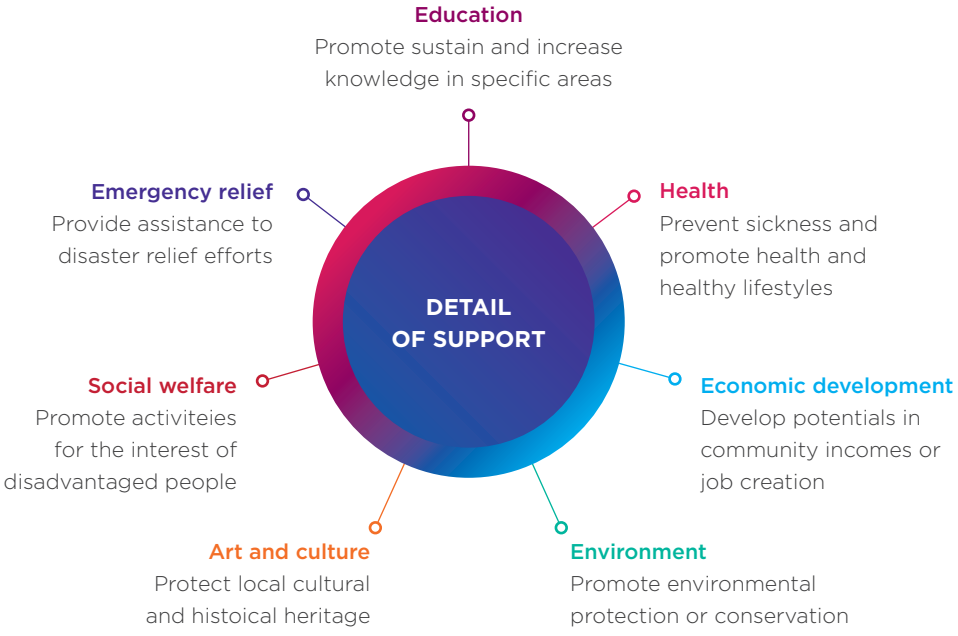
VOLUNTARY COMMITMENTS

Banpu has supported and applied a number of global initiatives and international best practices to improve its sustainability performance.

	Banpu conducts business in alignment with the United Nations Guiding Principles on Business & Human Rights and the Universal Declaration of Human Rights. As a UN Global Compact (UNGC) member, the Company embeds ten UNGC principles into its strategies and annually submits the Communication on Progress (CoP) to UNGC.
SUSTAINABLE DEVELOPMENT GOALS	Banpu has aligned its long-term corporate strategies with the United Nations Sustainable Development Goals (SDGs).
SAM Now a Part of S&P Global	Banpu has been invited to participate in SAM Corporate Sustainability Assessment (CSA) issued by S&P Global since 2014. The Company has used the assessment result as a guidance to formulate corporate sustainability strategy and improve ESG performances.
CDP DISCLOSURE INSIGHT ACTION	Banpu has been an active participant in the CDP assessment. The Company has participated in the climate change assessment since 2010, water security assessment since 2017, and forests assessment since 2019. The findings have been used to enhance the Company's environmental management system.
GRI	Banpu publishes sustainability reports in accordance with the GRI Sustainability Reporting Standards and also submits sustainability reports for external verification based on GRI Standards: Core option.
AccountAbility	Banpu has adopted AA1000 Accountability Principles Standard (AA1000APS) and AA1000 Stakeholder Engagement Standard (AA1000SES) to create its stakeholder engagement and materiality assessment frameworks.
IFAC	Banpu assures accuracy of data in its sustainability reports using International Standard on Assurance Engagements (ISAE) 3000 issued by the International Federation of Accountants (IFAC).
IFC International Finance Corporation WORLD BANK GROUP	Banpu has adopted IFC Performance Standard on Environmental and Social Sustainability for ESG risk management.
OECD	Banpu has developed the corporate governance standard in accordance with OECD Guideline for Multinational Enterprises.
TCFD TASK FORCE ON CLIMATE-RELATED FINANCIAL DISCLOSURES	Banpu has followed TCFD recommendations in reporting its climate change management practices.
ICMM International Council on Mining & Metals	Banpu has adopted ICMM's mining principle to define ESG management standards of the mining business in particular mine subsidence, mine closure, and community resettlement.

PARTNERSHIP

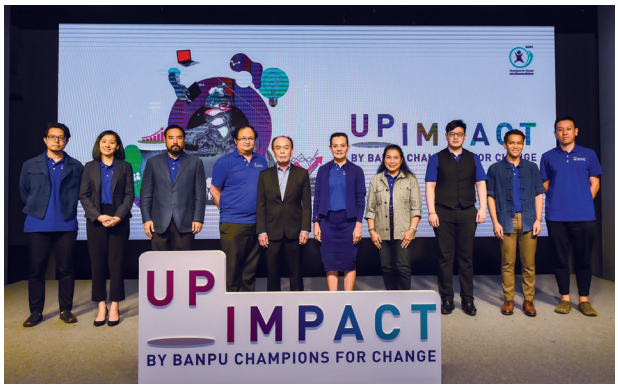
Almost 4 decades, the Company has operated its business by embracing ESG principles to achieve business growth together with creating sustainable values for all stakeholders. The Company, therefore supports a variety of philanthropic activities, both directly and indirectly related to the business that helps to create benefits for society. The Company is committed to supporting activities in 7 focus areas according to the corporate philanthropy policy as shown below. However, the Company does not support the activities that are associated with non-compliance with laws or ethics, disrespect to the nation or religion, and conflict with the Company's code of conduct.



POWER GREEN CAMP

The Company had collaborated with the Faculty of Environment and Resources Studies, Mahidol University to organize the "Power Green Camp" since 2006 with the underlying concept of "Environmental Science-Learning Through Action". The camp aims to educate young people about the importance of natural resources and encourage them to solve environmental problems systematically by applying knowledge that they have learned. Various environmental science learning activities were arranged, such as formal & active learning, field trip, panel discussion, and group project exhibition. During 2017-2019, total 210 students participated in the camp, and 6 students joined the excursion abroad to broaden their environmental management knowledge and experience with world-class best practices which can sustainably be applied in Thailand. Besides environmental awareness, the participants gained essential life skills such as social skill, adaptability skill, and communication skill.

CHAMPIONS FOR CHANGE



Since 2010, the Company has funded and incubated young social enterprises with passion of creating a better society by improving their business models and business skills through the "Champions for Change" project. The Company collaborated with ChangeFusion, a non-profit organization, to launch an online learning platform "Social Enterprise School (SE school)". The learning platform offers a wide range of topics relating to social enterprise operation, such as business creation, understanding of social and market testing methods. Each year, 10 social enterprises who proactively respond to the demands in a digital era and have clear goals in solving social and environmental issues while being commercially viable are selected. Each team received THB 80,000 seed funding to execute their business for 3 months. Then, 5 social enterprises with impressive performance, good progress, and positive social impacts received an additional THB 250,000 of budget for business development. During 2010-2019, 92 social enterprises received support from the Company with examples of social and environmental impacts as follows:

- Livelihood: 19 producer groups gained 40% higher income
- Environment: 6.5 tonnes of waste were reduced, 3 coral structures were built
- Education: 1.2 million people had better access to higher education through an online platform
- Health: 221,450 people had better access to health product and healthcare information
- People with disabilities: 30 books were developed for the visually impaired and 10 schools for the blind had better access to learning materials resulting in 50% of students passing the examination

THAMMASAT-BANPU INNOVATIVE LEARNING PROGRAM

The Company, in collaboration with the Faculty of Learning Science and Education, Thammasat University has organized the "Thammasat-Banpu Innovative Learning Program" to equip students with essential skills for young innovators through a board game design contest. The program includes workshops and training sessions in various topics such as critical and analytical thinking, creative communications, responsibility, and leadership. Each year, the participants design their board games that reflect and offer solutions to social issues. Since 2016, 15 events including auditions, workshops, training, and product showcase events were arranged with more than 148 of students and teachers incubated through the learning process. Throughout the program, 34 board games were created based on different social issues such as social development, healthy living and adolescence. As a result, 8 board games of various social angles can be used as learning tools to educate the target group and lead to social behavior change, which contributes to positive impacts on society. At the same time, the participants had been developing their skills to become the new-generation innovator.

In 2020, the 2nd "Thammasat-Banpu Innovative Learning Program" event was arranged under theme "Game & Learning" at KBank Siam Pic-Ganesha Theater to launch the new board games to the public. In this event, 14 finalist teams introduced their board games to the audients, which are also the young generation.

CONNEXT ED PROJECT

With the belief that "Learning is the Power of Change and Development", the Company joined hands with public sector, civil society as well as the private sector in the CONNEXT ED project to enhance educational quality, which is fundamental in creating sustainable economic growth and social prosperity. Since 2016, the Company has allocated over THB 18 million of budget to strengthen the teaching capability of teachers for 12 schools in 3 provinces in northeastern Thailand by providing skill development workshops. Moreover, 28 volunteers, who are the employee from every function in Bangkok office worked as a partner with schools to modernize the learning activities. Example of the activities carried out are as follows:

- A workshop "High Scope" curriculum for 20 early childhood teachers
- 18 workshops "Adopting the curriculum of Chulalongkorn University Demonstration School" for 344 primary school teachers on the Thai, English, Mathematics, and Science subjects
- A workshop "Adopting the curriculum of Chulalongkorn University Demonstration School" for 60 secondary school teachers on the Thai, English, Mathematics, Science, and Social subjects
- A computer science training course for 58 primary and secondary school teachers by the Institute for the Promotion of Teaching Science and Technology (IPST)

Besides, the Company also arranged a session to boost self-esteem and inspiration of 60 teachers from the 12 schools by providing workshops on the topic of "Constructionism" and "Teacher's Power for Change".

The key success of this project was proved by the score increase in the Ordinary National Education Test (ONET). For example, the average ONET score of Grade 9 students was increased from 29.77 in 2017 to 32.03 in 2019. Moreover, students from the sponsored schools received awards in academic competitions on occupational skills. Although the Company's mandate to support this project ended in 2020, the Company looks forward to carrying on developing the education quality in the sponsored schools.

PHILANTHROPIC RESPONSE TO THE COVID-19

During the COVID-19 outbreak, Thai people across the country are facing a variety of challenges and uncertainties. It was a big test for everyone to adjust their behavior in order to be safe and stop the spreading of coronavirus. As committed to sustainable development and being a good corporate citizen, the Company has closely monitored the situation and support related stakeholders facing a hard time during the ongoing pandemic.

- With emphasis on the health of medical personnel in the border hospitals as well as risks to their families, the Company provided personal protective equipment and face masks to hospitals in Narathiwat, Pattani, Yala, and Tak province.

- The Company provided high-quality cloth masks to needy schools nationwide and supported bags of relief supplies, consisting of rice, dried food, and essential commodities to affected people.

- To support medical staff to perform their duties with full capacity, the Company supported Thammasat University Hospital in building respiratory care unit with medical equipment and provided the positive pressure clinic and medical procedure negative pressure room to hospital in Chachoengsao province.

- The Company collaborated with partners across various sectors to extend its support. Examples included partnerships with Thai Red Cross Society, Thai Wacoal, and Singer Thailand to support the high-quality cloth masks to communities nationwide.

BANPU AND SDGs

Our contribution to the UN Sustainable Development Goals (SDGs) is integrated into the Company's strategies across the value chain. Based on prioritization, 7 SDGs most relevant to the business have been highlighted with objective to both increase positive impact and reduce negative impact from business operations. The long-term targets specific for each 7 Goals are developed and monitored.

	PREVIOUS ACHEIVEMENT	2021	2022	2023	2024	2025
6-3 6-4 **6 CLEAN WATER AND SANITATION**	• Water baseline data is available at all business units • Zero significant tailings spills • Zero hazardous waste to landfill		Hazardous waste disposal less than 6 tonnes for thermal power business Intensity of non-hazardous waste disposal less than 0.130 kg/MWh for thermal power business	Intensity of hazardous waste disposal less than 0.010 kg/tonne and non-hazardous waste disposal less than 0.140 kg/tonne for mining business		
7-2 **7 AFFORDABLE AND CLEAN ENERGY**	• 0.66 GW of renewable energy • 0.25 GW of solar rooftop • 700 MMcfed of shale gas production				More than 50% of portfolio are clean energy More than 1.1 GW of renewable energy production capacity	
8-7 8-8 **8 DECENT WORK AND ECONOMIC GROWTH**	• Zero occupational fatalities • More than 50% of spending on local suppliers		More than 70% of business unit assessed for human rights risks		Lost time injury rate of employees less than 1.99 and contractors less than 0.14 High-consequence injuries rate (employee) less than 0.06 Zero high-consequence injuries rate (contractor)	
12-4 **12 RESPONSIBLE CONSUMPTION AND PRODUCTION**	• SO_2 emissions intensity less than 30 g/tonne for mining business • SO_2, NO_X, TSP emissions intensity less than 76.6, 118.4, and 23.0 g/MWh for thermal power business				5% energy intensity reduction from 2019 for mining business	
13-1 13-2 **13 CLIMATE ACTION**	Integrate internal carbon pricing in investment decision				7% GHG emissions intensity reduction from BAU for mining business 20% GHG emissions intensity reduction from BAU for thermal and renewable power business	
15-1 15-2 15-5 **15 LIFE ON LAND**	• All business units assessed for potential impact on biodiversity • More than 90% of revegetation against plan for mining business				Net positive impact on biodiversity upon closure of the mine identified as high potential for biodiversity impact	
17 PARTNERSHIPS FOR THE GOALS	All community development projects are linked to the SDGs					

BANPU AND UN GLOBAL COMPACT

Being a participant of the UN Global Compact, in every country where it conducts business, the Company responds to 10 principles of UNCG, which highlight fundamental responsibilities in the areas of human rights, labor, environment, and anti-corruption.

HUMAN RIGHTS

PRINCIPLE 1 : Support and respect human rights
PRINCIPLE 2 : No human rights abuses

- Respect and comply with local laws and international principles responding to human rights, especially the rights of indigenous peoples
- Conduct human rights due diligence to access human rights risks in supply chain
- Provide equal opportunity, regardless of race, gender, religion, or nationality

Human Rights P. 96 **Indigenous Peoples** P. 105

ENVIRONMENT

PRINCIPLE 7 : Precautionary approach to environmental challenges
PRINCIPLE 8 : Environmental responsibility
PRINCIPLE 9 : Environmentally friendly technologies

- Comply with environmental regulations as well as actively monitor environmental risks to prevent negative impact
- Manage efficiently use of resources to preserve natural resources, reduce waste disposal and avoid waste to landfill
- Apply digital technology to improve environmental management system such as utilizing 3D photogrammetry in subsidence management
- Access biodiversity risk and avoid to operate in the area with high biodiversity value or threatened species

Waste P. 72 **Environmental Compliance** P. 80
Mine Subsidence P. 79 **Biodiversity** P. 74

LABOR

PRINCIPLE 3 : Freedom of association
PRINCIPLE 4 : Elimination of forced labor
PRINCIPLE 5 : Abolition of child labor
PRINCIPLE 6 : Elimination of discrimination in workplace

- Allow employees to exercise freedom of association and collective bargaining such as forming a labor union
- Comply with local laws and regulations regarding child and forced labor
- Provide opportunity to everyone with no discrimination across all stages of employee lifecycle

Human Rights P. 96 **Employee Management** P. 84

ANTI-CORRUPTION

PRINCIPLE 10 : Work against corruption

- Follow the international principles of corporate governance to ensure the ethical conduct of the Company, especially in anti-corruption
- Build employees' awareness of business ethics through implementation of corporate governance policy, code of conduct, and related policies

Business Ethics P. 40

GOVERNANCE

38%
Spending on local suppliers

97.72%
Availability factor of power plants

100%
CMT/IMT exercise

9
Significant corporate governance complaints

1
IT infrastructure incident

SUSTAINABILITY GOVERNANCE

The Company believes that good governance is a foundation for the business. Consequently, integration of ESG strategy into day-to-day business operations is the key success factor for the Company's sustainable growth.

	2020	Target 2020
Coverage of significant ESG aspects set as corporate ESG targets	100%	100%
Coverage of corporate ESG targets deployed to senior executives	100%	100%

PERFORMANCE

All of the significant ESG aspects were set as corporate targets, including KPIs of CEO. All of those were also deployed to senior executives, both at a corporate office and every business unit. Annually, the Board of Directors performs the performance self-assessment, which consists of 3 types of assessment, namely group assessment of Board of Directors, sub-committees, and individual directors. In 2020, the results of assessment were as follows:

BOD'S MEETING ATTENDANCE AND PERFORMANCE ASSESSMENT

	Board of Directors	Corporate Governance and Nomination Committee	Audit Committee	Compensation Committee
No. of meeting	13	4	9	8
Meeting attendance*	97.62%	94%	100%	100%
Performance assessment	Group 4.74 of 5 Individual 4.56 of 5	Average of Sub-committee 4.67 of 5		

* Minimum requirement for BoD's meeting attendance is 50%

SUSTAINABILITY COMMITTEE MEETING 2020

The Sustainability Committee Meeting is held twice a year. In the meeting, the ESG or sustainability performances are reviewed and improvement plans are discussed. Besides, the global sustainability trends are also highlighted to seek the impacts and opportunities for the Company.

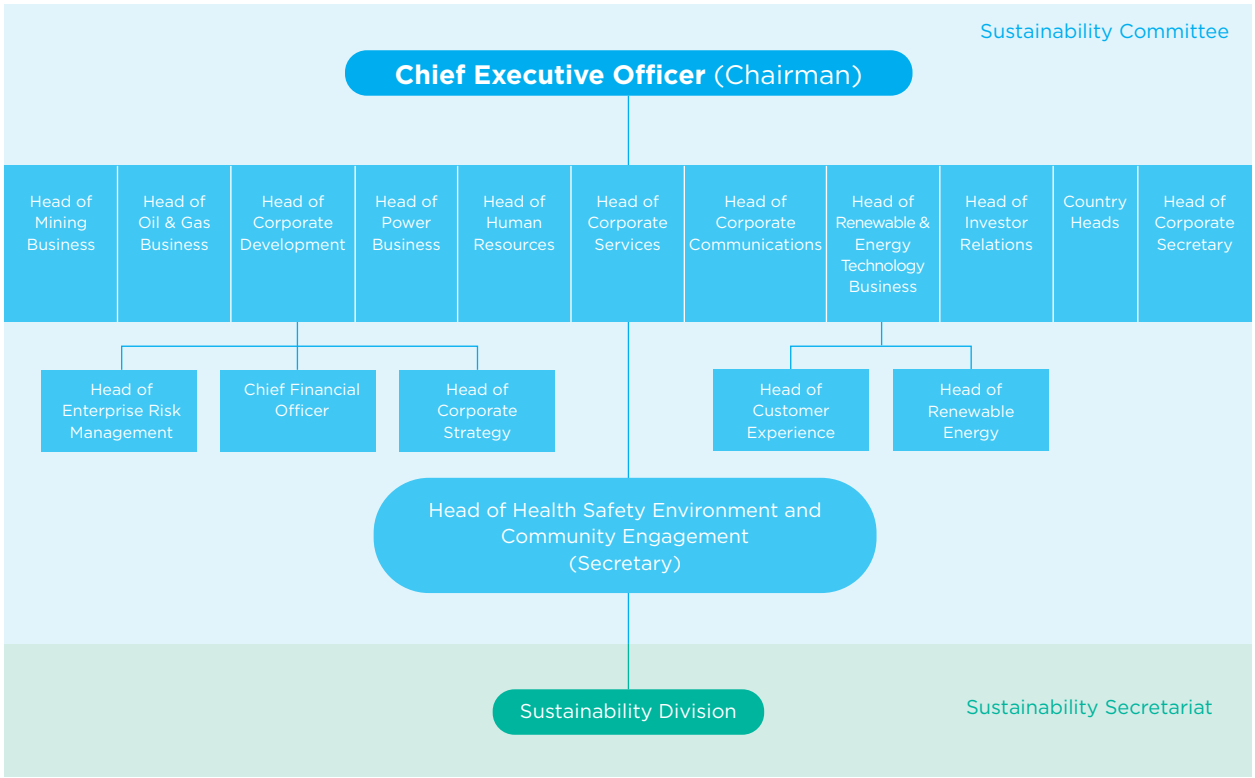
	Meeting No.1 12 May 2020	Meeting No.2 4 September 2020
Key agenda	• Review 2019 ESG performances • Review 2020 ESG risks • Lessons learned from COVID-19 • Global trend analysis, peer study, and executives' interview on Banpu's sustainability	• Review materiality matrix
Approval	• 2020 ESG targets	• Waste management policy • 2021-2025 ESG targets

MANAGEMENT APPROACH

To ensure good governance, the Company adheres to operate the business with full compliance with the local laws and regulations where we have operations. Apart from ensuring compliance with laws, regulations and shareholders' resolutions, the Board of Directors also ensures that ESG risks are properly managed. Sustainability performances are discussed at BoD's meetings on a quarterly basis. In addition, the BoD site visit is annually performed to business units, especially for the new directors.

	Role & Responsibility	Performance Indicator
Board of Directors (BoD)	• Ensure compliance with relevant laws and regulations • Ensure that significant ESG risks are properly identified and managed • Set up the KPIs of CEO and evaluate CEO's performance	• Percentage of meeting attendance • BoD's performance assessment score • Coverage of significant ESG risks quarterly reviewed through the Audit Committee
Chief Executive Officer (CEO)	• Ensure the deployment of sustainability policy and ESG strategy into day-to-day business operations • Set up the KPIs of senior executives and evaluate performance	• Coverage of significant ESG aspects set as corporate ESG targets • Coverage of corporate ESG targets deployed to senior executives • Achievement of corporate ESG targets
Senior executives and heads of business unit	• Review related policies and strategies • Review results of stakeholder analysis and materiality assessment • Review global trends in sustainability • Review ESG targets and performances • Ensure the achievement of ESG targets	• Achievement of ESG targets at each business unit

To drive sustainability strategy, the Company has established the Sustainability Committee. The committee, chaired by the CEO, consists of senior executives and heads of business units from every country in which the Company operates. The committee meetings are held twice annually.



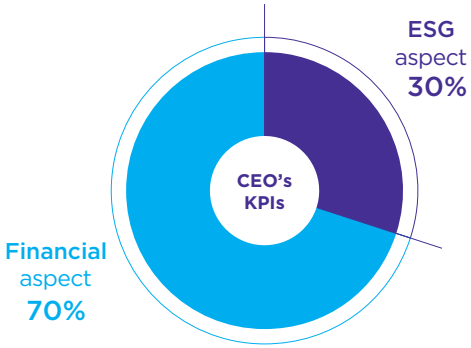
HSEC SUMMIT 2020

Annually, the Company arranges an ESG-related corporate meeting named "HSEC Summit", which is participated by CEO, executives of all business units, and HSEC members in all countries. The objective of this meeting is to strengthen partnership across the groups for ESG performance improvement. In 2020, due to the COVID-19 restriction, a virtual meeting was conducted under the theme "Stepping towards Sustainable Future" on October 7 with 78 participants from Australia, China, Indonesia, Japan, Mongolia, and Thailand.

In the event, the key highlight was the announcement of the new long-term ESG targets towards 2025. To ensure the achievement of the targets, clear direction for each specific business was also highlighted and discussed. In addition, there was the sharing session from CDP under the topic "Trends in Corporate and Investor Climate Action" that helps participants to gain more understanding on science-based targets, Task Forced on Climate-related Financial Disclosure (TCFD), and Taskforce on Nature-related Financial Disclosure (TNFD).

SUSTAINABILITY IN PERFORMANCE EVALUATION

To ensure long-term sustainable growth, the CEO's KPIs, approved by the Board of Directors, are tied to the Company's performance, both in terms of financial and ESG aspects. ESG-related KPIs accounts for 30% of total KPIs. Such ESG indicators include employee engagement score, significant corporate governance complaints, security breaches, GHG emissions intensity reduction, occupational fatalities, etc. In parallel, the KPIs of senior executives are established with alignment to the KPIs of CEO. The performance of the CEO is reviewed annually by the Board of Directors. The same basis is also applied for performance appraisal of senior executives, which is evaluated by the CEO.



ESG Dimension	Example of KPIs
Environment	• Zero significant environmental incidents • GHG emissions intensity reduction 1% for mining business and 4% for power business • Air emissions intensity (SO_2 NO_x and TSP) as planned • Water consumption intensity as planned • Zero hazardous waste to landfill
Social	• Zero occupational fatalities • Total recordable injury frequency rate ≤15.26 for employees and ≤0.74 for contractors • High-consequence injury rate ≤0.10 for employees and ≤0.01 for contractors • Zero tier-1 process safety event rate • Zero significant complaints (community, resettlement, human rights, indigenous peoples' rights)
Governance	• Zero significant corporate governance complaints • Zero complaints regarding customer privacy • Zero complaints regarding safety & environmental issues from the use of products • Zero information security breaches or cybersecurity incidents • 50% of spending on local suppliers

COMPETENCY DEVELOPMENT OF THE BOARD OF DIRECTORS

The Company encourages all directors to keep their skills and knowledge up to date. Throughout the year, directors attended the following competency development programs:

Program	Organization	Number of directors attending
Knowledge Sharing: Board effectiveness in accordance with New CG Code	Thai Institute of Directors	4
Director's Briefing 6 "Corporate Strategy beyond the Crisis, a Chairman/Board Perspective"	Thai Institute of Directors and Bain & Company	1
IT Security Awareness for Top Management	ACIS Professional Center Co., Ltd.	1
The 3rd East Asia Energy Forum "Role of Carbon Capture Utilization and Storage (CCUS)/Carbon Recycling in ASEAN/East Asia"	Economic Research Institute for ASEAN and East Asia (ERIA), Energy Research Institute Network (ERIN) and Ministry of Industry-Viet Nam	1
The 58th Philippine Economic Society (PES) Annual Meeting and Conference "Recent Rice Sector Reforms in Southeast Asia"	Philippines Economic Society (PES)	1
Executive Seminar 2020 "Building profitable and sustainable growth"	Mitr Phol Sugar Corporation., Ltd.	2
Top Executive Program in Creative & Amazing Thai Services (TOPCATS 2)	University of the Thai Chamber of Commerce	1
Boards That Make a Difference (BMD) class 10/2020	Thai Institute of Directors	1
2020 PTIT Special Lecture "Thailand's density: Water Crisis and Development Philosophy"	Petroleum Institute of Thailand	1
Director Briefing "The Roles of Directors during COVID-19: Financial Reporting, Leadership and Beyond"	Thai Institute of Directors and KPMG Thailand	2
Board War Room: Personalized Marketing vs Data Privacy: Engaging your customers while protecting their identities	Thai Institute of Directors	1
Director Briefing Finding Creative Solutions to Business Dispute during Pandemic Time / IOD & Thailand Arbitration Center	Thai Institute of Directors and Thailand Arbitration Center	1
Director Certification Program (DCP) class 298/2020	Thai Institute of Directors	1
Knowledge Sharing: Update the Trends for Energy Generation Markets and Investment Opportunity	Banpu Public Company Limited	4
Knowledge Sharing: Global Megatrends	Banpu Power Public Company Limited	4

BUSINESS ETHICS

Business ethics is a material issue interested by all stakeholders. Operating the business without adhering to ethical practices may result in damage to the reputation of the Company and stakeholders' confidence. Upholding business ethics is therefore an essential part of running the business successfully.

16 PEACE, JUSTICE AND STRONG INSTITUTIONS

	2020	Target 2020
Number of significant corporate governance complaints	9	0
Proportion of significant corporate governance complaints resolved through a dispute mechanism	100%	100%

PERFORMANCE

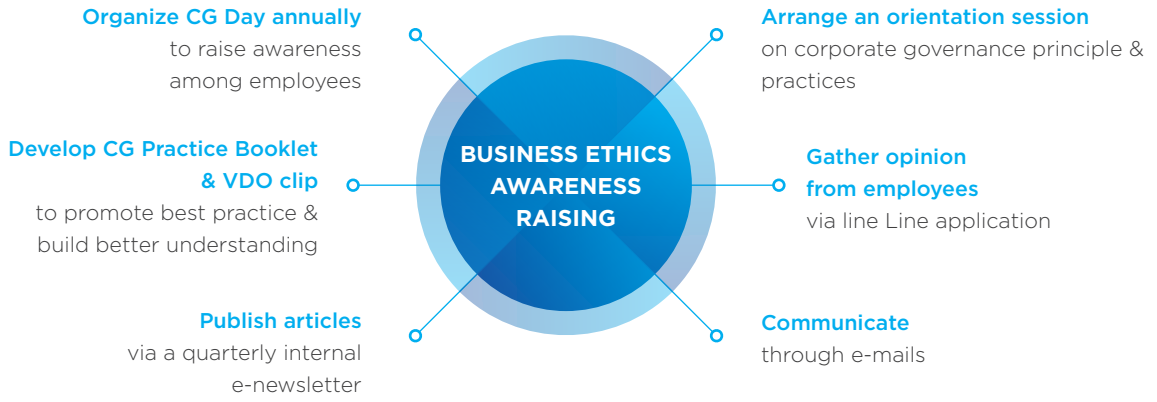
The Company was recertified as a member of Thailand's Private Sector Collective Action Coalition against Corruption (CAC) for the second term and also was ranked as one of the top listed companies with Excellent CG Scoring, according to the Corporate Governance Report of Thai Listed Companies 2020. In 2020, the Company received 9 corporate governance complaints, comprising of 1 fraud, 4 dishonesty, 1 intentional act causing harm to the Company, and 4 in Others. However, all of which have been completely dissolved.

CG DAY 2020 IN ITM

ITM, the Company's subsidiary in Indonesia, organized the "7th Corporate Governance Day" event under the theme "Adapting to Change: What to Do" on 23 October 2020 to enhance the understanding of social responsibility and Good Corporate Governance (GCG). There were 2,124 participants, both internal and external attended this virtual event. On this occasion, the ITM president director promoted the updated GCG policy and code of conduct to employees and business partners. The key highlight was a sharing session by a guest speaker with the topic of "Creating Shared Value as Strategic Management in Pursuing Sustainable Business".

MANAGEMENT APPROACH

The Company published a Corporate Governance Policy and Code of Conduct that align with international standards such as the ASEAN Corporate Governance Scorecard, the Organization for Economic Co-operation and Development (OECD), and the CG principles of Thai listed companies according to the Securities and Exchange Act, the Securities and Exchange Commission, and the Stock Exchange of Thailand. The CG Policy and Code of Conduct have regularly been reviewed. The latest revision was announced in 2018. The Company also raises the business ethics awareness through various activities.



The Company developed CG Practice Booklet to install a good understanding about the CG Policy and Code of Conduct to employees. This booklet also includes related policies and information as follows:

- Whistleblower policy
- Anti-corruption policy
- No-gift policy
- Conflict of interest
- Keeping information confidentiality
- Use of computer and information technology
- Trading partners and/or creditors policy and practices

COMPLAINT CHANNELS

LETTER:
Corporate Governance and Compliance Division
Banpu Public Company Limited,
27th Floor, Thanapoom Tower,
1550 New Petchburi Road, Makkasan,
Ratchathewi, Bangkok 10400

COMPANY WEBSITE:
https://www.banpu.com/corporate-governance/whistleblowing/

COMPANY WEB PORTAL:
http://banpugroup.sharepoint.com

EMAIL:
GNCchairman@banpu.co.th or
GNCsecretariat@banpu.co.th

COMPLAINT INVESTIGATION PROCEDURE

1. Conduct a full investigation in accordance with the guidelines of the Corporate Fraud Management manual once there is a sufficient evidence
2. Inform the complainant the investigation outcome through appropriate communication channels
3. Decide what action to take when the allegation was proven
4. Quarterly report to the Corporate Governance and Nomination Committee and annually report to the Board of Directors

DIGITAL TRANSFORMATION

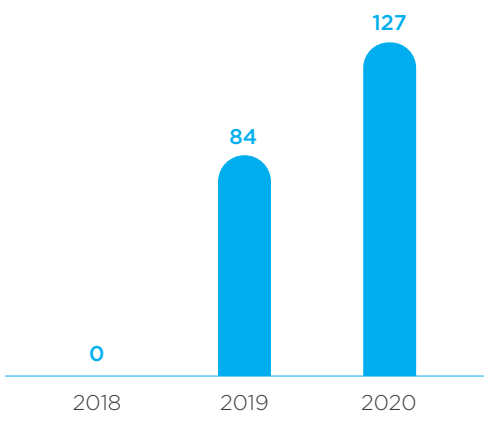
Improvements in productivity and process efficiency are important to the Company since it is directly related to the operational costs. In addition to continuous improvements, the Company pursues step-change improvements through user-centric digital solution deployment as the key to ensure the Company's competitiveness.

	2020	Target 2020
Number of use-cases & initiatives	13	15
Amount of business impact value (USD million)	43	50
Number of employees trained through the digital academy	1,400	1,000

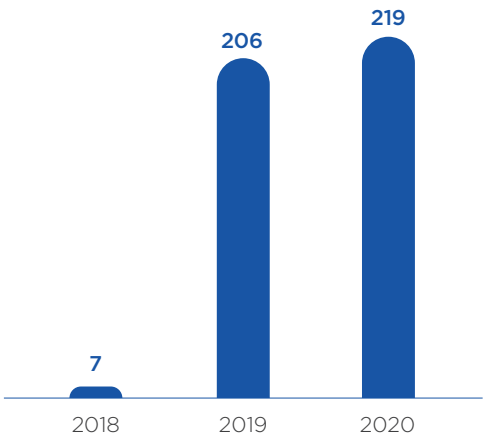
PERFORMANCE

In 2020, there were 219 on-going projects under development through 5 stages from G1 to G5, with 13 new use-cases & initiatives. Since 2018, the business impact from those projects was significantly increased with an accumulated impact value of over USD 127 million. Moreover, from the success of the Digital Capability Center (DCC) established in Australia and Indonesia in 2018 and 2019 respectively, the Company expanded the innovative culture to China by establishing 2 DCCs. The Company also collaborated with over 40 partners to strengthen the digital ecosystem and innovate more use-case. To enhance capability and prepare employees for the digital era, Banpu Digital Academy encouraged employees to participate in digital courses. The number of employees receiving the training was increased every year from 400 people in 2018 to 1,400 people in 2020.

ACCUMULATED AMOUNT OF IMPACT VALUE (USD Million)



ACCUMULATED NUMBER OF USE-CASE & INITIATIVES



JOINT-CONTRACTORS OPERATION IMPROVEMENT

In Indonesia, open-pit mining is mainly operated by contractors. To enhance productivity of the mining process, a joint-contractors operation improvement project was developed. In this project, several interview sessions and field visits were conducted for the front-line staff, both employees and contractors, to share pain points and together identify solutions. One of the common pain points was a scattering of data from various sources. To solve the problem, "In-pit visualization and production" and "Performance dashboards" were developed as a single source of truth for mining process improvement. Consequently, the implementation of the project minimizes non-productive hours in mining and hauling for 30 minutes and 45 minutes daily, which leads to additional 128,000 tonnes of coal production annually, with a value of around USD 240,000.

LONGWALL AUTOMATION

To increase productivity and safety for underground mine workers, the Company develops an automated software to support longwall automation for the coal production at Mandalong mine. Instead of manual control, the automation system reduces human error by providing a better control of the shearer to trace coal seam more precisely. The system also helped to reduce 95% of maintenance downtime. Thus, the machine can operate more efficiently with an average of 1,200 minutes in operational uptime per panel, leading to 47% increase in productivity per operating minute comparing the first half of 2020 to 2019. Moreover, instead of controlling the machine at close range underground, the automated system allows workers to remotely control the machine on surface, ensuring safety conditions for workers.

SHORT-TERM SUPPLY-CHAIN OPTIMIZATION

To ensure the effectiveness of coal delivery to customers, the Company developed a Short-term Supply-chain Optimization (SSO) program to facilitate the manual work process of the coal logistics in Indonesia. SSO is the advanced analytic that optimizes coal production and coal logistics to meet customers' requirements. Instead of coal blending planning in spreadsheets, SSO can accurately analyze coal availability and quality data, then optimize the coal blending plan when there was a specific order from customers. Moreover, the program allows the Company to generate 3 months of advanced planning to ensure product on-time delivery. With this program, there was a 70% reduction of timer required for production planning, allowing the Company to fulfill 100% of customers' requirements. As a result, compared to the 2018 baseline, the Company can increase more than USD 50 million of revenue annually.

MANAGEMENT APPROACH

The Company has enhanced the lean manufacturing and operational excellence programs from a preventive approach to a predictive approach. This is enabled by the implementation of advanced analytics to gain meaningful insights to deploy preventive actions at the right time. The Company is in progress towards becoming a digitally-enabled enterprise by ensuring a digital transformation in 3 dimensions called Triple-transformation framework encompassing Business, Technology, and People.

In the Business dimension, the Company has sparked innovation by starting with employee ideation. Since 2012, "Banpu Innovation Convention", a corporate knowledge-sharing forum, is annually arranged to provide an opportunity for front-line staff in each country to share their innovation. Also, employees are motivated to submit their ideas through the digital's platform such as "WOW Idea" in Thailand or the "Infinity and IdeaBlast" in Indonesia. All employee initiatives are gathered to be resources for execution. The Technology dimension puts focus on the real users and stakeholders when developing solutions to the problems. Cross-functional collaboration in Design Thinking workshops, improvement of UX/UI, initiatives to solve the customer pain points are the key drivers. The People dimension focuses on training. Curated Agile mindset and 4th industrial revolution technology courses through the Banpu Digital Academy are developed to ensure the employees' readiness.

SUPPLIER MANAGEMENT

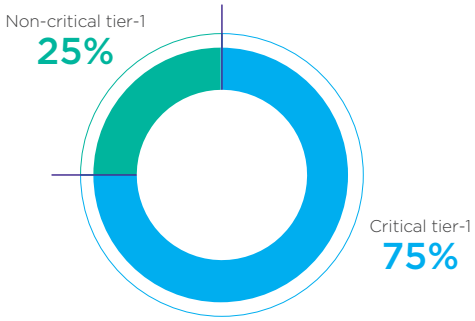
Supply chain management plays an important role in moving the Company forward as efficient management does not only reduce the risks of business interruption but also enhances the operational efficiency. Promoting ESG principles across the supply chain is thus one of the Company's missions.

	2020	Target 2020
Proportion of spending on local suppliers	38%	>50%
Proportion of critical tier-1 suppliers assessed for ESG risks	3%	>20%
Proportion of new critical tier-1 suppliers assessed for ESG risk	NA*	>20%
Proportion of contracts that include ESG clauses	15%	>20%

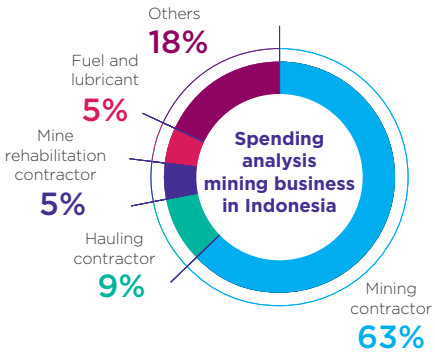
* Data collection system under standardization

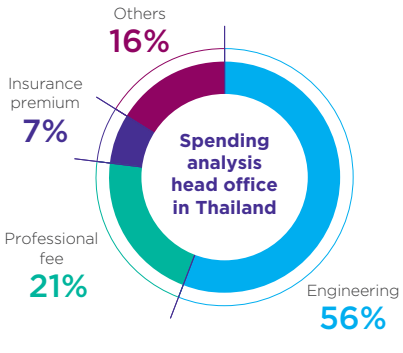
PERFORMANCE

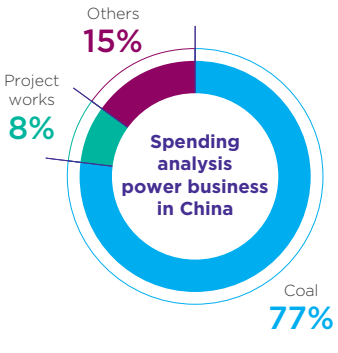
In 2020, the Company engaged with 3,197 suppliers in 3 main countries: Australia, China, and Indonesia, of which 38% were local suppliers and 75% were identified as critical suppliers. Since the ESG integration in supplier selection is under standardization, only 3% of critical tier-1 suppliers were assessed for ESG risks, mainly the key service suppliers such as mining and hauling contractors for the mining business.



Moreover, the spending analysis has been performed in China, Indonesia, and Thailand. Yet, the spending analysis of Australia is unavailable as it is under standardization. It is expected to be available in Sustainability Report 2022. The spending analysis results that 63% of spending in Indonesia is to the coal mining contractor. While 77% in China were utilized for coal as energy source.







MANAGEMENT APPROACH

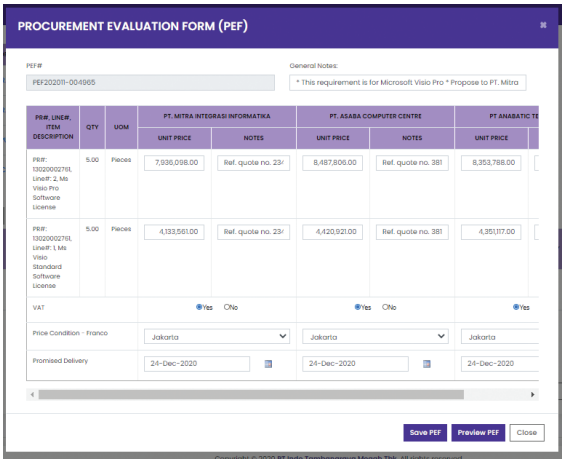
The sustainable supply chain policy was announced as a commitment to creating long-term value for all stakeholders. Moreover, 5-year strategic plan (2018-2022) was also developed as a roadmap. The Supplier Code of Conduct has been published as a guideline for all existing and potential suppliers to ensure that they operate their business in adherence to environmental, social, and governance (ESG) principles.

At present, the supplier ESG Due Diligence is under standardization. When this process is fully implemented, critical suppliers will be identified and carried out a preliminary ESG risk assessment. In the case where a critical supplier is identified as high ESG risk, the supplier shall prepare preventive or corrective measures with a comprehensive audit plan. The Company then conducts an audit as specified in the plan once a year.

Furthermore, the spending analysis has been performed in each country to identify areas for cost reduction as well as process improvement opportunities. The Company also supports local procurement by seeking to engage goods and services from local suppliers in the areas where business operates. However, the data collection system for local procurement is under standardization for all business units.

PROMPT SYSTEM FOR SUPPLIER SELECTION

To ensure fair competition and transparency, ITM, our subsidiary in Indonesia, developed Procurement Management for Productivity & Transparency (PROMPT), an e-procurement system used for supplier selections. Instead of using a manual process, all supplier selection processes run through the online platform. By using PROMPT, invitations and requests for quotations are sent to all vendors in the approved vendor list via e-mail, and only quotations submitted on time and met requirements are accepted. Later, the vendor's quotations are consolidated into a procurement evaluation form and evaluated based on 5 criteria (technical, quality, response, delivery, and cost) through transaction evaluation workflow before being finalized. The PROMPT system not only helps ITM select the most suitable supplier but also strengthens ITM's reputation in terms of transparency with stakeholders.



ESG INTEGRATION IN SUPPLIER SELECTION

To ensure sustainability across the supply chain, the Company has integrated ESG criteria into the supplier selection process. Centennial, the Company's subsidiary in Australia, develops contractor pre-qualification templates to initially assess contractor's performance, both new and existing contractors. The template describes several criteria such as Health, Safety and Environment, Quality, Facilities/Equipment, Technical/R&D, and Administration. The questionnaire is designed as a self-assessment tool for contractors to identify their ESG performance. Centennial then evaluates and gives each candidate a score based on the actual performance and supporting evidence before finalizing the selection process.

MAJOR INCIDENT MANAGEMENT FOR CONTRACTORS

The Company not only places importance on safety of the employees but also on the contractors. In October 2020, one of the contractors working for Centennial, our subsidiary in Australia, has faced a head injury during timber props installation. He was hammering a timber wedge when a wedge at the top of the prop fell on his head, causing a lost time injury for 11 days. At the time of incident, an immediate correction was first activated by prohibiting all timber works around the mine until investigation was completed. Centennial then set an investigation team to identify unsafe actions and conditions and list remedial measures. The investigation report showed an unsafe action of incorrect placement of wedge and unsafe condition of no timbering rules for the sites. To prevent a recurrence of the incident, corrective action procedures were developed to prohibit the use of large wedges and prescribe the timbering rules.

CUSTOMER & PRODUCT STEWARDSHIP

Commitment to understanding customer's needs and maximizing customer satisfaction through product and service is the Company's priority. Also, conducting business in alignment with social and environmental responsibility is the Company's ultimate goal in operating business.

	2020	Target 2020
Number of complaints regarding customer privacy	0	0
Number of complaints regarding safety and environmental issues from the use of products	0	0
Proportion of customer complaints being timely handled	NA*	100%

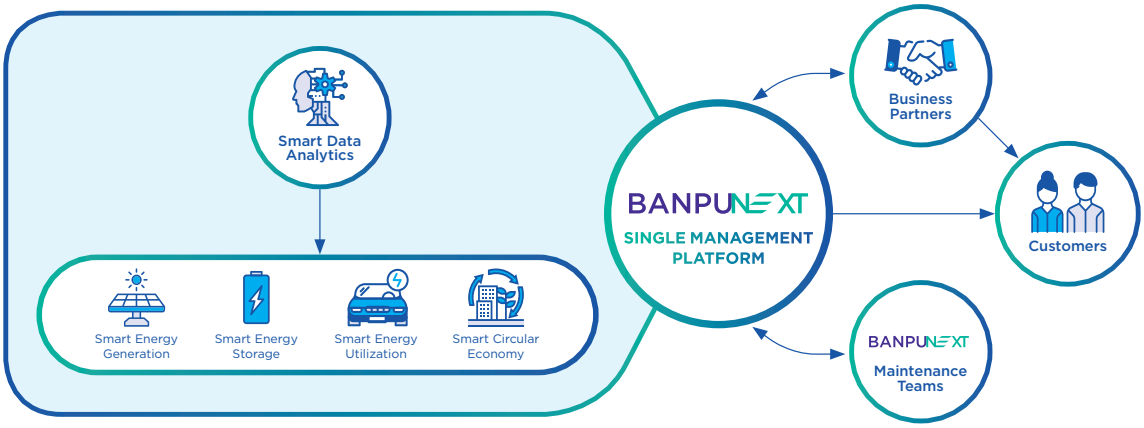
* No complaints

PERFORMANCE

In 2020, the Company can maintain a good performance in customer & product stewardship. There were no complaints received regarding product and service delivery, customer privacy as well as safety and environmental issues from the use of the Company's products.

BANPU NEXT IOT PLATFORM

Banpu NEXT has developed the IoT platform to enhance customer experience, both in terms of speed and service quality. The platform is designed to collect data from IoT devices installed at customers' sites such as solar roofs and microgrids. The data is then uploaded to the cloud and processed by streaming analytics. With big data on the cloud, the Company can ensure prompt customer service by providing predictive maintenance for potential problems. In addition, the Company can also develop Software as a Service (SaaS) such as web or mobile applications according to the customers' demand. Business partners can also integrate their services on top of the Company's IoT platform and provide the ultimate experience to their end-users.



MANAGEMENT APPROACH

The Code of Conduct clearly states that the Company will deliver products and services that meet customers' expectations. To guarantee the customers' trust, several management approaches have been developed and standardized across business units. Moreover, material safety data sheet (MSDS) is available to the customer upon request. Safety and environmental issues from the use of products are also identified and managed with specific measures. Technical support for efficient product-use with zero safety and environmental risk is also provided.

• Complaint Management

The Company provides various complaint channels such as telephone, email, and websites. The complaint management system was also established with the standard operating procedure, for example, response time to the customer within the next business day.

• Customer Satisfaction Management

The customer satisfaction survey is regularly conducted. The individual interview is also performed to gain insights into the specific issues and customer's expectations.

In practice, the management approach may vary according to each business context in the following examples:

Business	Example of customer relations approach
Mining	• Regular customer site visits • Knowledge sharing sessions • Quarterly performance reports • Open house for customers
Thermal power	• Regular customer site visits • Technical supports
Renewable power	• Knowledge sharing sessions • Performance reports
Solar rooftop	• Technical supports • Returns on investment (ROI) evaluation • 24-hour customer services

ECONOMIC DISTRIBUTION

The Company believes that business should focus not only on profitability, but also consider how to distribute economic values among related stakeholders. The economic distribution is therefore important for the Company at the heart of sustainability.

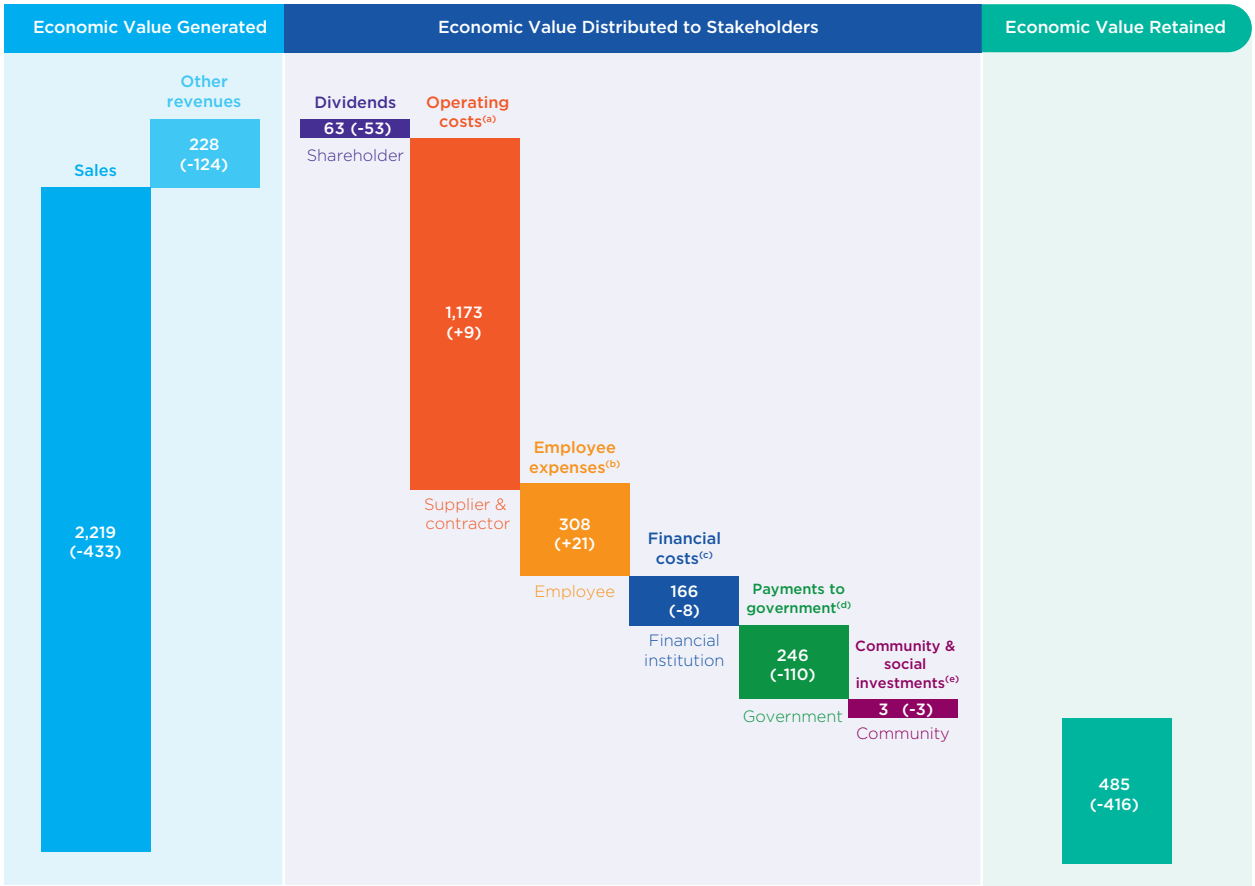
	2020	Target 2020
The ratio of the dividend payout to net profits	NA*	50%

* The Company recorded a net loss in 2020.

Note: Dividend payments are dependent upon cash flow, the investment initiatives of the Company and its subsidiaries, and other legal requirements.

PERFORMANCE

In 2020, even though the Company recorded a net loss, the dividends were paid with amount of USD 63 million to the shareholders. Moreover, the Company maintained economic value distributed among all key stakeholders with details as follows:



Units: USD millions

(a) Include contractor costs, fuel costs, and all other operating costs

(b) Include remuneration and benefits, provident fund contributions, employee development expenses

(c) Include interest and financial expenses

(d) Include royalty fee, corporate income tax, local maintenance tax, property tax, specific business tax, and other taxes and payment to the government

(e) Include community development expenses, corporate social responsibility activities and land compensation

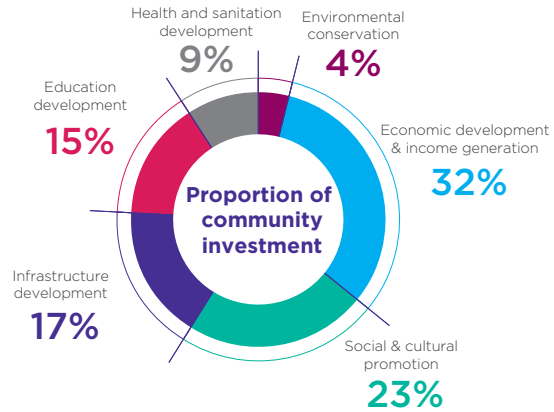
MANAGEMENT APPROACH

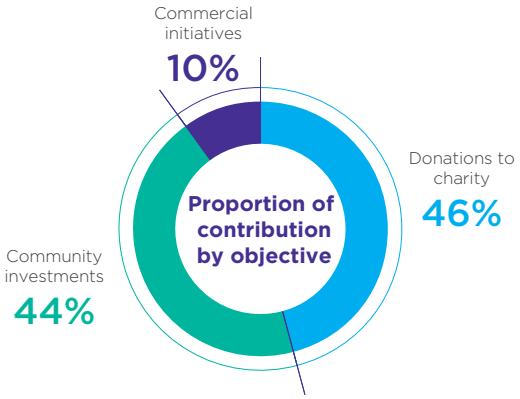
The Company aims to share wealth to related stakeholders in order to show good corporate citizenship. The Company places emphasis on taking responsibility to the countries where it operates by paying taxes and fees to the local authorities, local employment, and spending on the local products or services as much as possible. For transparency, the economic value distributed data and the transfer pricing documents for intra-group services transactions are verified by the third party and made available to related stakeholders. The data relating to community and society is collected based on international standards such as the London Benchmarking Group (LBG) framework. The key channels that the Company distributed economic value generated are as follows:

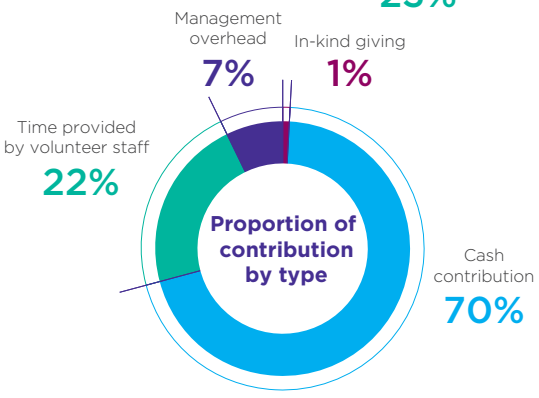
Stakeholder	Key distribution
Shareholder	• Dividends
Supplier and Contractor	• Contractor costs • Fuel costs • All other operating costs
Employee	• Remuneration and benefits • Provident fund contributions • Employee development expenses
Financial Institution	• Interest • Finance expenses
Governance	• Royalty fee • Corporate income tax and local maintenance tax • Property tax, specific business tax and other taxes • All other payment to the government
Community	• Community development programs • Corporate social responsibility activities • Land compensation

CORPORATE COMMUNITY AND SOCIAL INVESTMENT

The Company places great importance on supporting and investing in the development of communities and society with the goal to balance beneficial value across stakeholders. To ensure a clear direction on community investment, the Company has applied the London Benchmarking Group (LBG) framework as guideline in categorizing the corporate community investment.







EFFICIENCY & RELIABILITY OF POWER PLANTS

Customers expect the reliability of both electricity and heat supply as it impacts the industrial process and well-being of people in the area. Moreover, maintaining the highest efficiency of power plants is the Company's top priority as it directly impacts the production cost.

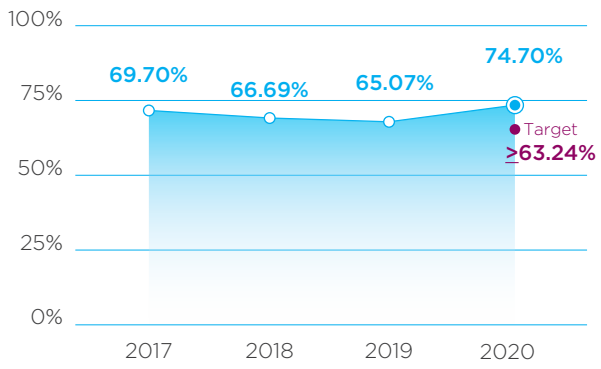
	2020	Target 2020
Overall efficiency*	74.70%	≥63.24%
Availability factor of power plants*	97.72%	≥94.34%

* Includes 3 combined heat and power plants in China only

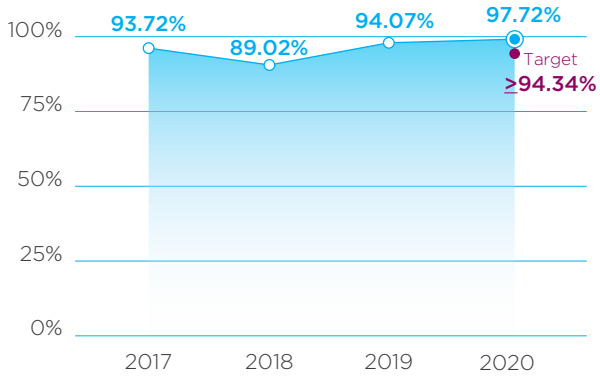
PERFORMANCE

In 2020, the Company can maintain excellent performance in both efficiency and reliability. The average overall efficiency for the 3 CHP plants was 74.70%, achieved a target of more than 63.24%. The average availability factor for the 3 CHP plants was 97.72%, higher than the target of 94.34%. Moreover, the unplanned outage was also better than plan.

OVERALL EFFICIENCY



AVAILABILITY FACTOR



MANAGEMENT APPROACH

The electricity generated from the combined heat and power (CHP) plant is sold to the national grid; however, the steam and hot water are sold directly to the industrial and residential customers, with high demand in winter. To ensure the reliability during peak season, all maintenances are planned to complete within summer. There are 2 types of maintenance. The major maintenances are scheduled every two years, taking 30-45 days, while the minor maintenances are scheduled annually, taking 10-20 days each time. The planned maintenances are performed to prevent the unplanned outage, maintain reliability, and enhance the plants' efficiency. Moreover, the Company improves power plants' efficiency by adopting digital technology to increase resource utilization efficiency and minimize energy loss.

SOCIOECONOMIC COMPLIANCE

The Company's business is subject to permits, licenses, laws and regulations, especially in the social and economic areas. A failure to comply with such requirements can result in significant fines, non-monetary sanctions, or, ultimately, loss of license to operate. Monitoring socioeconomic compliance is therefore part of day-to-day business operations.

	2020	Target 2020
Significant socioeconomic non-compliance	0	0
• Number of significant fines	0	0
• Number of significant non-monetary sanctions	0	0

PERFORMANCE

In 2020, the Company had neither significant fines nor non-monetary sanctions from socioeconomic non-compliance in all business units.

MANAGEMENT APPROACH

The corporate compliance management system has been developed based on ISO 19600 with 4 key measures as follows:

1. Identify compliance risks by monitoring relevant laws and regulations in all countries where the Company operates
2. Conduct compliance self-assessment whether there are any risks in regard to non-compliance at each business unit
3. Provide support to business units to ensure compliance status
4. Report compliance status to the management and the Audit Committee regularly

To ensure the effectiveness of compliance management system, the Company enhances compliance awareness of the employees through various communication channels, including monthly e-newsletters and in-house training sessions. Moreover, the compliance department has been established at each business unit as a direct responsible function. The compliance management application was developed and deployed across business with real-time monitoring in compliance risks and status. The examples of key laws and regulations which may relevant to a non-compliance are described as follows:

Aspect	Example of laws and regulations
Business ethics	• The securities and exchange act • The code of best practices of directors of listed companies • The principle of good corporate governance • Antitrust/anti-competitive practices
Employment	• Labor law • Occupational health and safety law
Community	• National heritage and culture law • Indigenous protection law

RISK MANAGEMENT

The business environment undergoes volatility and uncertainty situations. Paying close attention to an effective risk management not only prevents any possible adverse impacts on the business but also enhances the business opportunities for the Company.

	2020	Target 2020
Proportion of business units with key risk indicators	100%	100%
Coverage of ESG issues* in the enterprise risk management	87%	>70%
Proportion of business units** with ESG risk management plans	100%	100%

* Based on COSO
** For business unit(s) with high priority ESG risks

PERFORMANCE

In 2020, the Company conducted the ESG risk assessment and developed risk management plans covering corruption, climate change, water and human rights aspects. The Company also implemented risk management for personal data privacy and cybersecurity at the head office and related business in Thailand. In addition, the Company has been enhancing the functionality of Compliance Risk Management (C-RiM) application to provide a more insightful and holistic view.

Risk category	Key risk
1. Strategic risk	• Strategic planning and implementation • Human resource management and development to facilitate future growth • Corporate reputation • Inability to increase coal reserve for commercial purpose • Investment in new business • Climate change
2. Financial risk	• Exchange rate • Taxation • Volatility in coal and natural gas prices • Breach of financial obligations under loan agreements with financial institutions
3. Operating risk	• Mining business • Power business • Shale gas business • Solar rooftop business • Occupational health, safety, and environment • Social and community impact
4. Compliance risk	• Legal compliance • Policy and regulatory changes
5. Emerging risk	• Technology disruption • Changed climate (physical climate-related risk) • Cyber threat • COVID-19 pandemic

MANAGEMENT APPROACH

The Company's group-wide risk management is under the supervision of the Board of Directors through the Audit Committee. Risk management is integrated into all business processes, from strategic development to operational activities. At a corporate level, Risk Management Committee (RMC) chaired by the CEO has been established to monitor the high priority risks, including the mitigation plans and performances at all business units. RMC reports performance to the Audit Committee and the Board of Directors on a quarterly basis. Risk appetite is reviewed regularly to align with the Company's strategy with the latest revision in 2018. Apart from the RMC, there are also other meetings relevant to risk management such as the financial management committee and the commodity risk management committee.

At an operational level, each business unit identifies, analyzes, mitigates, and monitors its risks with a requirement to set key risk indicators and submits a quarterly report to the enterprise risk management team. Environmental, social and governance (ESG) aspects are also integrated as part of the risk identification and management process. It is also required for all business units with high ESG risks to develop the risk management plans.

To ensure that risk management is integrated into day-to-day operations, the Company developed the mobile application "Compliance Risk Management" or C-Rim as a real-time compliance data platform and promotes employee awareness through various communication channels, such as e-newsletter, town hall and other activities.

RISK FROM COVID-19

The COVID-19 pandemic disrupted almost every sector across the world. For the private sector, business resilience is the key strategy of all companies. To ensure smooth business operations, the Company has effectively implemented the business continuity management system by leveraging well-prepared emergency contingency plans and online communication technology. Where applicable, work from home has been implemented to reduce the risk to the employees. Even though the epidemic has not significantly impacted the Company's operations, the Company has embraced the "New Normal" that comes with higher energy consumption in the consumer sector as more people work remotely by digital transformation to future-proof the Company's competitiveness as an international versatile energy provider.

RISK FROM CYBER THREATS

Due to the digitalization trend, most of the Company's processes rely on the online platform. On the other hand, the risk of cyber threats over important information or IT system disruption would affect the Company's business continuity and reputation. In order to respond to such risk, the Company implemented the following risk management measures:

- Announced the Information and Cybersecurity policy and practices
- Educated employees on cyber threats, including practices and prevention against cyber threats
- Conducted the disaster recovery plan (DRP) exercise annually with a simultaneous situation of cyber-attack
- Planned for ISO 27001 (IT infrastructure and information security management) certification

BUSINESS CONTINUITY MANAGEMENT

The environment in which business is conducted could experience a disruption resulted from either natural or man-made threats. To minimize potential losses and maximize business resilience, the Company considers business continuity management as one of the key strategies.

	2020	Target 2020	Target 2025
Coverage of CMT/IMT exercise	100%*	50%	100%

* The real activation of CMT/IMT for COVID-19 considered as a BCP exercise

PERFORMANCE

In 2020, the Company renamed an indicator from "Coverage of annual BCP exercise" to "Coverage of CMT/IMT exercise" to represent business continuity plan exercise across all business units. The new target "Coverage of BCP exercise for critical business functions" was also discussed. The long-term targets towards 2025 were approved for all critical business functions across the group.

Due to the COVID-19 crisis, the BCP exercise was not conducted in 2020 as a real activation of the crisis management team (CMT) and incident management team (IMT). The teams successfully responded to the crisis as no business interruption and no impact on the product or service deliverable. In addition, Banpu China Investment Co., Ltd (BIC) received ISO 22301:2012 certification for its business continuity management systems from China Quality Certification Center. The assurance scope included 3 CHP plants, 7 solar power plants, and coal business operation and business support functions at the Beijing office.

MANAGEMENT APPROACH

The Company's business continuity management system was developed based on the international standards such as ISO 22301:2012 and encompasses various processes including critical business function identification, business impact analysis, risk assessment, business continuity plan (BCP) development and BCP exercise. The crisis and emergency management teams have been established with classification into 4 levels: corporate level, country level, site level, and front-line level. Moreover, support teams such as Crisis Communication Team (CCT), Disaster Recovery Team (DRT), and Relative Response Team (RRT) have also been appointed.

The BCP exercises at each level are carried out regularly. For example, the head office in Thailand conducts the BCP exercise at the corporate and country levels on an alternate year basis. At country level, the Company performs an exercise at key business operations regularly with target to conduct an exercise at all business operations annually from 2025 onwards. In addition, the critical business function shall develop its BCP and exercise annually. The Company plans to broaden the exercise to cover more than 50% of critical business functions by 2025. The system performance is then reviewed annually by the Company through internal audits and management reviews.

DATA PRIVACY & CYBER SECURITY

Due to digitalization, information technology has been evolving to facilitate cloud storage. On the other hand, the risk for cybersecurity threat becomes significantly higher. IT system disruption and data breaches, especially customer data can severely damage the Company in terms of finance, reputation, and customer trust. Therefore, it is crucial for the Company to have a preventive policy in place to ensure business continuity.

	2020	Target 2020
Number of cybersecurity breaches	1	0
Number of IT infrastructure incidents	1	0
Incident response rate	NA*	-

* Data collection system is under standardization.

PERFORMANCE

In 2020, the Company experienced 2 IT incidents. In February, there was a Ransomware infiltration into the Company's premises leading to temporary inaccessibility to all corporate applications. The IT infrastructure incident occurred in May, which was caused by electricity failure during the server room maintenance. The server went down which affected the financial application. For both cases, the Company can effectively respond to the incident and be able to recover the system without significant impact on the data and business operations. However, the incident response rate data is not yet available as the data collection is under standardization. The Company expects to publish this performance data in Sustainability Report 2021.

MANAGEMENT APPROACH

The Company used the "ISO/IEC 27001 Information Security Management" as a guideline for developing the Information and Cybersecurity Policy which is applied across the entire organization. Leaks of customer data and cyber-attack on the Company's database are considered as one of emerging risks. Therefore, cybersecurity is built into enterprise risk management. The audit committee takes responsibility to oversee cybersecurity issues, focusing on regulatory compliance and risk management associated with the digital technology utilization. Furthermore, the Company conducts the Disaster Recovery Plan (DRP) exercise annually for the Company's critical data, namely financial data and enterprise documents. The effectiveness of response plan is then accessed by the third party as a part of the business continuity management system certification.

To ensure transparency, privacy, and the protection of all information, the Company, at the same time, has implemented the privacy policy to define the purpose of data collection, disclosure of information, and security of personal data. This is to ensure data protection to any persons disclosing their personal information to the Company, especially customers and the business partners. The Company has built the awareness of employees to be aware of cybersecurity and incident caused by cybercriminals, including employee's role in protecting information assets stored in the Company own-commuter through various channels. Cybersecurity awareness is included in the IT orientation package to educate new employees, and cybersecurity news is also regularly communicated via email.

ENVIRONMENT

Water consumption intensity

0.237
m^3/tonne
Mining business

0.857
m^3/MWh
Power business

87%
Hazardous waste reused & recycled for mining business

GHG emissions

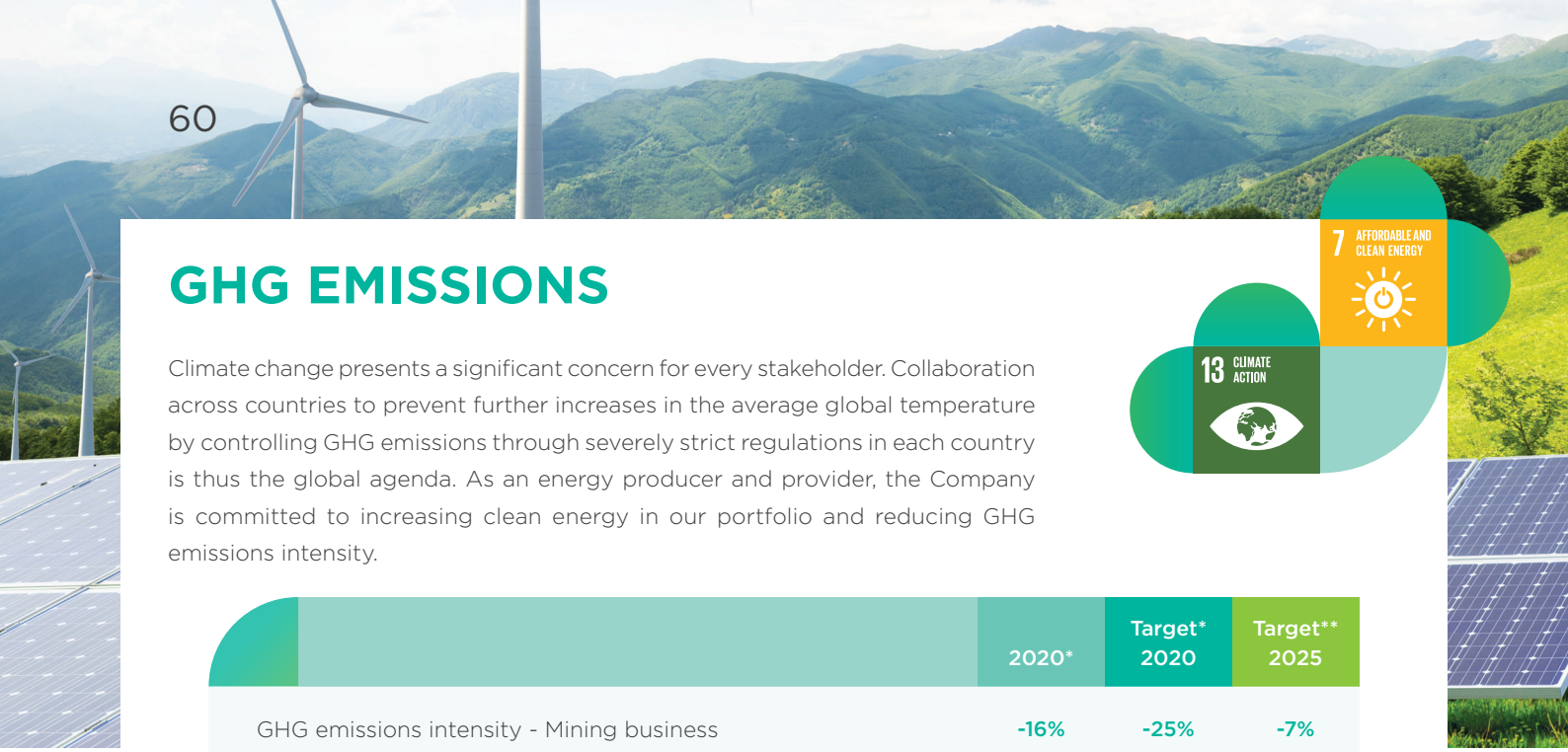
-16%
Mining business

-1%
Power business

(against baseline 2012)

100%
Assessed for potential biodiversity impact

0
Significant environmental incidents



GHG EMISSIONS

Climate change presents a significant concern for every stakeholder. Collaboration across countries to prevent further increases in the average global temperature by controlling GHG emissions through severely strict regulations in each country is thus the global agenda. As an energy producer and provider, the Company is committed to increasing clean energy in our portfolio and reducing GHG emissions intensity.

	2020*	Target* 2020	Target** 2025
GHG emissions intensity - Mining business	-16%	-25%	-7%
GHG emissions intensity - Power business	-1%	-15%	-20%

* Against 2012 baseline
** Against the business as usual (BAU)

PERFORMANCE

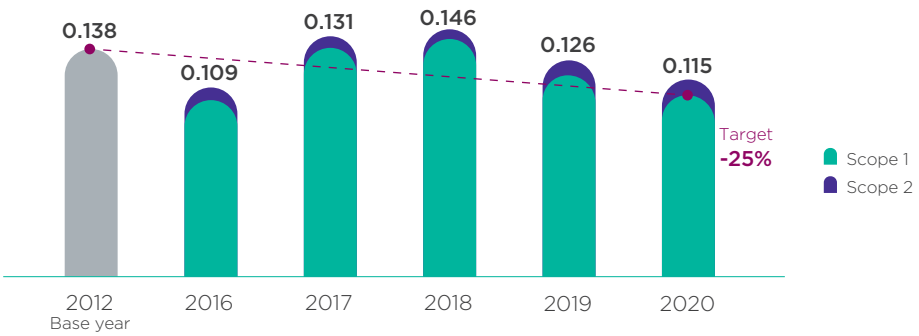
In 2020, the Company completed climate-related risks and opportunities assessment following the Task Force on Climate-related Financial Disclosures (TCFD) recommendation and had been the supporter for the TCFD framework. Moreover, the new GHG emissions reduction targets for 2021-2025 have been set for mining business (7% reduction from BAU) and power business (20% reduction from BAU). Apart of all business units use AR5, the operations in Australia had changed the Global Warming Potential (GWP) from IPCC: AR4 to IPCC: AR5. Therefore, the GHG emissions for the base year (2012) and the past 4 years (2016-2019) have been re-calculated.

Mining Business

The GHG emissions intensity was 0.115 tonnes CO_2e/tonne finished coal, decreased by 16% compared to the 2012 baseline, which was not achieved the annual target. This is due to the dynamic nature of coal seam at one of the underground mine resulting in the greater-than-anticipated amount of methane. Even though the abatement system came back to normal operation in 2020, however, the gas exceeded the capacity of the system. To cope with such situation, the gas engine is being installed to utilize the methane for electricity generation with plan to commence operation in 2021. Moreover, the 2 MWe captive solar power plant at Airly mine has operated since April 2020. This could generate 1,658 MWh of electricity to substitute the electricity purchased.

In Indonesia, a microgrid system with 2 MW of Solar PV and 2 MW of battery storage is being installed at Trubaindo mine and expected to be completed in 2021. In addition, all biodiesel consumed in Indonesia was changed from B20 to B30, resulting in the increase of biogenic GHG scope 1 since it consists of palm oil.

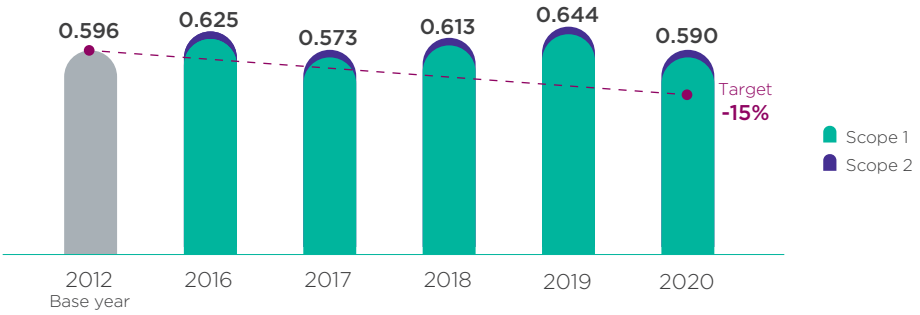
GHG EMISSIONS INTENSITY - MINING BUSINESS
(tonnes CO_2e/tonne finished coal)



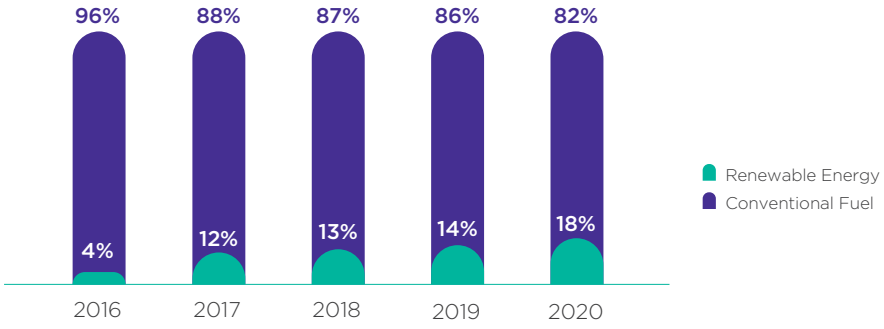
Power Business

In 2020, the GHG emissions intensity was lower than the previous year as a result of the commercial operation of 2 solar power plants in Japan and the effective energy efficiency improvement programs at 3 CHP plants in China. However, the target was not achieved as the intensity of 0.590 tonnes CO_2e/MWh was just 1% reduction from 2012 baseline. Moreover, the proportion of electricity generated from renewable energy increased to 18% of total electricity generated.

GHG EMISSIONS INTENSITY - POWER BUSINESS
(tonnes CO_2e/MWh)



PROPORTION OF ELECTRICITY GENERATED



LIGHT & LEARN

With the Company's belief that "Learning is the Power of Change and Development". Banpu NEXT launched the "Light & Learn" project to create learning opportunities for youths in the remote and electricity-deprived areas. Since 2017, the Company has installed a 1,000-watt solar panel with battery storage at selected schools to generate adequate electricity throughout the day. The satellite education system was also installed to facilitate distance learning. Since the project started, the Company has installed solar power systems for 68 schools. For each affiliated school, the system generated 1.46 MWh of electricity/year or equivalent to 845 kg CO_2e generated if such electricity is obtained from the grid.

MANAGEMENT APPROACH

Climate change risk is considered and integrated into the Company's enterprise risk management. The Company has set climate change management as one of the KPIs of CEO and senior management of relevant business units. The Climate Change Committee has been established to ensure the implementation of the climate change management strategy focusing on 4 measures.

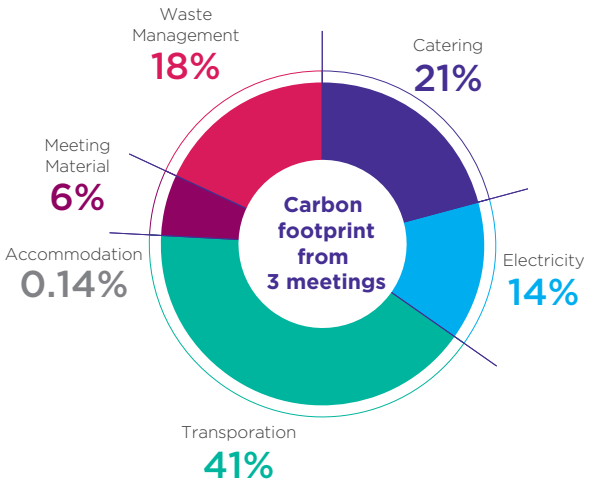
Measure	Operating direction	Key progress
Mitigating GHG emissions	• Ensuring compliance with related laws	• Announced climate change policy since 2010 and revised in 2018
	• Seeking to reduce GHG emissions	• Announced long-term GHG reduction targets since 2010 (2015 targets announced in 2010, 2020 targets announced in 2016, and 2025 targets announced in 2020)
	• Integrating carbon pricing in the investment decision	• Implemented internal carbon pricing since 2018
Being adaptive	• Monitoring risks, opportunities, and implications of climate change	• Assessed and reported climate change risks to the Risk Management Committee since 2004
	• Planning for business continuity regarding climate change	• Considered the physical climate change risk when developing the Business Continuity Management (BCM) plan since 2011
Being a part in a low carbon society	• Seeking to invest in renewable energy business	• Invested in renewable power business since 2016 • Invested in solar rooftop business since 2017
	• Supporting initiatives, research and development (R&D) of low GHG emissions technologies	• Invested in R&D for energy storage system, electric vehicle, and smart city
	• Seeking to engage with stakeholders to reduce GHG emissions	• On progress
Participation in a climate change community	• Sharing the performances and GHG management practices	• Participated in CDP-Climate change since 2010, CDP-Water since 2017, and CDP-Forest since 2019
	• Being a member of the climate change committee or taskforce	• Prepared to disclose information following the Task Force on Climate-related Financial Disclosed (TCFD) recommendation

To determine the GHG emissions, the Intergovernmental Panel on Climate Change (IPCC) Fifth Assessment Report (AR5) was used on Global Warming Potential (GWP). The emission factors were derived from the revised edition of the Corporate Accounting and Reporting Standards and if applicable, the specific emission factors taken from the regional guidelines were used. In this report, 5 gases are discussed due to their relationship with normal operational activities including carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), and sulfur hexafluoride (SF_6). The GHG target was set against the 2012 baseline – coincidentally the same year that the Australian business unit was integrated into the overall corporate performance. Furthermore, the Company also takes into account the indirect GHG emissions (Scope 3) in 3 specific categories: the use of products sold, business travel associated with the Head Office in Bangkok, and upstream transportation and distribution. The sources of GHG emissions for each business are explained below:

Business	Key activity	GHG source (Scope 1)										GHG source (Scope 2)
		Diesel	Biodiesel	Gasoline	Coal	Methane	Explosive	HFCs	SF_6	$CaCO_3$	Waste gas	Electricity imported
Mining	Electricity generation		●		●				●			
	Coal extraction	●	●				●					●
	Coal hauling	●	●									●
	Coal processing											●
	Coal seam & stockyard					●						
	Barging		●									
	Supporting activities	●	●	●				●				●
Thermal power	Boiler	●			●						●	
	Coal stockyard					●						
	Air quality control									●		●
	Substation								●			
	Auxiliary system											●
	Supporting activities	●		●				●				●
Renewable power	Auxiliary system											●
	Supporting activities	●		●								●
Solar rooftop	Auxiliary system											●
	Supporting activities	●		●								

CARBON NEUTRAL MEETING

The Company has conducted a carbon footprint assessment for a number of major events since 2018. The main objectives are to raise awareness of employees and stakeholders and strengthen internal collaboration. In 2020, the Company assessed carbon footprint for 3 events, including Annual general meeting, Annual strategic meeting, and HSEC Summit. From calculation, the GHG emissions from those events were 6 tonnes CO_2e which 41% was generated from the transportation activities. With intention to conduct a carbon neutral meeting, the Company has offset the GHG emissions with the carbon credits from Thailand voluntary emission reduction project (T-VER). Moreover, all carbon neutral meetings have been approved by the Thailand Greenhouse Gas Management Organization (TGO).



ENERGY

Energy is one of the key factors which drives global economic development. The energy markets around the world are currently experiencing challenges in balancing supply and demand since the rapid rise of energy demand. This resulted in the price fluctuation of operating costs across various industries as well as the Company's businesses. Therefore, the Company emphasizes on maximizing the efficiency of energy management.

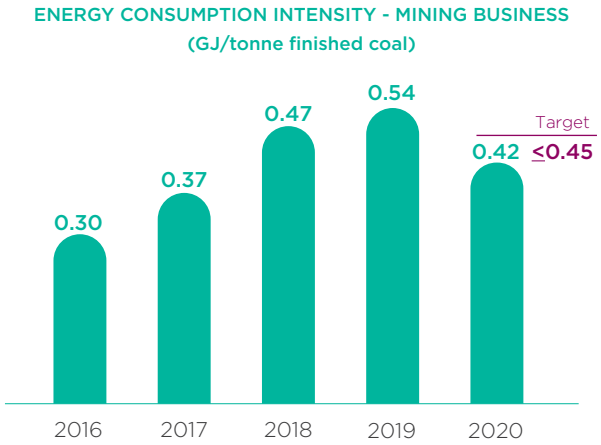
	2020	Target 2020	Target 2025
Energy consumption intensity – Mining business (GJ/tonne finished coal)	0.42	≤0.45	≤0.428
Energy consumption intensity – Power business (GJ/MWh)	1.46	≤1.72	-

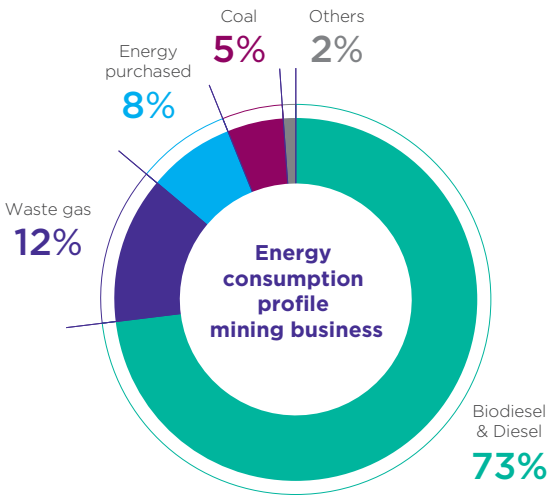
PERFORMANCE

In 2020, in Australia, the Company started operating the 2 MWe captive solar power plant at Airly mine. In Indonesia, the proportion of alternative energy was increased because of the change from B20 to B30. For China, Zhending power plant has been recognized as one of the "Top 100 Eco-environmental Innovation Projects" for the excellent performance on energy saving and environmental protection on the "flue gas treatment and waste heat recovery project".

Mining Business

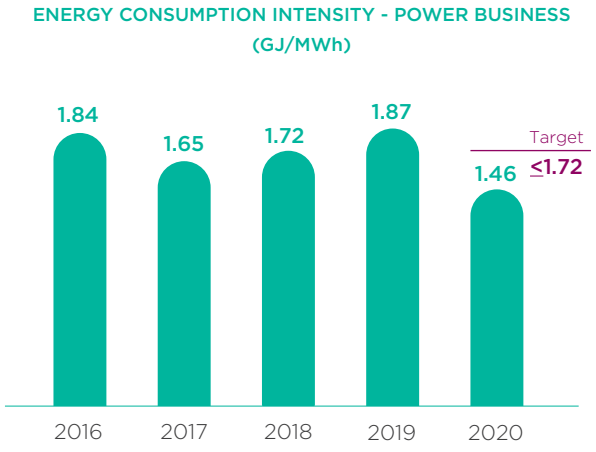
In 2020, the energy consumption intensity was 0.42 GJ/tonne finished coal, which decreased 7% compared to the previous year making the Company achieved the target. One of the reasons is the 8% reduction of the energy consumed by flared from gassy mine.

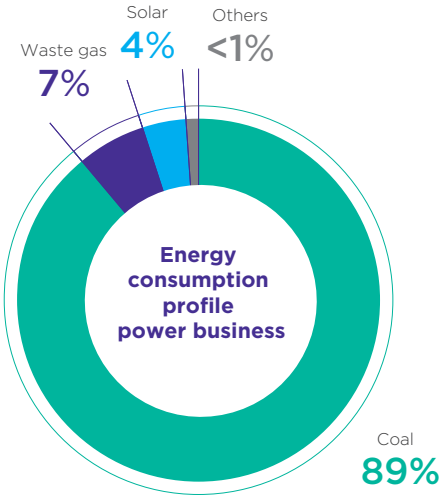




Power Business

In 2020, the energy consumption was 1.46 GJ/MWh which, decreased 22% from the previous year and 15% reduction against the target. This was a result of process efficiency optimization in response to the high demand of customers and the waste heat recovery project at Zhending.





MANAGEMENT APPROACH

The Company aims to maximize the energy efficiency by integrating an energy management plan with the GHG emissions management strategy. However, the energy consumption patterns in a particular business could be different from the others; for example, open-pit mining is prevalent in Indonesia, while mining in Australia is carried out underground. The key energy-consuming activities for each business are described below:

Business	Key activity	Energy source							
		Diesel	Biodiesel	Gasoline	Coal	Solar	Waste gas	Electricity imported	Electricity self-generated
Mining	Electricity generation		●		●	●			
	Coal extraction	●	●					●	
	Coal hauling	●	●					●	
	Coal processing							●	●
	Barging		●						
	Supporting activities	●	●	●		●		●	●
Thermal power	Boiler	●			●		●		
	Auxiliary system							●	
	Supporting activities	●		●		●		●	●
Renewable power	Electricity generation					●			
	Auxiliary system							●	
	Supporting activities	●		●				●	●
Solar rooftop	Auxiliary system							●	
	Supporting activities	●		●					

This can explain some of the differences in energy consumption and leads to different energy conservation activities as follows:

- **Open-pit mining business**: Most of the energy consumption is in overburden removal and coal hauling activities. Accordingly, the energy conservation projects focus on improving the energy efficiency of these transportation systems for example, change of haul truck to conveyor belt, improvement of transportation routes for maximum efficiency of fuel consumption, etc
- **Underground mining business:** Most energy is consumed for coal cutting with heavy machines and coal transportation by conveyor belts. Therefore, the energy conservation projects focus on enhancing the efficiency of electricity consumption, for example, the use of automatic control systems to calculate the optimal speed in coal cutting and conveying, and regular machine inspections to maintain equipment efficiency.
- **Thermal power business:** Most of the energy is consumed in the boiler to generate electricity. The Company accordingly emphasizes the efficiency improvement by properly balancing the proportion of electricity and heat production in order to meet the changing customer demand across different seasons.
- **Renewable power and solar rooftop business:** Most of the energy is primarily consumed for transportation activities. The Company therefore places emphasis upon the proper traveling plan to maximize fuel consumption efficiency.

MUVMI ON-DEMAND TUK-TUK SERVICE

Banpu NEXT collaborated with Urban Mobility Tech Co., Ltd. (UMT) to provide an on-demand electric Tuk-Tuk service in Bangkok called MuvMi. Until now, there are 98 units in MuvMi's Tuk-Tuk fleet. Compared to the ordinary Tuk-Tuk which consumes LPG, MuvMi's Tuk-Tuk can substitute 170 cubic meters of LPG and reduce 4,237 GJ of energy consumption which equivalent to 224 tCO_2e of GHG emissions in 2020. Moreover, there are zero air emissions from the fleet. Afterward, it could leverage incomes of the drivers.

WASTE HEAT RECOVERY PROJECT AT ZHENGDING


荣誉证书

石家庄诚峰热电有限公司

经行业推荐专家评审你公司承担的烟羽治理及烟气余热回收项目工程入选“2020年生态环境创新工程百佳案例”。

特发此证，以资鼓励。

二〇二一年一月

In 2019, Zhengding power plant developed the "flue gas treatment and waste heat recovery" project. By this project, the treated exhaust gas is circulated to pre-heat the process water prior to discharge through the stack. With the circulation, 26 MW of waste heat can be recovered each year, which leads to the reduction of 10,000 tonnes of coal consumption or equivalent to 26,000 tonnes CO_2e per year. Moreover, the Company gained economic value up to USD 1.5 million. Owing to the excellent on energy saving and environmental protection, this project was selected as one of the "Top 100 Eco-environmental Innovation Projects" in 2020 by the Chinese Environmental News Agency. Importantly, this is the only project across the companies in the electric utility industry receiving this recognition.

AIR EMISSIONS

Releasing air pollutants to the atmosphere, especially from thermal power plants is a serious concern as they are harmful to both human health and the environment of surrounding communities. Air emissions management is thus considered as an important issue for the Company. Ineffective management may suspend the existing operations and lead onto losing stakeholder's confidence.

	2020	Target 2020	Target 2025
Air emissions intensity - Mining business (g/tonne finished coal)	SO_2 = 22.2	≤30	≤30
	NO_x = 39.2	-	-
	PM_{10} = 8.5	-	-
Air emissions intensity - Power business (g/MWh)	SO_2 = 24.1	≤76.6	≤76.6
	NO_x = 39.9	≤118.4	≤118.4
	TSP = 2.6	≤23.0	≤23.0
	Hg = 0.001	-	-

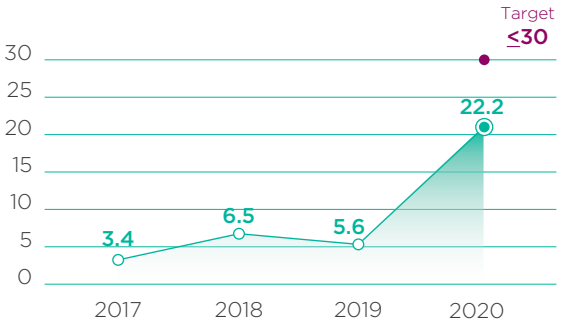
PERFORMANCE

In 2020, the long-term targets towards 2025 were announced. The target and performance of SO_2 emissions intensity for mining business were changed from point source to nonpoint source to reflect the majority of the emissions. However, NO_x and PM_{10} emissions intensity reported are a point source, same as the previous year.

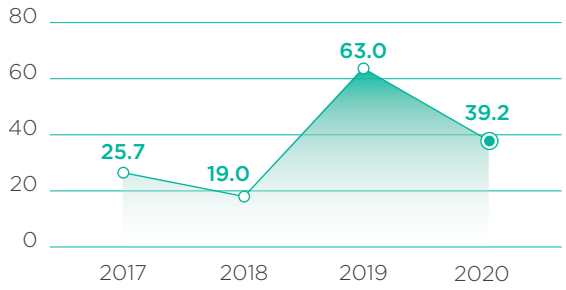
Mining Business

The Company met the SO_2 emissions target as emissions intensity was 22.2 g/tonne finished coal. Even though there was no specific target, NO_x and PM_{10} emissions intensity significantly decreased from the previous year.

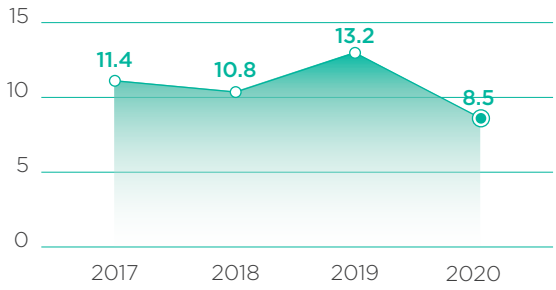
SO_2 EMISSIONS INTENSITY - MINING BUSINESS
(g/tonne finished coal)



NO_x EMISSIONS INTENSITY - MINING BUSINESS
(g/tonne finished coal)



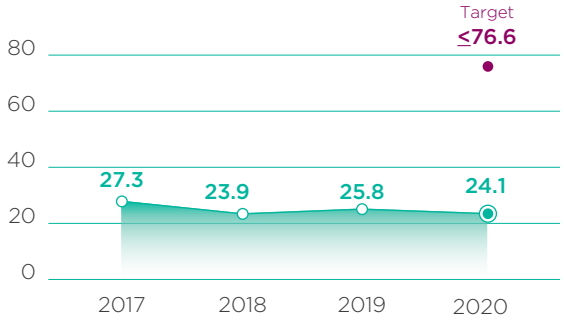
PM_{10} EMISSIONS INTENSITY - MINING BUSINESS
(g/tonne finished coal)



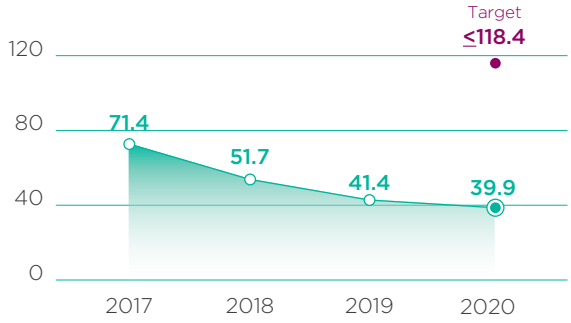
Power Business

The air emissions intensity was 24.1, 39.9 and 2.6 g/MWh for SO_2, NO_x and TSP respectively. In addition, the Hg was also measured with a significant level as low as 0.001 g/MWh and considered no impact on the environment. The air emissions intensity has been reduced continuously; the Company therefore intended to maintain emissions control measures at the existing level.

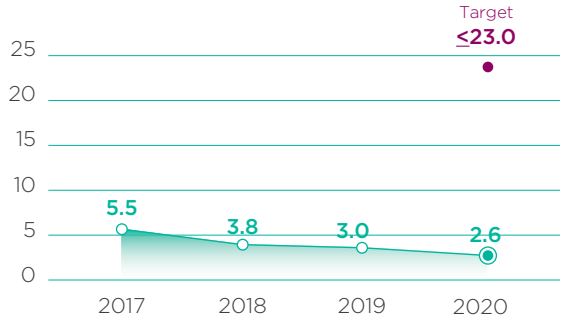
SO_2 EMISSIONS INTENSITY - POWER BUSINESS (g/MWh)



NO_x EMISSIONS INTENSITY - POWER BUSINESS (g/MWh)

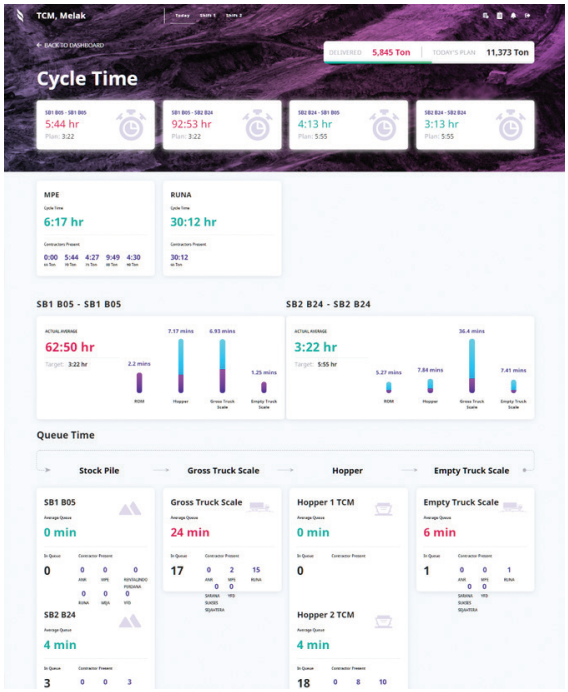


TSP EMISSIONS INTENSITY - POWER BUSINESS (g/MWh)



COAL HAUL TRACKING SYSTEM

The Company developed "Coal Haul Tracking (CHaT)" system to provide a real-time coal hauling information for improving overall hauling performance in Bharinto mine and Trubaindo mine in Indonesia through the design thinking process. The minimum viable product (MVP) of this project has focused on reducing queue time. The significant reduction time was approximately 39% and could increase the hauling capacity of 73,000 tonnes per year. Consequently, this project could reduce 6,760 tCO_2e per year of GHG emissions. The Company planned to extend this project to other mine sites and added auxiliary features such as water truck tracking to enhance dust management.



MANAGEMENT APPROACH

There are 2 businesses considered to have air pollutants; mining business and thermal power business. The renewable power business and solar rooftop business generate a small amount of emissions load and can be considered insignificant. The key activities involved in pollution generation in mining and thermal power are outlined below:

Business	Key activity	Point source emissions			Nonpoint source emissions		
		SO_2	NO_x	PM/TSP	SO_2	NO_x	PM
Mining	Electricity generation	●	●	●			
	Coal extraction						●
	Coal hauling & storage				●		●
Thermal power	Boiler	●	●	●			

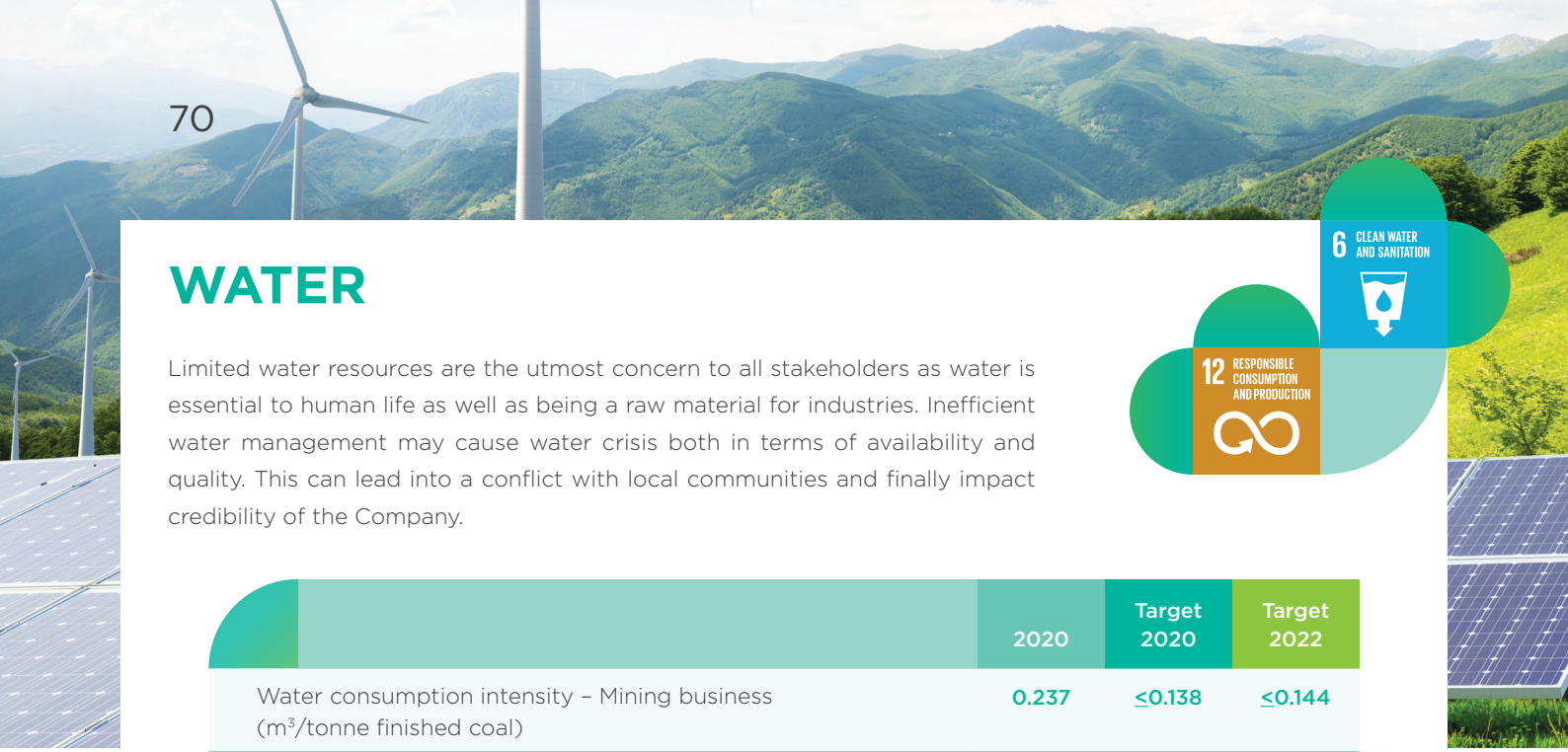
Mining Business

There are 2 types of emissions: point source and nonpoint source. The point source emissions, typically generated from diesel generator, are controlled by preventive maintenance to reduce the chance of incomplete combustion. For nonpoint source, 2 main pollutants include sulfur dioxide (SO_2) from fuel combustion at the hauling trucks and particulate matter (PM) from coal hauling and storage activities. Several initiatives to manage SO_2 and PM are undertaken such as using conveyor belts instead of trucks, water spraying at haul roads and coal stockyards, regular engine maintenance, and truck speed control. Furthermore, the Company regularly conducted air quality monitoring by third party in both operational areas and surrounding communities.

Thermal Power Business

Since most of the emissions at thermal power plants are a point source, the Company has placed emphasis on prevention at the source by engineering control, such as using a circulating fluidized bed (CFB) boiler. In addition, the Company has formulated a 5-year plan (2013-2018) to improve air pollution control systems at 3 combined heat and power (CHP) plants in China with over USD 43 million investment through the latest and efficient technology, such as flue gas desulfurization (FGD), selective non-catalytic reduction (SNCR) and electrostatic precipitators (ESP). Moreover, continuous emission monitoring system (CEMS) is also installed at the stack and surrounding communities to monitor the air quality in real-time so that any potential incident from the undesired emissions levels can be addressed immediately. The monitoring covers 4 key indicators; SO_2, NO_x, PM (total suspended particles: TSP) and mercury (Hg).

Air Pollutant	Prevention at Source	Air Emissions Control
SO_2	• Using a circulating fluidized bed (CFB) boiler • Using low sulfur coal	• Using flue gas desulfurization (FGD) unit
NO_x	• Using circulating fluidized bed (CFB) boiler • Using low NO_x burner	• Using selective non-catalytic reduction (SNCR) and selective catalytic reduction (SCR) methods
TSP	• Using low ash coal	• Using electrostatic precipitators (ESP)



WATER

Limited water resources are the utmost concern to all stakeholders as water is essential to human life as well as being a raw material for industries. Inefficient water management may cause water crisis both in terms of availability and quality. This can lead into a conflict with local communities and finally impact credibility of the Company.

	2020	Target 2020	Target 2022
Water consumption intensity – Mining business (m^3/tonne finished coal)	0.237	≤0.138	≤0.144
Water consumption intensity – Power business (m^3/MWh)	0.857	≤1.103	≤0.868

PERFORMANCE

In 2020, the Company improved the data collection system according to GRI 303 (2018) for mining business in Indonesia and power business in China. However, the data collection system is under standardization for the mining business in Australia. Moreover, the wastewater reuse project in Australia was fully operated in January 2020. The mine water from Springvale and Angus Place was sent for reuse as cooling water at the Mount Piper Power Station.

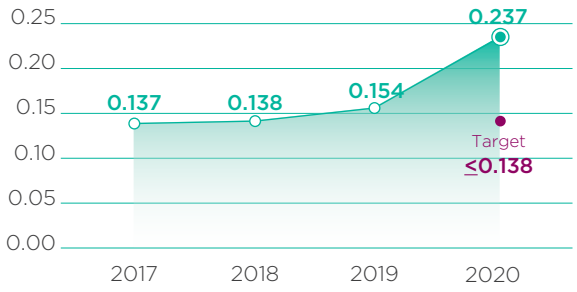
Mining Business

Although reused and recycled water was 6% increase compared to the previous year, the water consumption intensity was 0.237 m^3/tonne finished coal, which increased by 53% from the previous year because of the greater volume of water consumed from coal washing activities in Australia

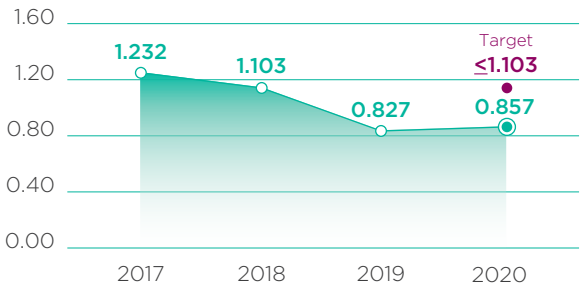
Power Business

In 2020, the water consumption intensity was 0.857 m^3/MWh, which increased 4% compared to the previous year as a result of the expansion of Luannan power plant in China. However, the Company had still achieved the annual target and continuously improved the volume of reused/recycled water.

WATER CONSUMPTION INTENSITY - MINING BUSINESS
(m^3/tonne finished coal)



WATER CONSUMPTION INTENSITY - POWER BUSINESS
(m^3/MWh)



MANAGEMENT APPROACH

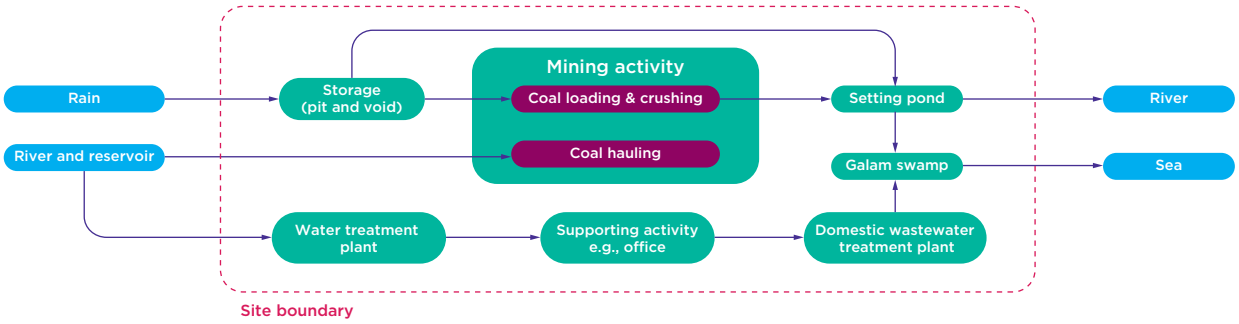
The Company's water management covers the process of water withdrawal, water consumption, and water discharge. To achieve long-term target towards a reduction of water footprint throughout product's life cycle, the Company is expanding water management to the watershed level, starting from completing a water balance at each operational site.

Besides, the Company also closely monitors the quality of water discharge through both internal and external parties. The parameters, frequency and monitoring methods are basically varied from one site to another based on local regulatory requirements.

WATER FLOW DIAGRAM

To support the long-term water footprint reduction, the Company has a plan to develop the water flow diagram for all business units by identifying water sources, activities consuming water, and destination of water discharge. In 2020, five operating sites in Indonesia had completed the water flow diagrams and the data collecting system has been upgraded.

WATER FLOW DIAGRAM OF JORONG

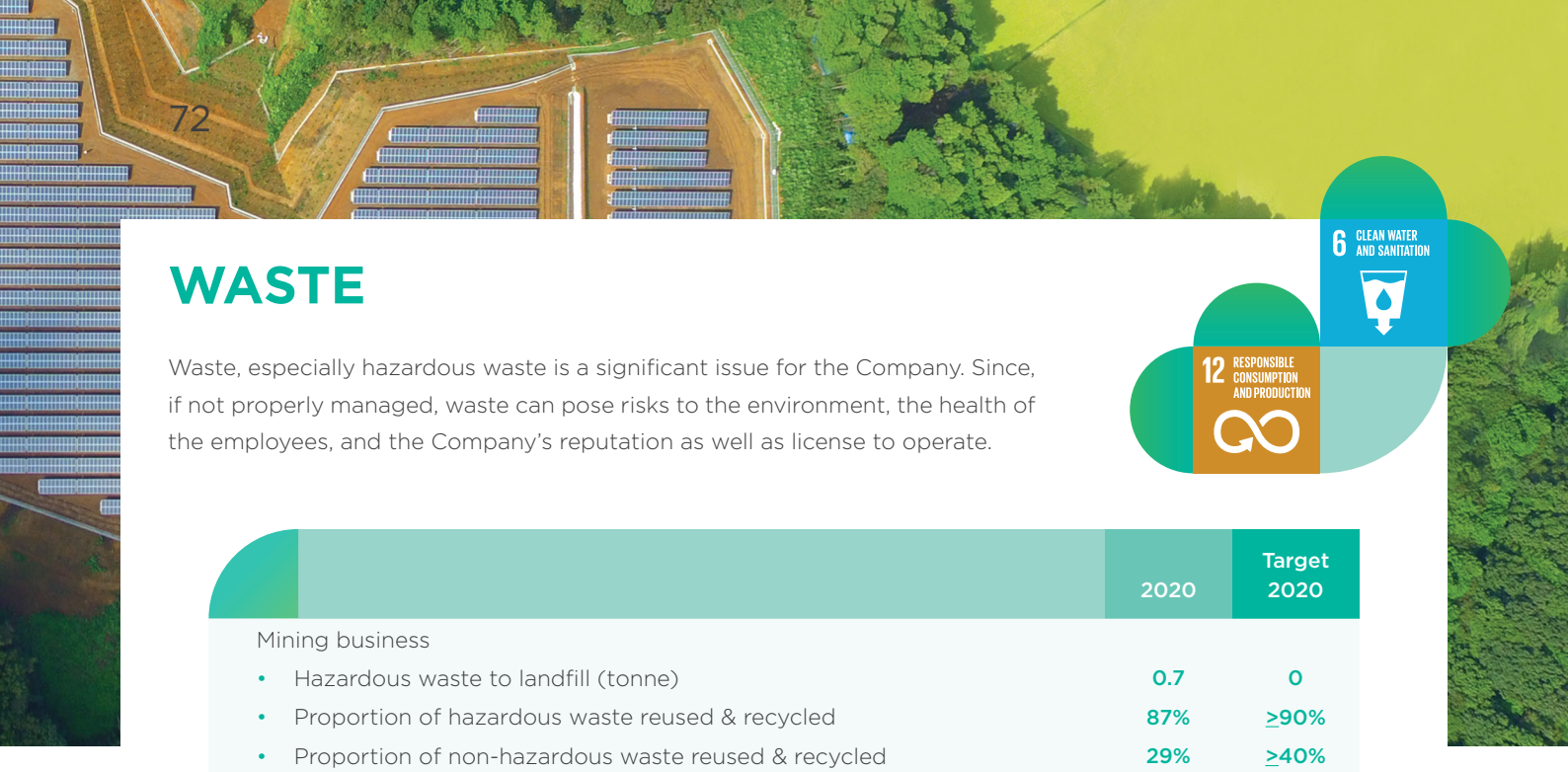


WATER-STRESSED AREAS IDENTIFICATION

The Company refers to the World Resource Institute's Aqueduct Water Risk Atlas for the baseline water-stressed area level when conducting water risk assessment by determining whether the operational sites are located in water-stressed area. The most updated information was published in 2015 with a projection to 2040 based on a business-as-usual scenario according to Shared Socioeconomic Pathway (SSP) 2 and Representative Concentration Pathway (RCP) 8.5. From the assessment in 2020, 35% of sites are in the area associating with high risk.

Business	Operational status	No. of business unit		
		Total	Assessed	In water-stressed areas
Mining-Indonesia	Operating	5	5	-
	Project	2	2	-
Mining-Australia	Operating	5	5	3
	Project	4	4	2
Thermal power-China	Operating	3	3	3
Renewable power-China	Operating	7	7	6
Renewable power-Japan	Operating	12	11*	-
	Project	3	3	-

* Excluded 1 non-managed plant because of less than 50% of share



WASTE

Waste, especially hazardous waste is a significant issue for the Company. Since, if not properly managed, waste can pose risks to the environment, the health of the employees, and the Company's reputation as well as license to operate.

	2020	Target 2020
Mining business		
• Hazardous waste to landfill (tonne)	0.7	0
• Proportion of hazardous waste reused & recycled	87%	≥90%
• Proportion of non-hazardous waste reused & recycled	29%	≥40%
• Proportion of ash reused & recycled	100%	100%
Power business		
• Hazardous waste to landfill (tonne)	0	0
• Proportion of hazardous waste reused & recycled	81%	≥10%
• Proportion of ash reused & recycled	100%	100%
• Proportion of synthetic gypsum reused & recycled	100%	100%

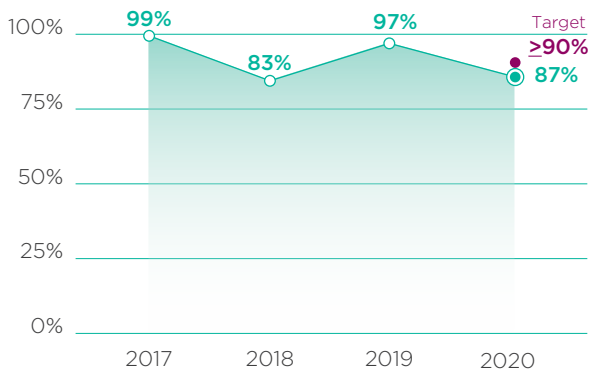
PERFORMANCE

In 2020, the waste management policy was announced and deployed to all business units. Moreover, the data collection system is being updated in accordance with GRI 306 (2020). To enhance efficiency of data collection and waste management, the process flow at each business unit is being analyzed to identify waste and appropriate actions to prevent waste generation.

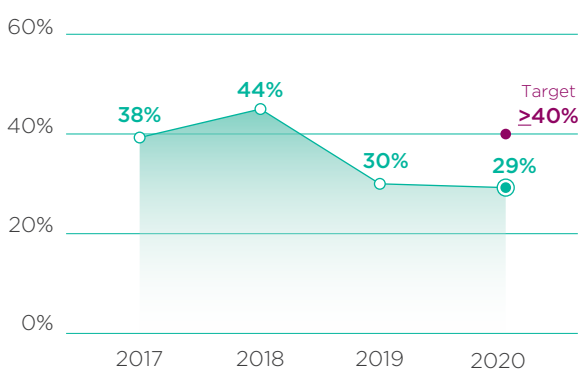
Mining Business

In 2020, there were 2,537 tonnes of hazardous waste generated, of which 87% was reused and recycled, slightly lower than the target. The decrease was a result of some hazardous waste transferred to landfill. While ash generated by the captive coal-fired power plant in Indonesia was sent to an authorized agency for reuse. However, only 29% of non-hazardous waste was reused and recycled, fallen behind the target of 40%.

PROPORTION OF HAZARDOUS WASTE REUSED & RECYCLED - MINING BUSINESS



PROPORTION OF NON-HAZARDOUS WASTE REUSED & RECYCLED - MINING BUSINESS

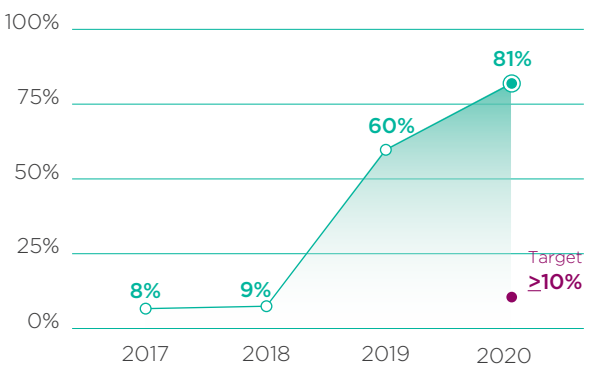


Power Business

In 2020, 81% from the total of 103 tonnes of hazardous waste was reused and recycled. This significant improvement came from the change of how the Company managed the lubricant used in the operational process and the denitrification catalyst used in the air pollution control system. Whereas other hazardous waste was recovered and incinerated by the third party, there was no hazardous waste sent to landfill.

The fly ash and bottom ash, including synthetic gypsum generated by the 3 CHP plants in China which are identified as non-hazardous waste were 100% sold to the 3rd parties for reuse in the cement production, which achieved the annual target same as the previous year.

HAZARDOUS WASTE REUSED & RECYCLED - POWER BUSINESS



MANAGEMENT APPROACH

The Company emphasizes on reducing waste using the approach: prevention & reduction, reuse, recycle, and recovery. This is to reduce the amount of waste that would otherwise be disposed by incineration or landfill. The Company has developed waste management standard in compliance with the local laws and regulations as well as alignment with international best practices comprising of 5 steps as follow:

1. Planning: Identify source of waste, hazardous characteristic, and disposal method
2. Storage: Ensure proper waste storage facility with regular inspection
3. Transportation: Ensure proper waste handling and track all transportation
4. Treatment and disposal: Maximize the reuse & recycle and avoid landfill
5. Monitoring: Ensure compliance of waste management against standard

By the way, specific waste generated from mining business, which includes tailings and overburden, is discussed separately and not included under this category. The key types of both hazardous and non-hazardous wastes are described below:

Business	Hazardous waste								Non-hazardous waste			
	Used lubricant	Coolants	Used battery	Contaminated container	Laboratory waste	Transformer	Electronic waste	Solar panel	Organic waste	General waste	Ash*	Synthetic gypsum
Mining	●	●	●	●	●				●	●		
Thermal power	●		●		●	●	●		●	●	●	●
Renewable power								●				
Solar rooftop								●				

* defined as hazardous waste in Indonesia according to the local regulations

For ash and synthetic gypsum, by-products from the coal-fired power plants, which can be used as raw material in the cement and concrete industry, the Company focuses on sizing them to serve different market demand, providing proper storage facilities in compliance with local regulations, and closely monitoring environmental impact from such storage areas.

BIODIVERSITY

The Company understands that certain types of business operations, such as open-pit mining, can affect ecosystems and biodiversity. It is therefore one of the Company's priority to manage those impacts by seeking to minimize risk on creating negative impact on biodiversity.

	2020	Target 2020
Proportion of business units assessed for potential biodiversity impact	100%	100%
Proportion of business units assessed for biodiversity value*	100%	100%

* For business unit(s) identified as high potential for biodiversity impact

PERFORMANCE

In 2020, according to the preliminary biodiversity value assessment, 7 mines, 3 mining projects and 1 renewable power project were identified as high potential for biodiversity impact. Therefore, biodiversity management plans had been developed upon those 7 operating mines.

Business	Operational status	No. of business unit		
		Total	Assessed for biodiversity value	Identified as high potential
Mining - Indonesia	Operating	5	5	2
	Project	2	2	-
Mining - Australia	Operating	5	5	5
	Project	4	4	3
Thermal power - China	Operating	3	3	-
Renewable power - China	Operating	7	7	-
Renewable power - Japan	Operating	12	11*	-
	Project	3	3	1

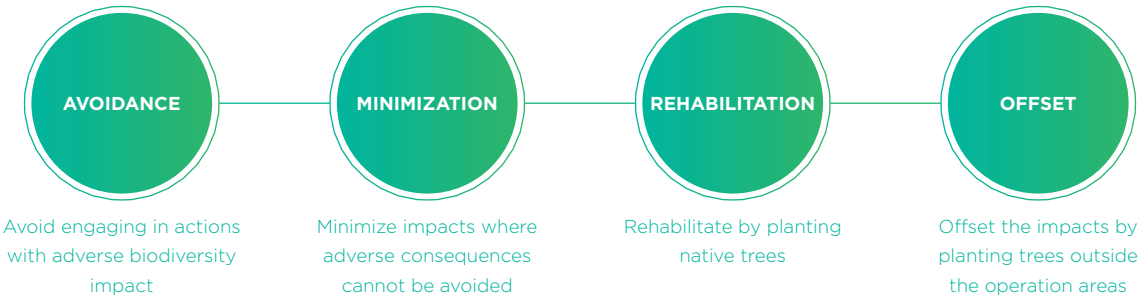
* Excluded 1 non-managed plant because of less than 50% of share

Moreover, the Company assessed the biodiversity value at Tandung Mayang in Indonesia which is about to close in 2021 even though it is not identified as high potential for biodiversity impact.

Business entity		Area characteristic		Biodiversity value assessment	Biodiversity management plan
		Relation to protected area	Relation to high biodiversity wilderness area		
Indonesia	Indominco	●		●	●
	Bharinto		●	●	●
Australia	Airly	●		●	●
	Springvale		●	●	●
	Clarence	●		●	●
	Mandalong		●	●	●
	Myuna	●		●	●

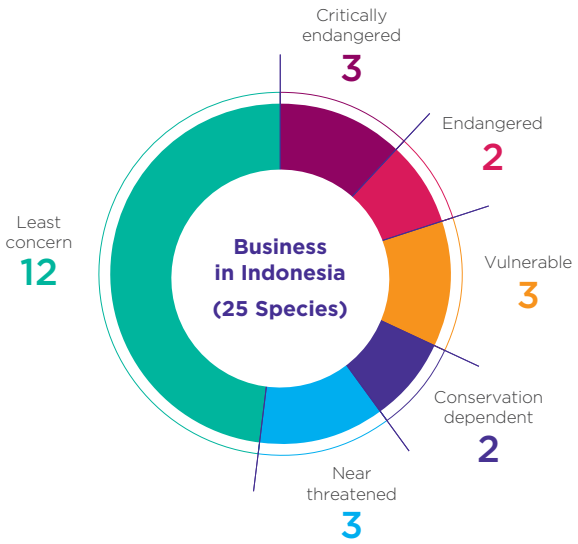
MANAGEMENT APPROACH

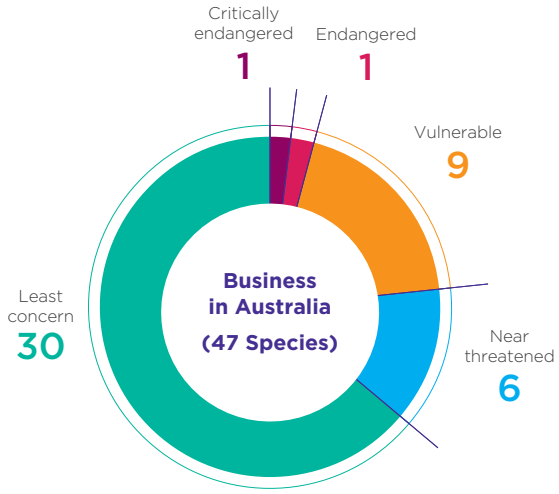
The Company has implemented a Biodiversity Policy which underlines the Company's commitment to minimize risk on creating adverse consequences on biodiversity from the Company's operations. Based on the IUCN (International Union for Conservation of Nature) concept, the biodiversity management system has been developed with 4 approaches: avoidance, minimization, rehabilitation, and offset.



The Company carries out a preliminary biodiversity value assessment for each business unit since pre-operation stage by considering whether those operational sites are located in or adjacent to the protected or high biodiversity wilderness areas and whether there are vulnerable and native species, especially the species in the IUCN Red List. In the case where a high potential risk for biodiversity impact is identified, the Company then conducts a full biodiversity value assessment in line with the Convention on Biological Diversity (CBD) guideline. In addition, the biodiversity management plan (BMP) is developed for the mines identified as high potential with the target to achieve a net positive impact on biodiversity upon closure of those mines after 2025.

IUCN RED LIST OF MINING BUSINESS





MINERAL WASTE

Mining processes generate 2 kinds of specific waste: overburden/waste rock and tailings. The overburden or waste rock is typically non-toxic; however, it may generate acid-mine water if it contains a Potential Acid Forming material (PAF) and contaminates the environment. Therefore, an efficient mineral waste management is another key focus of the Company.

	2020	Target 2020
Progress of in-pit backfilling against plan*	94%	≥80%
Proportion of mines with acid mine drainage management plan**	100%	100%
Number of significant tailings spills	0	0

* For open-pit mine only
** For business unit(s) identified as potential acid mine drainage issue

PERFORMANCE

Overburden

In 2020, the mining business in Indonesia had a progress of in-pit backfilling at 94% against plan, which is far beyond the target. An increase compared with the previous year is a result of the effective mine planning.

Tailings

At present, there are 3 active tailings facilities at Northern Coal Services, Western Coal Services, and Clarence mines in Australia, and 2 closed facilities in Indonesia. In 2020, the amount of tailings in Australia slightly decreased by 6% from the previous as the tailing was sorted for dam reinforcement while the fine coal was returned to the production process. Moreover, all the tailings facilities are properly managed, and there is no report on significant tailings spills.

Acid Mine Drainage Management

The acid mine drainage management plans are available at all the mines which have potential acid forming materials. All mines proceeded as planned and the quality of treated water met the local standards. Moreover, from the success of biological treatment for acid mine drainage at Jorong, the Company extended the treatment technique to Indominco in 2020.

MANAGEMENT APPROACH

The Company carries out the preliminary risk assessment for all business units to identify whether there are any risks regarding the mineral waste. The waste management standard specific to the mineral waste has been developed and deployed across operations, covering the pre-mining until the post-mining stages. The following activities are associated with the mineral waste:

Activity	Mineral waste
Coal extraction	Overburden/waste rock
Coal processing	Tailings

Overburden

The Company integrates an overburden management plan with the mine plan for each specific mine. Since the pre-mining stage, the geological survey has been performed to determine the geochemistry of overburden and to create a geological model with aims to minimize the amount of overburden removal and maximize in-pit backfilling.

Tailings

Tailings management plan is developed for each operation by applying a risk-based approach, throughout their entire life, from the location selection in pre-mining stage to the reclamation in mine closure stage. In Australia, the Reject Emplacement Area (REA) Oversight Committee has been appointed to carry out the standard and audit process. All tailings storage facilities are designed and inspected regularly by external experts, as well as the tailings management plans that are periodically reviewed, especially when there are significant changes in the mining plans.

Acid Mine Drainage Management

The acid mine drainage management procedure has been developed and used as a Company's framework with several preventive measures. Where acid mine water exists, water quality must be well treated prior to discharge to the environment and before the mine closed. The acid mine drainage is one of the key issues discussed in the mine planning review meeting to ensure its efficiency.

EXPANSION OF BIOLOGICAL TREATMENT FOR ACID MINE DRAINAGE

Referring to the success of biological treatment for acid mine drainage at Jorong mine, the Company extended the project to Indominco mine, which also has Potential Acid Forming material (PAF). To apply biological treatment, 6 ponds with different water treatment functions have been constructed. Suspended solids are basically precipitated in Pond#1-3. While organic matters, especially from an empty bunch of palm oil and manure are placed in Pond#4-5 to increase pH of water. For Pond#6, the native plants having potential to absorb acid and heavy metal such as Typha are planted to neutralize acid mine drainage prior to discharge. The Company planned to expand this method in the other mines where also have PAF.

MINE CLOSURE

It is a normal character of the mining business that the coal reserves will be finally depleted in every mining operation. The Company therefore places an emphasis upon the need to prepare for mine closure from the beginning and carries on throughout the mining life. This ensures that all areas are returned to a native ecosystem with the acceptance of related stakeholders.

	2020	Target 2020
Proportion of mines with mine closure plan	100%	100%
Progress of revegetation against plan*	91%	≥90%
Progress of mine closure activity against plan**	100%	≥90%

* For open-pit mine only
** For underground mine only

PERFORMANCE

In 2020, mine closure plans were available at all operating mines in both Indonesia and Australia. For open-pit mine, the average progress of revegetation was 91% against a target of 90%. In Australia, the mine closure activities of the underground mines were progressed as planned. Moreover, to ensure the effectiveness of mine closure management, ITM, a subsidiary in Indonesia, had established the Mine Closure Committee. The committee arranged a meeting to review the performance on a quarterly basis.

MANAGEMENT APPROACH

The Company's mine closure standard is developed in line with the International Council on Mining & Metals (ICMM) guideline and applied across business units. With an aim to minimize the environmental impact, the standard encompasses several measures such as land stabilization, waste management, water management, and mine rehabilitation. For each site, the environmental impact assessment is performed, and the mine closure plans are developed. The Company also monitors progress with reference to the mine closure plan. For open-pit mining in Indonesia, the progress of revegetation is monitored. While in Australia, the progress of mine closure activities is monitored. The stages of each mine are described as follows:

Country	Mining stage	
	Mining	Mine closure
Indonesia	Indominco	Tandung Mayang
	Trubaindo	
	Bharinto	
	Jorong	
	Embalut	
Australia	Airly	Munmorah
	Springvale	Awaba
	Clarence	Charbon Open Cut
	Mandalong	Charbon Underground
	Myuna	Ivanhoe No 2
	Angus Place*	Ivanhoe No 4
	Newstan*	Lamberts Gully

* Under care & maintenance

MINE SUBSIDENCE

Subsidence is common over underground mines. Inefficient subsidence management may lead to fatal injury of miners while surface subsidence may affect the environment such as changing morphology of land settlements, interrupting the hydrologic environment as well as damaging infrastructures and surrounded residents.

	2020	Target 2020
Progress of subsidence management activities against plan*	100%	≥90%

* For underground mine only

PERFORMANCE

Property Subsidence Management Plans (PSMP) are available at all operating mines in Australia. Those plans are regularly reviewed especially if there are any changes in the mine plans. Subsidence management activities are performed according to the plan at all mines. To date, the existing monitoring has not detected any mining-related impacts. The ongoing monitoring program continues to assess the risk of the current operations on environment and communities, including the utilization of the 3D photogrammetry in subsidence monitoring at Airly mine.

MANAGEMENT APPROACH

The Company integrates subsidence management into mine plans and then submits to related government agencies for approval. Since the mine subsidence movement can be predicted, Centennial, a subsidiary of the Company operating underground mines in Australia, has frequently performed a risk assessment on subsidence. The assessment results are then integrated with a geological model to formulate the subsidence management plan to minimize possible subsidence impact. Through the implementation, subsidence monitoring has been undertaken over the potential areas to access subsidence impacts. The actual impacts have been compared against the estimated impacts and used further to refine the subsidence model and finally improve the subsidence management plan.

Mine	Subsidence management plan
Airly	●
Springvale	●
Clarence	●
Mandalong	●
Myuna	●

ENVIRONMENTAL COMPLIANCE

Compliance plays an important role in conducting business since it is a basic requirement to maintain a license to operate. Non-compliance related to environment could adversely affect the Company both directly in financial terms and indirectly in terms of reputation and stakeholder's confidence. Environmental compliance is thus one of the Company's priorities.

	2020	Target 2020
Number of significant environmental incidents	0	0
Number of significant fines from environmental non-compliance	0	0

PERFORMANCE

In 2020, the Company can maintain achievement of the annual target as there were no significant environmental incidents or significant fines from environmental non-compliance at all business units.

REAL-TIME MONITORING OF WATER DISCHARGE IN INDONESIA

To ensure environmental compliance in all operations, a real-time monitoring system for water discharge is installed at all mine sites in Indonesia as a preventive measure in identifying potential environmental incidents. At each site, the real-time monitoring station is installed at least at the discharge point with the maximum discharge volume. The monitoring results such as volume, pH, and TSS are automatically sent to responsible persons via SMS and then consolidated at a data center before reporting to the government agencies. This improvement strengthened water management efficiency and minimized the potential environmental impacts from the Company's operations.

MANAGEMENT APPROACH

The Company announces an environmental policy, which focuses on strict compliance with laws and regulations. To ensure that all business units operate their functions in line with related regulations, the Company has monitored changes on laws and regulations. Moreover, the Company has also implemented a number of environmental managements and set several environmental-related targets. One of the key targets is zero environmental incidents with no significant penalty charges.

In regard to the environmental incident reporting standard, the Company classifies environmental incidents into three severity levels. The significant incident is determined according to the following criteria:

- Damage to more than 5 km from source or catastrophic damage to ecosystems
- Irreplaceable changes or loss to animals, plants or ecosystems
- Potential fine more than or equal to $10,000.
- Other costs (remedial action, lost time, legal cost) more than or equal to $20,000

To ensure compliance against regulations and internal standards, the Company has established a global internal audit and compliance function to assure the practices at each business unit. Moreover, the verification by an independent certification body is also performed.

ENVIRONMENTAL MANAGEMENT SYSTEM CERTIFICATION

In addition to the internal audits, the environmental management system at each business unit was accessed by the third party and certified according to ISO 14001:2015.

Business	No. of business unit			
	Total*	System coverage	Independent audit by the third party	Third-party certification (ISO 14001:2015)
Mining - Indonesia	5	5	4	4
Mining - Australia	5	5	5	-
Thermal power - China	3	3	3	3
Renewable power - China	7	7	-	-
Renewable power - Japan	12	11**	-	-

* Considered only operating site
** Excluded 1 non-managed plant because of less than 50% of share

SOCIAL

Employee engagement levels

69% Thailand

73% Indonesia

92% China

63%
High critical positions with successor identified

94%
Business units assessed for human rights risks

78%
Stakeholder satisfaction level on community development projects

Lost time injury frequency rate (LTIFR)

2.99 Employees

0.21 Contractors

(person/million man-hour)

EMPLOYEE MANAGEMENT

Human capital is at the heart of enhancing the Company's competitive edge. Also, work efficiency and work achievement are reflected by the level of employee engagement. As such, employee management is an integral part of the Company's business operations.

	2020	Target 2020
Level of employee engagement		
• Thailand	69%	≥62% in each country
• Indonesia	73%	
• China	92%	
• Japan	38%	
• Mongolia	52%	
• Singapore	60%	

PERFORMANCE

In 2020, the Company conducted employee engagement surveys in 6 countries. The engagement results were analyzed with breakdown by generation, gender, employee level, and year of service to effectively address the particular needs of each group. As a result, the employee engagement levels in most countries exceeded the target of 62%. The level of employee engagement in Thailand increases continuously. However, there was a slight decline in China and Singapore, but a significant decrease in Japan and Mongolia. Moreover, based on the actual performance in each country, the annual long-term targets toward 2025 for each individual country are being reviewed to ensure excellent relations with employees.

HEALTHY HABIT CHALLENGE BINGO

During the COVID-19 pandemic in Jakarta in which employees worked from home, the Company developed an activity "Healthy Habit Challenge Bingo". This bingo was arranged in October, with participation of all employees. There were 25 healthy-challenge activities to complete such as getting adequate sleep, meditation, eating fruit, and drinking at least 1.5 liters of water. The participants could achieve as much bingo as possible and submit their supporting evidence of each activity to win the prize. This activity was not only ensuring the health of employees but also strengthening the relations between employees during work from home.

MANAGEMENT APPROACH

The Company has announced an employee relations policy as a framework for creating an excellent relationship between the Company and employees. The policy is managed under the "Say, Stay, Strive" principle that reflects the employee's engagement through 5 engagement drivers, including Engaging leadership, Talent focus, The work, The basics and Agility.

Driver	Engagement outcome
• **Engaging leadership** • **Talent focus** • **The work** • **The basics** • **Agility**	• **Say:** Say positively about the Company both to internal and external stakeholders • **Stay:** Stay with the organization for a long period and work happily • **Strive:** Strive to improve performance and form a deep bond with the Company

The Company entrusts the third party to conduct an annual employee engagement survey since 2012 and applied across business units. The survey is translated into local languages to ensure that employees in every country have a thorough understanding and are able to express their opinions honestly. Survey results are communicated to all employees and are reported to the Board of Directors on an annual basis.

In practice, each business unit develops its own engagement improvement plan based on the Company's annual strategy and the survey results of the previous year. Progress is updated monthly in the performance review meeting. Furthermore, to strengthen the level of employee engagement, the Company has developed a leadership development program specifically for middle management under the theme "Banpu Engaging Leaders" to support their role of engaging with employees.

PERFORMANCE MANAGEMENT SYSTEM

The Company's performance management system consists of two sets of KPIs: work-related KPIs, which account for 70% of the overall performance, and behavior-based KPIs, which account for the remaining 30%. The behavior-based KPIs are measured by actions that demonstrate the corporate culture "Banpu Heart". The Company promotes employees' involvement in developing their own plans and KPIs by aligning their goals with those of the Company and their teams. Besides, the Company specifically assigned Leadership KPIs to middle management and above levels, collected through a 360 Degree Feedback system to measure their performance in team management and engaging work environment.

COMPENSATION MANAGEMENT SYSTEM

Under the governance of the Compensation Committee and Job Evaluation Committee, the Company determines compensation based on job scope and individual competencies. The compensation structure is reviewed every two years to ensure its competitive advantage. In addition, the variable compensation based on the Company's performance, both in terms of financial and ESG performance, such as safety record and community complaint, is also annually awarded.

RETIREMENT READINESS PROGRAM

Due to the unique nature of the mining business that reserves are gradually diminished, the Company has a retirement management system to prepare employees to be ready for the retirement based on mine closure schedule with two management approaches in the following:

- Relocate the employees who are willing to continue work to other mining sites
- Arrange pre-retirement workshops to ensure retirement readiness of employees, both financially and mentally

The lastest operation entering to closing stage was Tandung Mayang mine in 2019. On this occasion, the Company arranged workshops on mapping self-potentials and designing the business models based on employees' respective passions and advantages. In addition, senior management and external experts were invited to share a positive attitude toward retirement and advice on the retirement readiness journey.

COVID-19 MANAGEMENT IN BANGKOK OFFICE, THAILAND

Since the beginning of COVID-19 outbreak in Thailand, the IMT, comprising heads of all critical business functions (CBFs), performs a weekly meeting to monitor and respond to the situation. The IMT has implemented the business continuity plan and several measures in response to the pandemic by focusing on employees' health and business interruption such as international travel restrictions, workplace sanitation, and work from home. Moreover, the IMT has also collaborated with other supporting teams: CCT, DRT, RRT, and CBFs to activate their BCP to ensure uninterrupted operation during work from home. Until now, the Company has succeeded in managing the COVID-19 situation as the Company can continue the key business operations with no impact on the product or service deliverable. Moreover, even in the remote working situation, employee engagement scores of 85% in the safety aspect confirmed the Company's achievement.

HUMAN CAPITAL DEVELOPMENT

Human capital is one of the most important resources of the Company. To lead the business in a complex environment, maintaining the Company's competitiveness through human capital development is the key success factor.

8 DECENT WORK AND ECONOMIC GROWTH

	2020	Target 2020
Proportion of high critical positions with successor identified	63%	100%
Proportion of employees with individual development plan	68%	100%

PERFORMANCE

In 2020, the training sessions for reskilling and upskilling were organized with an average time of 22 hours per person. This program offers in-house and outside training courses as well as short courses. In addition, to prepare employees for the digital era, 4 additional digital literacy courses facilitated by "Banpu Digital Academy" were developed, comprising of Power of digital, Agile 101, Intro to design thinking, Intro to UX/UI, and Defining a minimum viable product. Moreover, the knowledge/experience sharing in specific technical know-how was also provided.

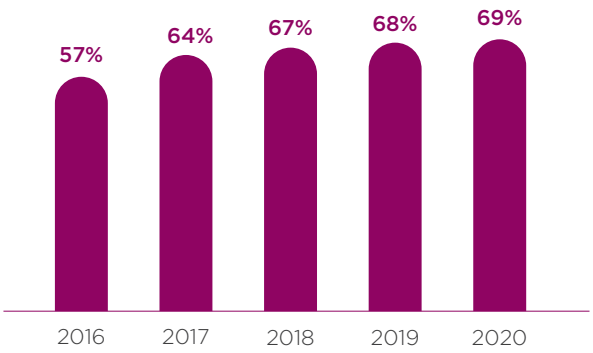
For high critical positions, of which 63% had a successor in place, which was below the target. To strengthen the capability of potential candidates, training on the commercial mindset and strategic thinking had been organized. The Company also utilized "Success Factor" platform to manage succession planning and potential management process effectively. However, the proportion of employees with individual development plans was 68%, falling short of the annual target.

For leadership development programs, "Banpu Leadership Program for Future Leader" was continually conducted. "Banpu Global Leadership Program for First Line Leader" was virtually organized for 26 executives from all countries. The training evaluation resulted that more than 90% of participants are able to apply the knowledge to their day-to-day management. In addition, three coaching programs were also conducted to strengthen the coaching culture. The programs included building awareness & understanding, developing coaching skills & performance, and unleashing potential across the function.

BANPU ENGAGING LEADER

The findings from the 2014 employee engagement survey conducted at the head office in Thailand inspired the Company to develop a new course, "Banpu Engaging Leader" in 2015. This course has been conducted several times since its inception for both first-line managers and higher senior levels. The training aims to raise employee engagement level, using the notion that these managers work closely with operational staff. This course seeks to develop coaching competency, enhance motivation levels, and be role models. Since 2016, more than 165 management joined the program. As a direct consequence of running this training program, the employee engagement level at the head office in Thailand has risen significantly from 57% in 2016 to 69% in 2020, especially for Senior Leadership and Engaging Leader dimensions with a score of 73% and 71% respectively.

LEVEL OF EMPLOYEE ENGAGEMENT



HIGH TRUST TEAM FOR BUSINESS SUCCESS

The Company arranged "High trust team for business success" program to strengthen team effectiveness and performance of Banpu NEXT, the new flagship clean energy company by integrating the 4 Discipline of Execution (4DX). There were 83 employees joining the program which were divided into 13 teams. Each team was required to set project goals and identify weekly commitment actions. The project achievement was evaluated by the third party using Sustainability Index (SI) methodology based on the actual performance and evidence provided by each team. The SI score is calculated by considering 3 factors which are number of people joining weekly meetings (Session held), number of promises contributing to the project (Commitment made), and number of promises that are achieved (Commitment kept). Throughout the program, employees can successfully develop team synergy to commit team goals and align the team's efforts that share the same interest in their goals. At the end of the program, the average SI score was significantly increased from 67% at the beginning to over 90%.

MANAGEMENT APPROACH

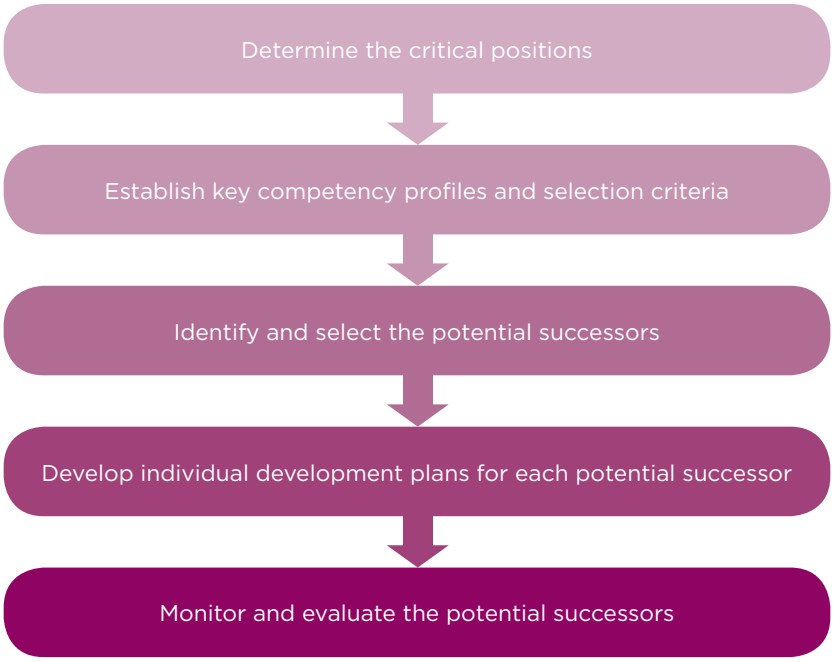
The human capital development plan has been formulated based on the competency gaps of employees along with the Company's policy and long-term business strategy. Training roadmaps specific for each job level and job function have been identified and reviewed annually. The individual development plan for each employee is also developed by considering the required competencies of such position and personal competency profile, covering both functional/technical and leadership skills.

COMPETENCY DEVELOPMENT

1	2	3
Competency Assessment	Competency Gap Identification	Individual Development Plan

For management level, the specific curriculum of leadership development programs has been developed. There are 4 levels of program according to the management group: Strategic leader, Business leader, First line leader and Future leader. Currently, the methodology to evaluate the return on employee development investment is being standardized based on international practices such as the Kirkpatrick model. Moreover, the succession planning committee has been appointed to oversee the succession planning and high potential management. The successor's in-depth information regarding competency and personality is reviewed to address the gap and manage challenges to future-proof tomorrow's complex business environment.

SUCCESSION PLANNING AND HIGH POTENTIAL MANAGEMENT



CORPORATE CULTURE

Workforce diversity is one of the Company's key challenges since there are several different languages, religions, cultures and races in the organization. A strong corporate culture is the key to managing such diversities, strengthening employee engagement level and increasing productivity.

	2020	Target 2020	Target 2025
Level of alignment between employee behavior and the corporate culture "Banpu Heart"	75%	≥80%	≥80%

PERFORMANCE

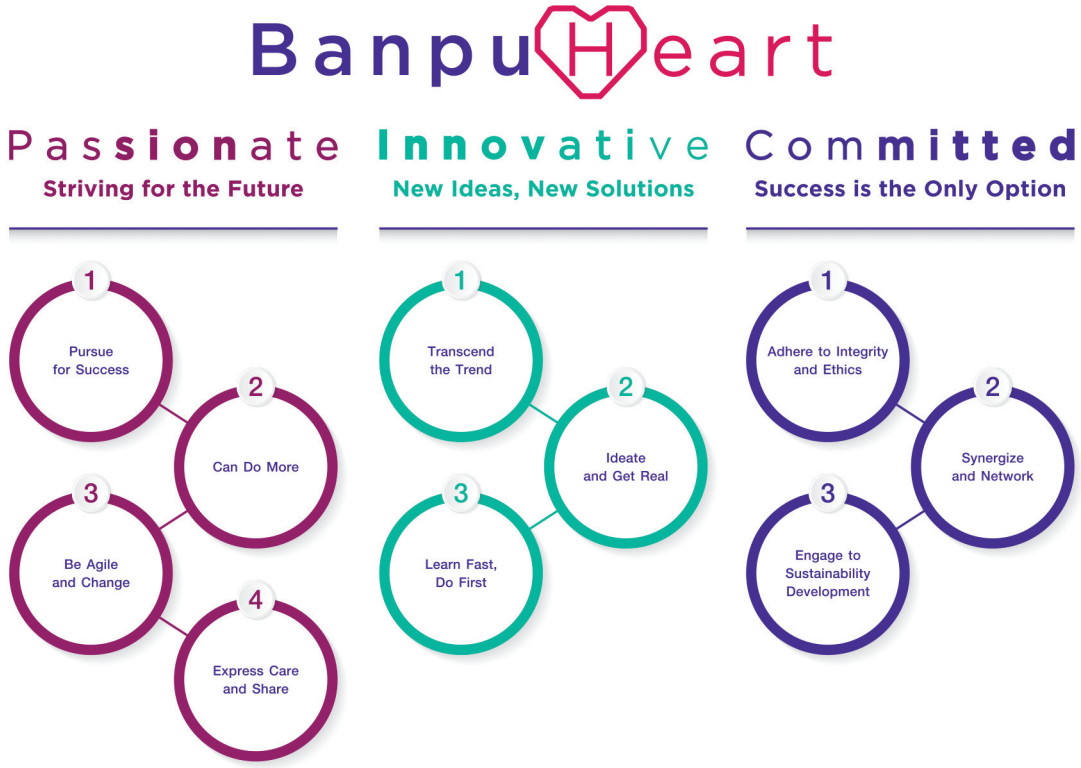
In 2020, the Company conducted "Banpu Heart" survey in Thailand, China, Mongolia, Indonesia, Japan, Australia, and Singapore. From the result, the average level of alignment between employee behaviors and the corporate culture (Banpu Heart score) was 75%, which was below the target. Considering the scores by country, Banpu Heart scores in Japan and Australia were below the target. Moreover, to reflect the actual performance of each country, the Company reviewed the long-term target including annual 2021-2025 targets in each country.

BANPU HEART ACTIVITY DURING COVID-19

To build a strong corporate culture "Banpu Heart", various activities to encourage employees to adopt 10 key behaviors of Banpu Heart in daily life were arranged. An example of the activities conducted in 2020 was "Banpu Heart: How-to" workshop which was conducted for employees to refresh the key behavior with a specific session on enhancing innovative thinking and business-value-added bootcamp. Even during COVID-19 outbreak that employees work from home, the Company also arranged virtual activities under the theme "Smooth and Seamless Work from Home" to encourage employees to share their ideas on how to adopt 10 key behaviors of Banpu Heart. Once the employees resumed to work in the office, the face-to-face "Banpu Heart Super Fun Day 9.9" was arranged in September with a session that top management from 3 core business sharing their stories on applying Banpu Heart in business decision making.

MANAGEMENT APPROACH

The management strategy involves the implementation of "Banpu Heart", the corporate culture which comprises 3 core values: Passionate, Innovative and Committed. In order to turn the theoretical "Banpu Heart" corporate culture into practice, 10 key behaviors and a systematic implementation scheme have been developed, covering all stages across employee life cycle. The implementation is driven by 4 key drivers. One of which is Banpu Heart Change Leaders (BCL), who drive corporate culture through a wide range of activities. The Company monitors the level of alignment between employee behavior and the corporate culture by conducting an annual survey by the external independent party. Furthermore, all activities and surveys are provided in the various local languages to ensure that all staff can truly comprehend the culture "Banpu Heart".



Recruitment

Access personalities and behaviors by using "Personality inventory test" and "Culture-fit assessment"

On-boarding

Corporate culture "Banpu Heart" workshop for new recruits

Development

Strengthen through various activities and communication channels

Performance evaluation

Embed "Banpu Heart" as part of behavior-based KPI

OCCUPATIONAL HEALTH & SAFETY

It is well-understood that shortcomings in occupational health and safety (OHS) management can have serious adverse consequences not only for the health and well-being of employees and their families but also for the Company's reputation. Therefore, the Company has made a conscious commitment to create a working environment in which all employees including anyone who works for us, are guaranteed the possible safest workplace and work-conditions.

	2020	Target 2020	Target 2025
Number of occupational fatalities	0	0	0
Lost time injury frequency rate – Employees	2.99	≤2.65	≤1.99
Lost time injury frequency rate – Contractors	0.21	≤0.25	≤0.14
Total recordable injury frequency rate – Employees	16.91	-	≤10.93
Total recordable injury frequency rate – Contractors	0.78	-	≤0.53

PERFORMANCE

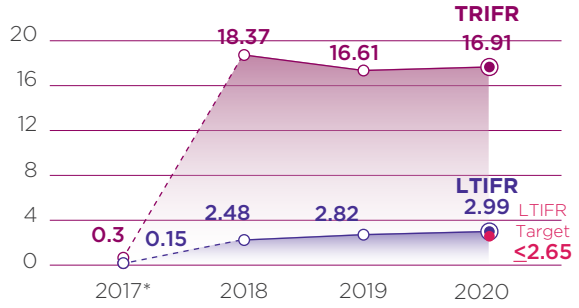
In 2020, the Company broadened the reporting boundary to cover the employees in the offices in China and Indonesia. However, there was no significant change in regard to the operational risks compared to the previous year. As well, the monitoring results of work environment did not exceed the standards in all working areas. Based on 2019 performance, the Company had set the new long-term targets towards 2025. Examples of those targets included number of fatalities caused by injury and occupational ill-health, total recordable injury frequency rate (TRIFR), High-consequence injury rate, Total recordable occupational ill-health frequency rate, and Tier-1 process safety event rate. The Company started to record the work-related ill-health for employees and contractors in China, Indonesia, Australia, and Thailand. Moreover, the Company also updated the management standard to enhance process safety management at each specific operation.

In 2020, there was zero occupational fatality in all business units. LTIFR of employees was 2.99, which was slightly higher than the target while LTIFR of contractors was 0.21, which achieved the target. In comparison, TRIFR was 16.91 for employees and 0.78 for contractors, slightly different from the previous year.

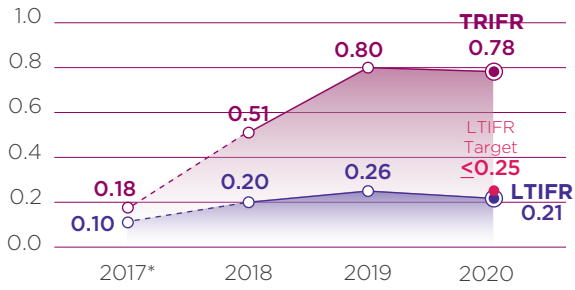
To strengthen OHS management system at all business units, the assessment results of safety culture maturity level conducted since 2019 had been analyzed and improvement topics had also been initiated with examples as follows:

Country	Example of topic
China	Digital application for the work permit system, Behavior-based safety (BBS) strengthening, Internal & external safety training
Australia	Critical control risk management, Risk management process improvement, Participation in safety (PAR)
Indonesia	Safety leadership workshop

SAFETY RECORDS - EMPLOYEES
(person/million man-hour)



SAFETY RECORDS - CONTRACTORS
(person/million man-hour)

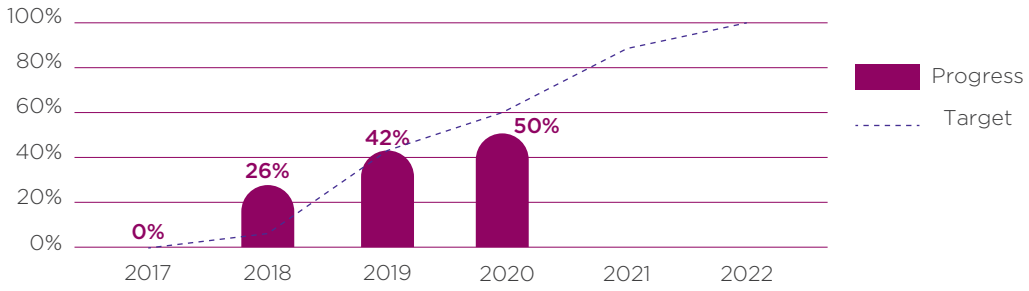


* 2017 data excluded the performance of mining business in Australia

SAFETY CULTURE MATURITY LEVEL ASSESSMENT

Safety Culture is one of the management tools that the Company has used to build upon all employees' safety awareness, with target to complete a safety culture maturity level assessment at all business units that are currently operating by 2022. In 2020, the Company completed the safety culture perception survey at 6 solar power plants in China, leading to 50% cumulative, which was a little behind schedule due to the COVID-19.

PROGRESS OF SAFETY CULTURE MATURITY LEVEL ASSESSMENT
(% of business units)



UNDERGROUND MINING ASSISTANT APPLICATION

The Underground Mining Assistant (UMA) is a suite application for underground operators. UMA application encompasses various tools such as equipment locator, material locator & ordering, conveyor belt monitoring, VoIP (Voice over Internet Protocol) calling and controlled document. Moreover, underground operators can report real-time unsafe conditions to their supervisors working above the ground with VoIP function. This prevents any potential incident and reduces OHS risks.

MANAGEMENT APPROACH

The Company has clearly stated the OHS Policy and "3 Zeroes" target as follows:

- Zero Incidents – eliminate unsafe behavior or working conditions
- Zero Repeats – prevent recurrence of incident
- Zero Compromise – adopt non-negotiable safety standards

The Sustainability Committee annually reviews all OHS policies, strategies, and annual targets. This committee is chaired by the CEO and it is the highest governance body for OHS management. In addition, OHS performance is one of the KPIs of CEO and management at all business units.

To achieve 3 Zeroes, the Company has implemented a safety culture, covering the process for occupational health and safety management system strengthening, safety competency enhancement, and safety awareness instillation. The safety culture has been developed based upon ISO 45001 and industry best practices. This management system is regularly reviewed to ensure its compliance with the relevant laws and regulations. Moreover, the verification by an independent certification body is also performed.

Hazard identification and risk assessment

The Company makes use of hazard identification and risk assessment tools to evaluate both routine and non-routine tasks. These include the Job Safety Environment Analysis (JSEA), the Green Card/Yellow Card system, the Safety Health Environment Accountability Program (SHEAP) used in the mining business in Indonesia, the SLAM (Stop, Look, Assess, and Manage) used in the mining business in Australia, and the Safety Walk Down program used in the thermal power business in China.

Risk management measure determination

The Company determines work-related hazards using a hierarchy of controls. Supervisors have the role of carrying out a risk assessment and then communicating both risks and control measures to employees prior to the commencement of any operation. Moreover, if any hazard or threat to workplace safety is discovered at any time, all employees and contractors should stop working immediately and could return to work only if the threat is resolved.

Work environment management

The Company regularly monitors the work environment according to the risk factors in each area, such as air quality, noise, and lighting levels in the workplaces to ensure that all workers have a safe and healthy work environment. Furthermore, the Company provides emergency equipment and first aid kits in suitable quantities with easy access, and personal protective equipment is also provided for all workers depending upon the needs of their jobs.

Incident reporting and investigation

Should an incident take place, it must be reported by those involved or whoever witnessed that incident to their direct supervisors in order to determine its severity level, then report further to related person via the specified channels. In the case of major incidents, the Company will establish an experienced team to investigate root cause, suggest preventive measures, and determine the sources of any similar potential dangers. The incident investigation, along with corrective and preventive actions, will be reported in the monthly management meetings.

Health promotion

For newcomers, health check-ups are provided, while all employees receive an annual health check related to their occupational risk factors, for instance, pulmonary function tests, audiometric tests, and mental health care under the employee health database. Moreover, the Company also provides various health promotion activities.

Prevention and minimization of impact in the supply chain

Realizing the OHS risks in the supply chain, the Company has announced the Contractor's HSE Management Standards, while requiring that every business unit must implement the Contractor Management System, covering selection of the new contractors and management of the existing contractors. The HSE contractor audit is regularly conducted to ensure that all OHS risks are properly managed.

Emergency response

The Company has established medical service centers to advise employees on health-related matters. Moreover, the mobile medical center is standby if an emergency arises in the workplace. In addition, the Company also provides medical evacuation services through International SOS Service.

Employee engagement & communication

Employees at all levels have a part to play in OHS management. The safety health and environmental (SHE) committee, comprising of representatives from the Company and employees has been established. They, together, inspect all working areas for any unsafe conditions. In addition, the Company promotes OHS awareness through various communication channels including electronic newsletter, meeting before the start of work, knowledge sharing session, and annual corporate strategic meeting, etc.

Training and development

The Company provides OHS training to management and employees in accordance with the risks identified and in line with the relevant regulations. Typical training courses include safety for newcomers, safety at the supervisory and managerial levels, basic firefighting, work hazard analysis, work permit management, and lockout-tagout system. The employees then undergo further assessment to determine whether they have acquired sufficient OHS knowledge.

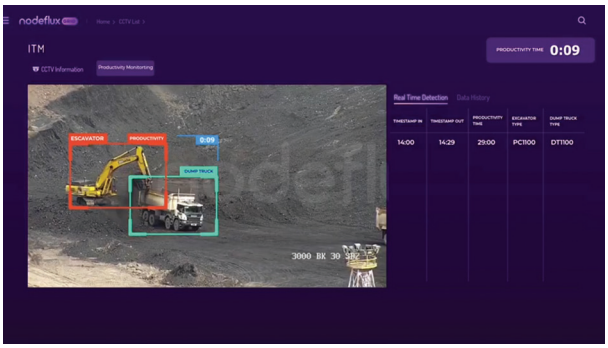
OHS MANAGEMENT SYSTEM CERTIFICATION

In addition to the internal audits, the OHS management system at each business unit was assessed by the third party and certified according to the ISO 45001:2018.

Business	No. of business unit		
	Total*	System coverage	ISO 45001:2018 certification
Mining - Indonesia	5	5	3
Mining - Australia	5	5	-
Thermal power - China	3	3	3
Renewable power - China	7	7	-
Renewable power - Japan	12	12	-

* Considered only operating site

PIT-SLOPE MONITORING APPLICATION



Landslides are one of the common hazards in open-pit mine that may lead to a major incident. To monitor pit-slope conditions, in 2020, the Company has developed a mobile application “Pit-slope Monitoring App (PMA)” and implemented at Bharinto. With geotechnical sensors, PMA uses a standard defect checklist to predict any unstable slope condition. Once there is a potential failure, PMA automatically sends a notification to all related parties to take precautionary actions. After PMA execution, the number of unexpected landslides was reduced by 18% compared to the last year. Moreover, PMA also reduces the average time of data correction process significantly from 12 days to 6 days. The Company is expanding the implementation of PMA to other mine sites and also plans to enhance the efficiency by integrating with other applications.

HUMAN RIGHTS

Human rights impacts can create severe adverse consequences for the Company's reputation and business operations. Throughout the Company, it is essential to respect human rights, freedom, and equality by disclosing how the Company addresses potential impacts on human rights, including how the Company prevents and mitigates such impacts.

	2020	Target 2020
Coverage of business units assessed for human rights risks	94%	>50%
Proportion of business units with risk management plans*	NA**	100%
Number of significant human rights issues	0	0
Proportion of significant human rights issues resolved by a dispute mechanism	NA***	100%

* For business unit(s) identified as high human rights risks
** No human rights risks
*** No report of human rights issues

PERFORMANCE

In 2020, based on the human rights due diligence manual, the Company conducted a human rights self-assessment to identify the potential human rights risk. Coverage of the assessment included mining business in Indonesia and Australia, thermal power business in China, renewable power business in China and Japan, and solar rooftop business in Thailand. As a result, the Company was not involved in any human rights risk related to employment, occupational health & safety, customer & product stewardship, community, security arrangements, and contractors & supply chain.

MODERN SLAVERY

Centennial, our subsidiary in Australia has supported a legislative regime on the Australian Modern Slavery Act 2018, which took effect since January 2019. The Company aims to use the reporting requirements of the legislation to take approach to mitigate risk, review existing system, and improve social performance. Third party was engaged to work along for undertaking a Modern Slavery Act (MSA) readiness assessment. A three-year roadmap has been developed. The disclosure of the modern slavery risks presenting in the operations and supply chains, including the Company's actions to assess and address those risks, is being prepared. In 2020, the key achievements according to the roadmap included:

- Updated employee code of conduct and ethics, procurement policy, and whistleblower policy
- Developed supplier code of conduct and deployed to all suppliers
- Address modern slavery in contract clauses

However, the first Modern Slavery Statement will be published to describe the action and performance on modern slavery eradication efforts in 2021, and it will be published annually.

MANAGEMENT APPROACH

The Company is committed to respecting human rights in accordance with the Universal Declaration of Human Rights (UDHR), the United Nations Guiding Principles on Business and Human Rights (UNGPs), the ILO Declaration on Fundamental Principles and Rights at Work and the United Nations Global Compact (UNGC), including local regulations as stated in the corporate human rights policy. In practice, the Company adheres to the principles of liberty, equality and human dignity and shall not discriminate against gender, race, religion, and color in order to prevent and avoid human rights violations among employees, partners, customers, contractors, suppliers, communities, and vulnerable groups namely children, women, the disabled, indigenous peoples, migrant workers, and the elderly.

At present, a human rights due diligence manual is under standardization. However, the Company has conducted a self-assessment to identify the human rights risks at the corporate level with 6 focus areas as follows:

- Employment
- Occupational health and safety
- Customer and product stewardship
- Community
- Security arrangements
- Contractors and supply chain

The Company promotes human rights awareness through various communication channels for both employees and concerned parties such as security personnel. Currently, the training material is being standardized to ensure the same practice across business units.

LABOR UNION AND COLLECTIVE BARGAINING AGREEMENT

The Company respects employees' rights to freely and voluntarily establish and join a union or similar bodies without interference or fear of retaliation as specified in the Employee Relation Policy. In parallel, the Company also encourages regular communications with employees to maintain good relationships and enhance understanding of benefits, career paths, and business directions. In addition, the quarterly informal meeting with union leaders is also arranged to foster a collaborative environment. Members of unions represent 76% of the workforce in Indonesia and Australia or 58% of total workforce.

SECURITY FORCES

With respect to the Voluntary Principles on Security and Human Rights, risk assessment on the security arrangement is undertaken at each operational site as part of the Company's human rights risk assessment. In 2020, the Company conducted a self-assessment to identify the human rights risk, including the security arrangement in Indonesia, Australia, China, Japan, and Thailand. Initially, the results showed that the Company does not have any human rights risks related to security arrangements and has no security forces across all business units. All the Company's security personnel are unarmed while performing security duties in operational areas. Moreover, training sessions have been provided to cover the need for security personnel to respect human rights.

COMMUNITY ENGAGEMENT

To create sustainable values and build stakeholder's trust as mentioned in the mission statement, the Company places a high priority on stakeholder engagement, in particular, with the local communities, who are one of the Company's stakeholders.

	2020	Target 2020
Number of significant community complaints	200	0
Proportion of significant complaints from communities resolved through a dispute mechanism	100%	100%

PERFORMANCE

In 2020, the Company arranged 6 Community Consultative Committee (CCC) meetings with all related villages in Indonesia and arranged 26 sub-committee meetings at the mine cluster level in Australia. According to the meetings, most of communities put priorities on improving their quality of life, especially in health and economy. There were 200 significant complaints raised by the communities in Australia. However, all complaints have been resolved according to the community complaint management standard.

CULTURAL HISTORY OF THE LAKE MACQUARIE CONSERVATION PROJECT

Centennial, the Company's subsidiary in Australia, collaborated with The Rathmines Catalina Memorial Park Association Incorporated (RCMPA Inc.) to establish the "Cultural History of the Lake Macquarie Conservation Project". The project enhances significance of the Rathmines Park where is recognized as a site of state and local significance on the Office of Environment and Heritage (OEH) State Heritage registered for the former RAAF Base Rathmines and the Catalina aircraft remains. Centennial has supported the project by allocating resources to develop a business plan, showing the social benefit of the activities, and also providing secure storage for the plane's equipment such as motor and fuselage parts. Moreover, as a member of the management committee, Centennial provides strategic advice to the Association in relation to funding and masterplans that have a bearing on the plane's future.

MANAGEMENT APPROACH

A stakeholder analysis framework has been devised and integrated into the corporate strategic formulation process. Moreover, stakeholder engagement and community complaint management standards have been introduced as a basis for all business units to ensure that all complaints are handled properly.

Process	Practice
Understanding the basic characteristics	• Collect stakeholder baseline data • Conduct social mapping • Conduct stakeholder analysis
Building engagement	• Hold an annual meeting of the Community Consultative Committee (CCC) • Support community relations activities to build a good relationship with the community • Provide various communication and complaint channels including letter, email, and telephone
Handling complaints	• Follow the corporate community complaint management standard

The environmental and social impact assessment (ESIA) has been conducted since project development and when there is a significant change. The assessment reports are then communicated to local community. Moreover, stakeholder analysis and social mapping are conducted during the pre-operation and operational stages. The community consultative committee: CCC, involving government, community, and company representatives has been established.

In practice, the community engagement approach in each country varies according to local business characteristics and community contexts. In Indonesia, the Company has appointed Community Development Officer (CDO) who can cooperate with local communities to understand their requirements, communicate the Company's activities, and be a focal point for any complaints raised. On the other hand, in Australia, the Company has established a sub-committee at the mine cluster level whose role is to ensure that local communities understand the Company's operational plans and performance.

Business	Operational status	No. of business unit		
		Total	ESIA conducted	ESIA communicated
Mining - Indonesia	Operating	5	5	5
	Project	2	2	2
Mining - Australia	Operating	5	5	5
	Project	4	4	4
Renewable power - China	Operating	7	7	7
	Project	-	-	-

Mr. Darwin Sitompul
Head of CCC Besiq Village

Our village is located at the intersection of Trubaindo and Barinto mine. Both mine sites have initiated several development projects for our community, such as education development, economic development, and infrastructure development. The programs are very effective and specifically focused on community needs, with involvement of various stakeholders, including community leaders, custom leaders, religious leaders, schools, health institutions, as well as youth groups. I would like to express our appreciation to both mines for being a counterpart in enhancing the community's well-being.

COMMUNITY DEVELOPMENT

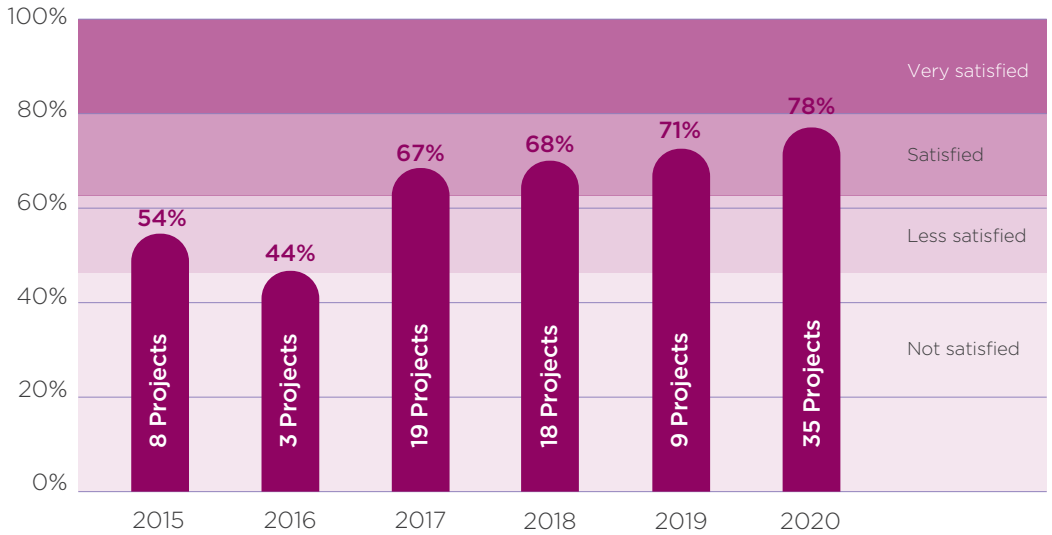
Community is considered to be a key stakeholder of the Company since social license to operate is a foundation of the business. Building sustainable value for the community is thus one of the Company's key agendas.

	2020	Target 2020
Coverage of annual stakeholder satisfaction survey on community development projects	100%	100%
Average stakeholder satisfaction level on community development projects	78%	>70%

PERFORMANCE

In Indonesia, the Company conducted annual stakeholder satisfaction survey on community development projects at all mines. The surveys were conducted for 35 community development projects with an average satisfaction level of 78%, which is considered as a "Satisfied" level. In China, 9 community development projects are being implemented with plan to conduct a stakeholder satisfaction survey in 2022.

AVERAGE STAKEHOLDER SATISFACTION LEVEL



FISH FARMING SDGs 2.3

Embalut initiated a fish farming program with an objective to build the community's economic growth since 2015. The program includes fish breeding, rearing, and fattening activities. There were 12 participants separated into 3 groups joining the program. The Company also promoted the utilization of ex-mining area by allocating 6 hectares of area for the program. Fish breeding is first responsible by one group, who breeds and raises fingerlings before selling directly to the market and also to the other two groups for the fattening purpose. From this program, participants can produce about 14 tonnes of fish per month. The marketing skills training was also conducted to equip participants with capability to manage the project by themselves. As a result, the average monthly income of group members was increased to IDR 3.25 million, which was higher than the minimum wages. In 2018, Embalut and the Fishery group was awarded the "Gold Category" in Indonesia Sustainable Development Goals Award.

NON-FORMAL EDUCATION PROGRAM SDGs 4.4 SDGs 8.2

With an intention to increase literacy rate and job opportunity for the community, Indominco has supported the community learning center for a non-formal education program. Since 2011, the program has offered several courses, both primary and higher levels, and 90 skill training programs including women empowering programs. Until now, there were 1,657 people from 7 villages completing the program, and their quality of life was significantly improved both in terms of social opportunities and income. The program's achievement was proved that 69% of participants can continue to higher education level. Besides, the Company also promoted local employment by encouraging contractors to hire graduated students from the program. Since the beginning, 85 graduated participants have been employed in several technical positions such as operational staff and mechanics which could generate a minimum of IDR 3.18 million per month for them.

COMMUNITY WASTE BANK SDGs 12.5

Concerning the efficient use of natural resources and waste generation, Embalut has initiated the waste bank program and promote waste management among community around the mine since 2015. The program was designed to encourage local households to sort and sell waste that can be recycled to waste banks. Currently, 4 waste bank groups are operating, and 40 deposit locations have been located in 4 villages. At present, there were 1,423 households becoming waste bank customers, with more than 50 tonnes of accumulative waste were effectively managed. The program also promotes local product development from recycling waste such as handbags, pouches, and eco-bricks, which were sold at exhibition events. The groups can earn an annual income at IDR 73 million, while the customers also generate an additional annual income of more than IDR 75.5 million from waste selling. Since the beginning, the SROI ratio was 1:0.95. Moreover, Embalut and the waste banks were awarded the "Gold Category" in Indonesia Sustainable Development Goals Award in 2019.

COMMUNITY CLEAN WATER SUPPLY

SDGs 6.4

During the dry season, the residents in Santan Tengah village have to purchase water from a local water supplier because water scarcity and water quality degradation issues. To reduce suffering, Indominco has collaborated with community leaders and local authorities to initiate the clean water supply project. Since 2013, the Company has allocated over IDR 2.44 billion to construct 6 water supply systems consisting of storage tanks, pipelines, and water treatment systems. As a result, 460 Santan Tengah residents can save water costs at IDR 424 million per month. In addition, with a capacity of 21,342 cubic meters per month, not only Santan Tengah households that water system can supply but also 1,031 households in other 7 villages. Moreover, the Company also supported the community's long-term self-management of the project by establishing community enterprises (BUMDes) which can generate income of IDR 10,328,725 per month throughout 2020. Since the construction of the water system from 2017 to 2020, the project identified the SROI rate at 1:3.27. In 2017, Indominco was awarded the "Gold Category" in the Indonesian CSR Awards for this project.

MINING OUTER RING ROAD DEVELOPMENT

SDGs 11.2

To improve the well-being of local community, Indominco has supported road development in the areas surrounding port since 2012. With the total budget of IDR 3.01 billion, 3.82 kilometers of the local road were upgraded, which benefited more than 10,976 people in 3 villages: Santan Tengah, Santan Ilir, and Bontang Lestari. The project can boost local economic growth as the road significantly increases accessibility between villages. From this project, people can travel conveniently and safely as well as transport their agricultural products such as rice and palm oil from their farms to the market faster. In addition, the road improvement can also improve air quality in the communities as road dust is minimized. The project also offered jobs to 42 local workforces who were involved in construction activities as contractors, with a monthly income of IDR 3.18 million.

DAYAK TRADITIONAL HOUSE

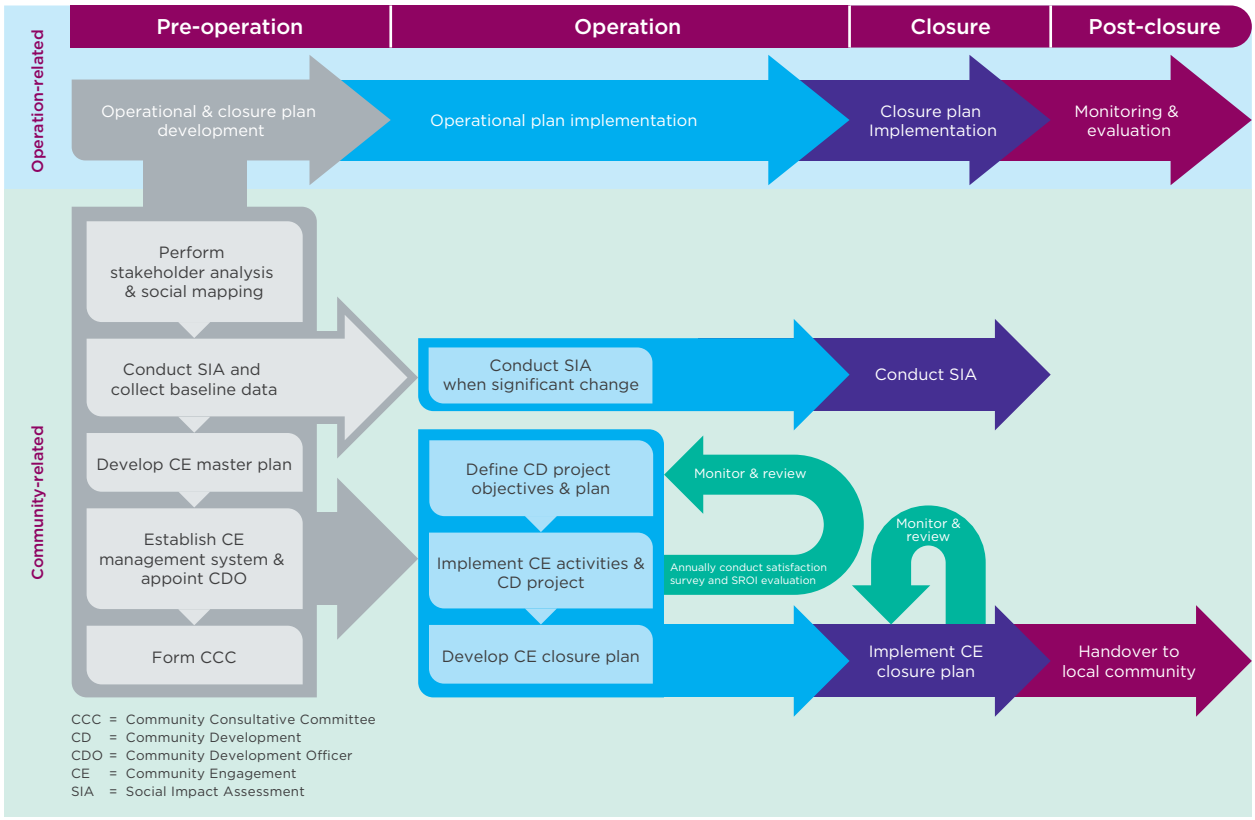
SDGs 11.4

Dayak tribe is an indigenous people in Kalimantan, Indonesia, which has a unique cultural identity. At present, there are more than 3,000 Dayak households living near Trubaindo mine. With a commitment to preserving Dayak's local customs and culture, the Company has engaged with the Dayak community leaders in "Dayak Cultural Conservation Project" to identify a way to protect their precious culture. In September 2020, with over IDR 6,000 billion of budget, the construction of Dayak traditional house had been completed, where it becomes an office of Dayak custom leaders, cultural exhibitions, and meeting rooms. The utilization and maintenance of this traditional house is managed by a committee. In addition, this house is expected to be promoted as a cultural tourist attraction in the near future.

MANAGEMENT APPROACH

The Company sets a community development strategy in line with the UN Sustainable Development Goals (SDGs). With collaboration between the Company, the community, and the local government, 6 dimensions of community development programs are prioritized. To ensure consistency in the actions taken at different locations, a corporate standard has been developed as a framework for all business units. Furthermore, the Company adopts the Social Return on Investment (SROI) framework as a tool to measure the social impact and evaluate the effectiveness of the community development programs.

Throughout the Company's operations, the Social Impact Assessment (SIA) has been conducted at the beginning of project, when project has significant change during operation stage, and before entering the closure stage. Stakeholder analysis and social mapping are conducted during the pre-operation phase to identify target groups and their needs in order to design appropriate community development programs. Performance of the projects, including community satisfaction and SROI evaluation is monitored and reviewed annually to ensure the utmost benefits of the program. The Company also commits to maintaining the level of community satisfaction at least "Satisfied" level or greater than 68%. Furthermore, the quality assurance review has been carried out by specific staff not involved in the projects to ensure transparency.



RESETTLEMENT

When a project is developed close to the community, it is sometimes necessary to relocate the people residing in the license area. Poor management can have adverse consequences on the quality of life of existing communities and the Company's social license to operate.

	2020	Target 2020
Number of significant resettlement complaints	0	0
Proportion of significant resettlement complaints resolved by a dispute resolution mechanism	NA*	100%

* No resettlement complaints

PERFORMANCE

In 2020, the Company deployed resettlement management standard across all business units. There was no resettlement taking place in the Company's ongoing projects, and therefore no resettlement complaints have been reported.

MANAGEMENT APPROACH

The Company's resettlement management standard is developed in line with international guidelines such as the International Finance Corporation (IFC) and the International Council on Mining & Metals (ICMM). It is clearly stated that unnecessary resettlement should be avoided since it has a detrimental effect upon the quality of life of those affected communities. However, where resettlement is unavoidable, the Company then strictly follows the standard comprising of 6 key measures to minimize potential impacts.

- **Mutual agreement setting** to develop objectives and mutual agreement with government agencies
- **Strategy formulation** to develop implementation strategy
- **Expert consultation** for maximum effectiveness of resettlement management
- **Stakeholder consultation** to study the concerns of related stakeholders
- **Resettlement planning** to develop resettlement plan and use as a framework
- **Monitoring and evaluation** to measure the progress against plan and the outcomes

INDIGENOUS PEOPLES

It is common for mining business that some of its operational areas are adjacent to communities which, in some regions, are indigenous. Protection of the rights and the cultural heritage of indigenous peoples is therefore one of the important issues for the Company.

	2020	Target 2020
Number of indigenous peoples and ethnic minorities' rights violations	0	0
Proportion of indigenous peoples and ethnic minorities' rights violations resolved through a dispute mechanism	NA*	100%

* No violations

PERFORMANCE

The Company conducted 4 times of Northern and Western Aboriginal Heritage Committee meetings to communicate the actual performance and future projects to aboriginal peoples. The meeting also became a channel of the Company to gather concerns of people and to seek mutual agreements and resolutions for the issues. In 2020, there were neither reports on rights violations of the indigenous peoples or ethnic minorities nor complaints due to the mining-related impacts from operations in both Indonesia and Australia.

MANAGEMENT APPROACH

The Company has conducted the preliminary assessment for all business units to identify whether there are indigenous communities in the surrounding areas. In case there is an operational site adjacent to indigenous peoples, the Company then carries out data collection to understand such peoples with regard to their substantial characteristics such as culture, belief, and religion. In addition, the cultural heritage management plan is developed for each specific site to ensure that the cultural heritage is respected and preserved as well as to avoid any violations against their rights.

	Indonesia	Australia
Indigenous peoples	Dayak Peoples: Tunjung, Benuaq, and Bentain	Aboriginal peoples
Business unit	Trubaindo and Bharinto mines	Airly, Springvale, Clarence, Myuna, and Mandalong mines
Engagement approach	• Operate in compliance with Adat Law, which covers the practice of external businesses operating inside Dayak communities • Establish a Community Consultative Committee which includes representatives from the Dayak communities • Implement projects designed to preserve the Dayak cultural heritage as well as their quality of life	• Implement the Aboriginal Cultural Heritage Management Plan (ACHMP) at both western and northern mine clusters in accordance with the laws and management guidelines set out within the Aboriginal Land Rights Act (1983), Heritage Act (1977), and Environmental Planning & Assessment Act 1979 (EP&A ACT) • Establish sub-committees which includes the representatives from the Aboriginal peoples who are registered with the Company • Regularly conduct social impact assessment and engage the Aboriginal peoples through meetings at least twice a year • Support activities relevant to Aboriginal cultural heritage conservation

LIST OF BUSINESS

ENERGY RESOURCES

As of 31 December 2020

Mining Business

Country	Name	Type	Status	Production volume		Ownership
				100% basis	Equity-based	
Indonesia	Indominco	open-pit coal mine	operating	9.0 Mt	6.0 Mt	67.13%
	Trubaindo	open-pit coal mine	operating	4.2 Mt	2.8 Mt	67.13%
	Bharinto	open-pit coal mine	operating	2.7 Mt	1.8 Mt	67.13%
	Jorong	open-pit coal mine	operating	1.2 Mt	0.8 Mt	67.13%
	Kitadin-Embalut	open-pit coal mine	operating	1.2 Mt	0.8 Mt	67.13%
	Tepian Indah Sukses	open-pit coal mine	project development	-	-	67.13%
	Nusa Persana Resources	open-pit coal mine	project development	-	-	67.13%
China	Gaohe	underground coal mine	operating	9.0 Mt	4.0 Mt	45%
	Hebi	underground coal mine	operating	1.2 Mt	0.5 Mt	40%
Australia	Airly	underground coal mine	operating	1.5 Mt	1.5 Mt	100%
	Clarence	underground coal mine	operating	2.1 Mt	1.8 Mt	85%
	Mandalong	underground coal mine	operating	5.2 Mt	5.2 Mt	100%
	Myuna	underground coal mine	operating	1.0 Mt	1.0 Mt	100%
	Springvale	underground coal mine	operating	2.9 Mt	2.9 Mt	100%
	Angus Place	underground coal mine	care & maintenance	-	-	100%
	Newstan	underground coal mine	care & maintenance	-	-	100%
	Inglenook	underground coal mine	project development	-	-	100%
	Neubecks	open-pit coal mine	project development	-	-	100%
Mongolia	Altai Nuurs	coal mine	project development	-	-	100%
	Unst Khudag	coal mine	project development	-	-	100%
	Tsant Uul	coal mine	project development	-	-	100%

Gas Business

Country	Name	Type	Status	Production capacity (100% basis)
The U.S.	Marcellus	shale gas production	operating	173 MMcfed
	Barnett[(a)]	shale gas production	operating	565 MMcfed

ENERGY GENERATION

Thermal Power Business

Country	Name	Type	Status	Production capacity		Ownership[(c)]
				100% basis	Equity-based	
Thailand	BLCP	coal-fired power plant	operating	1,434 MW	717 MW	50%
Lao PDR	HPC	coal-fired power plant	operating	1,878 MW	751 MW	40%
China	Zhengding	combined heat & power plant	operating	139 MW	139 MW	100%
	Luannan	combined heat & power plant	operating	227 MW	227 MW	100%
	Zouping	combined heat & power plant	operating	247 MW	173 MW	70%
	Shanxi Lu Guang	coal-fired power plant	operating[(b)]	1,320 MW	396 MW	30%

Renewable Power Business

Country	Name	Type	Status	Production capacity		Ownership
				100% basis	Equity-based	
China	Jinshan	solar power plant	operating	28.95 MW	28.95 MW	100%
	Huineng	solar power plant	operating	21.51 MW	21.51 MW	100%
	Haoyuan	solar power plant	operating	20.00 MW	20.00 MW	100%

(a) Purchase and sale agreement was completed in October 2020.
(b) Plant completed construction and set of start-up trial operation. It will be ready to commission and supply heat in the 1st quarter of 2021
(c) Banpu Power's ownership (78.57% share is held by Banpu)

Renewable Power Business

Country	Name	Type	Status	Production capacity		Ownership
				100% basis	Equity-based	
China	Hui'en	solar power plant	operating	19.70 MW	19.70 MW	100%
	Deyuan	solar power plant	operating	51.64 MW	51.64 MW	100%
	Xingyu	solar power plant	operating	10.30 MW	10.30 MW	100%
	Jixin	solar power plant	operating	25.22 MW	25.22 MW	100%
Japan	Olympia	solar power plant	operating	10.00 MW	4.00 MW	40%
	Hino	solar power plant	operating	3.50 MW	2.63 MW	75%
	Awaji	solar power plant	operating	7.90 MW	5.93 MW	75%
	Nari Aizu	solar power plant	operating	20.46 MW	15.35 MW	75%
	Mukawa	solar power plant	operating	17.00 MW	9.52 MW	56%
	Kurokawa	solar power plant	operating	18.90 MW	18.90 MW	100%
	Tenzan	solar power plant	operating	1.96 MW	1.96 MW	100%
	Muroran 1	solar power plant	operating	1.73 MW	1.73 MW	100%
	Muroran 2	solar power plant	operating	1.63 MW	1.63 MW	100%
	Takeo 2	solar power plant	operating	1.00 MW	1.00 MW	100%
	Yamagata	solar power plant	operating[(d)]	20.00 MW	20.00 MW	100%
	Yabuki	solar power plant	operating[(e)]	7.00 MW	5.25 MW	75%
	Shirakawa	solar power plant	project development	10.00 MW	10.00 MW	100%
	Kesennuma	solar power plant	project development	20.00 MW	20.00 MW	100%
	Yamagata Iide	solar power plant	project development	200.00 MW	102.00 MW	51%
Vietnam	Vinh Chau	wind power plant	project development	80.00 MW	80.00 MW	100%
	El Wind Mui Dinh[(f)]	wind power plant	operating	37.60 MW	37.60 MW	100%

ENERGY TECHNOLOGY

Solar Rooftop & Floating

Country	Name	Type	Status	Production capacity		Ownership
				100% basis	Equity-based	
Thailand	Banpu NEXT	solar rooftop	operating	20.60 MW	20.60 MW	100%
	Banpu NEXT	solar floating	project development	16.00 MW	16.00 MW	100%
Singapore	Sunseap	solar rooftop	operating	727.80 MW	353.90 MW	48.63%

Energy Storage & System

China	Durapower	energy storage	operating	1.0 GWh	0.5 GWh	47.68%

Smart Community

Country	Name	Type	Status	Progress		Ownership
				100% basis	Equity-based	
Thailand	Banpu NEXT	smart community	project development	5 projects	5 projects	100%

Electric Vehicle

Thailand	Banpu NEXT	e-Ferry	operating	1 unit	1 unit	100%
	Urban Mobility Tech	electric vehicle fleet	operating	2,500 passengers/day on 100 cars	768 passengers/day on 31 cars	30.70%
Japan	FOMM	electric vehicle	operating	Launch FOMM One		21.50%

Energy Trading

Country	Name	Type	Status	Production volume		Ownership
				100% basis	Equity-based	
Japan	Banpu Power Trading G.K.	energy trading	operating	280 GWh	280 GWh	100%

(d) Commercial Operation Date (COD) in November 2020
(e) Commercial Operation Date (COD) in December 2020
(f) Acquired in July 2020

DATA BOUNDARY

Sustainability Topic	Mining business			Thermal power business	Renewable power business			Solar rooftop business	Office	
	Indonesia	Australia	Mongolia	China	China	Japan	Vietnam	Thailand	Thailand	Singapore
Sustainability Governance	●	●	●	●	●	●	●	●	●	●
Business Ethics	●	●	●	●	●	●	●	●	●	●
Digital Transformation	●	●	NR	●	●	●	●	●	●	●
Supplier Management	●	●	NR	●	○	○	○	○	◔	○
Customer & Product Stewardship	●	●	NR	●	●	●	○	◔	NR	NR
Economic Distribution	●	●	●	●	●	●	●	●	●	●
Efficiency & Reliability of Power Plants	NR	NR	NR	●	NR	NR	NR	NR	NR	NR
Socioeconomic Compliance	●	●	●	●	●	●	●	●	●	●
Risk Management	●	●	●	●	●	●	●	●	●	●
Business Continuity Management	●	●	NR	●	●	●	●	●	●	●
Data Privacy & Cybersecurity	●	●	NR	●	●	○	○	●	●	○
GHG Emissions	●	●	NR	●	●	●	○	●	NR	NR
Energy	●	●	NR	●	●	●	○	●	NR	NR
Air Emissions	●	●	NR	●	NR	NR	NR	NR	NR	NR
Water	●	●	NR	●	●	●	○	NR	NR	NR
Waste	●	●	NR	●	○	○	○	○	NR	NR
Biodiversity	●	●	NR	●	●	●	○	NR	NR	NR
Mineral Waste	●	●	NR	NR	NR	NR	NR	NR	NR	NR
Mine Closure	●	●	NR	NR	NR	NR	NR	NR	NR	NR
Mine Subsidence	NR	●	NR	NR	NR	NR	NR	NR	NR	NR
Environmental Compliance	●	●	●	●	●	●	○	●	NR	NR
Employee Management	●	◔	●	●	●	●	◔	●	●	●
Human Capital Development	●	●	●	●	●	●	●	●	●	●
Corporate Culture	●	●	●	●	●	●	◔	●	●	●
Occupational Health and Safety	●	●	●	●	●	●	●	●	●	○
Human Rights	●	●	○	●	●	●	○	●	●	○
Community Engagement	●	●	NR	NR	●	NR	○	NR	NR	NR
Community Development	●	NR	NR	NR	◔	NR	○	NR	NR	NR
Resettlement	●	●	NR	●	●	●	○	NR	NR	NR
Indigenous Peoples	●	●	NR	NR	NR	NR	NR	NR	NR	NR

●●●● Management approach and performance data cover such business.
◔◔◔◔ Management approach covers such business but performance data cover partially.
○○○○ Management approach covers such business but performance data have not covered.
NR No significant or no relevance to such business.

Remarks

This report excludes the business entities that the Company holds less than 50% of shares and does not have management control as listed below;

- Mining business in China
- Thermal power business in Thailand and Lao PDR
- Solar rooftop business in Singapore
- Energy storage & system business in China
- Electric vehicle business in Thailand

For business entities that the Company holds a greater than 50% of shares and has management control as listed below, the data collection process is under standardization.

- Gas business in the U.S.
- Smart community business in Thailand
- Energy trading business in Japan

PERFORMANCE DATA

ECONOMIC PERFORMANCE

	2017	2018	2019	2020
Revenues (USD million)	2,877	3,481	2,759	2,283
EBITDA[a] (USD million)	968	1,178	701	563
Net profit (USD million)	234	205	(20)	(56)
Gross profit margin	39%	35%	26%	20%
Interest coverage ratio	5.7	3.8	2.4	2.5
Net debt to equity ratio	0.98	1.02	1.23	1.47

[a] Earnings before interest, taxes, depreciation, and amortization

TAX PAYMENT – BY COUNTRY

	2017	2018	2019	2020
Indonesia				
• Net profit before tax (USD million)	362	367	186	725
• Income tax (USD million)	(109)	(109)	(59)	(35)
• Income tax paid (USD million)	(60)	(109)	(111)	(63)
• Income tax rate	25%	25%	25%	22%
China				
• Net profit before tax (RMB million)	257	126	162	339
• Income tax (RMB million)	(67)	(31)	(46)	(74)
• Income tax paid (RMB million)	(52)	(50)	(41)	(60)
• Income tax rate	25%	25%	25%	25%
Australia				
• Net profit before tax (AUD million)	79	85	30	(157)
• Income tax (AUD million)	(21)	(25)	(5)	-
• Income tax paid (AUD million)	-	-	-	-
• Income tax rate	30%	30%	30%	30%
Banpu[a]				
• Net profit before tax (USD million)	477	504	125[b]	(8)
• Income tax (USD million)	(134)	(189)	(78)[b]	(9)
• Income tax paid (USD million)	(97)	(135)	(140)	(78)
• Income tax rate	20-25%	20-25%	20-25%	20-25%

[a] Consolidated
[b] Adjusted from the previous report

BUSINESS ETHICS

	2017	2018	2019	2020
Number of significant corporate governance complaints	0	0	10	9
• Corruption and bribery	0	0	2	0
• Fraud, embezzlement, theft	0	0	2	1
• Dishonesty for own and other benefit	0	0	1	4
• Dangers to health and safety or the environment	0	0	1	0
• Intentional act causing harm or loss to the Company	0	0	2	1
• Significant breaches of the Code of Conduct[d]	0	0	2	0
• Assistance in wrongdoing[a]	0	0	0	0
• Others[b]	0	0	0	3
Proportion of significant corporate governance complaints resolved through a dispute mechanism	NA[c]	NA[c]	100%	100%

[a] Against the law, rules and regulations, corporate governance policy and code of conduct including concealing or assisting in concealing once they have occurred
[b] Includes discrimination and unfair treatment
[c] No significant complaints
[d] Includes antitrust/anti-competitive practices

SUSTAINABILITY GOVERNANCE

	2017	2018	2019	2020
Coverage of significant ESG aspects set as corporate ESG targets	-	-	100%	100%
Coverage of corporate ESG targets deployed to senior executives	-	-	100%	100%
Number of meeting				
• Board of Directors	12	12	12	13
• Corporate governance and nomination committee	5	4	4	4
• Audit committee	8	10	9	9
• Compensation committee	6	9	6	8
Meeting attendance				
• Board of Directors	97%	94%	97%	97.62%
• Corporate governance and nomination committee	100%	88%	94%	94%
• Audit committee	100%	97%	100%	100%
• Compensation committee	100%	100%	94%	100%
Performance assessment of the Board of Directors[a]				
• Group	4.86	4.73	4.76	4.74
• Individual (average)	4.80	4.75	4.51	4.56
• Sub-committee (average)	4.79	4.92	4.89	4.67

[a] In the range of 0 to 5

RISK MANAGEMENT

	2017	2018	2019	2020
Proportion of business units with key risk indicators	100%	100%	100%	100%
Coverage of ESG issues in the enterprise risk management[a]	-	-	-	87%
Proportion of business units with ESG risk management plans[b]	-	-	-	100%

[a] Based on COSO
[b] For business unit(s) with high priority ESG risks

BUSINESS CONTINUITY MANAGEMENT

	2017	2018	2019	2020
Coverage of CMT/IMT exercise[a]	-	33%	25%	100%

[a] The real activation of CMT/IMT considered as a BCP exercise

DIGITAL TRANSFORMATION

	2017	2018	2019	2020
Number of use-cases & initiatives	-	7	199	13
Amount of business impact value (USD million)	-	0	84	43
Number of new digital capability centers	-	1	1	2
Number of tech ecosystem partners	-	6	30	12
Number of employees trained through the digital academy	-	400	1,200	1,400

ECONOMIC DISTRIBUTIONS

	2017	2018	2019	2020
Ratio of the dividend payout to net profits	0.35	0.55	NA[g]	NA[g]
Economic value generated (USD million)				
• Sales	2,792	3,307	2,652	2,219
• Other revenues	260	420	352	228
Economic value distributed (USD million)				
• Shareholder[a]	83	112	116	63
• Supplier and contractor[b]	1,021	1,204	1,164	1,173
• Employee[c]	259	283	287	308
• Financial Institution[d]	131	166	174	166
• Government[e]	440	471	356	246
• Community[f]	5	7	6	3
Economic value retained (USD million)	1,113	1,484	901	485
Community & social investment - by objective				
• Donations to charity	36%	35%	33%	46%
• Community investments	39%	30%	28%	44%
• Commercial initiatives	25%	35%	39%	10%
Community & social investment - by type				
• Cash contribution	61%	78%	93%	70%
• Time provided by volunteer staff	3%	6%	4%	22%
• Management overhead	32%	6%	2%	7%
• In-kind giving	4%	10%	1%	1%
Community investment – by dimension				
• Economic development & income generation	14%	34%	32%	32%
• Social & cultural promotion	21%	16%	17%	23%
• Infrastructure development	33%	14%	14%	17%
• Education development	9%	12%	20%	15%
• Health and sanitation development	2%	8%	14%	9%
• Environmental conservation	20%	16%	3%	4%

[a] Dividends
[b] Includes contractor costs, fuel cost, and all other operating costs
[c] Includes remuneration and benefits, provident fund contributions, employee development expenses
[d] Includes interest and financial expenses
[e] Includes royalty fee, corporate income tax, local maintenance tax, property tax, specific business tax, and other additional taxes and payment to government
[f] Includes community development expenses, corporate social responsibility activities and land compensation
[g] The Company recorded a net loss

CONTRIBUTIONS TO EXTERNAL ORGANIZATIONS & ASSOCIATIONS

	2017	2018	2019	2020
Lobbying or interest representation (USD million)	-	0	0	0
Political party or political interest (USD million)	-	0	0	0
Trade association or tax-exempt groups (USD million)	-	0.54	0.53	1.04
Other contribution (USD million)	-	0	0	0

DATA PRIVACY & CYBERSECURITY

	2017	2018	2019	2020
Number of cybersecurity breaches	-	-	-	1
Number of IT infrastructure incidents	-	-	-	1
Incident response rate	-	-	-	-[a]

[a] Data collection system under standardization

EFFICIENCY & RELIABILITY OF POWER PLANTS[a]

	2017	2018	2019	2020
Efficiency rate				
• Electricity generation (g/KWh)	261	270	279	247
• Steam production (kg/GJ)	37.53	37.58	37.94	37.75
Availability factor	93.72%	89.02%	94.07%	97.72%
Overall efficiency	69.70%	66.69%	65.07%	74.70%
Planned outage				
• Frequency (case)	23	22	25	15
• Duration (hour/case)	1,303	1,867	241	174
Unplanned outage				
• Frequency (case)	7	4	1	0
• Duration (hour/case)	49	1,913	457	NA[b]

[a] Includes 3 combined heat and power plants in China only
[b] No unplanned outage

SUPPLIER MANAGEMENT

	2017	2018	2019	2020
Number of suppliers				
• All suppliers	-	3,056[b]	4,037	3,197
• Critical suppliers	-	19[d]	195[c]	2,389
Proportion of suppliers assessed for ESG risks				
• All critical tier-1 suppliers	-	100%[d]	69%[c]	3%
• New critical tier-1 suppliers	-	100%[d]	23%[e]	-[f]
Proportion of spending on local suppliers[a]	-	49%[b]	66%	38%
Proportion of contracts that include ESG clauses	-	-	28%[e]	15%

[a] Supplier that operates in the same region
[b] Includes data of mining business in Indonesia and Australia only
[c] Includes data of mining business in Indonesia and thermal power business in China only
[d] Includes data of mining business in Indonesia only
[e] Includes data of thermal power business in China only
[f] Data collection system under standardization

CUSTOMER & PRODUCT STEWARDSHIP

	2017	2018	2019	2020
Number of complaints				
• Customer privacy	0	0	0	0
• Safety and environmental issues from the use of products	0	0	0	0
Proportion of customer complaints resolved in a timely manner	NA[a]	NA[a]	NA[a]	NA[a]

[a] No complaints

SOCIOECONOMIC COMPLIANCE

	2017	2018	2019	2020
Significant socioeconomic non-compliance	-	0	0	0
• Number of significant fines	-	0	0	0
• Number of significant non-monetary sanctions	-	0	0	0

PRODUCT

Mining Business	2017	2018	2019	2020
Finished coal (tonnes)	36,311,551	35,303,278	33,427,638	31,500,685
Power Business				
Electricity sold (MWh)	1,691,107	1,715,684	1,782,476	1,897,104
Steam sold (MWh)	4,236,338	3,975,903	3,328,603	3,564,832
Heat sold (MWh)	444,362	546,686	824,264	1,346,803
Solar Rooftop Business				
Electricity sold (MWh)	-	182	1,439	4,856

GHG EMISSIONS

Mining Business	2017	2018	2019	2020
GHG emissions (tonnes CO_2e)	4,752,727	5,157,510	4,207,035[d]	3,632,271
• Scope 1	4,501,535	4,616,826	3,734,004[d]	3,388,681
• Scope 1 (Biogenic)	-	283,352	226,857	360,983
• Scope 2	251,192	257,332	246,173	243,591
GHG emissions scope 3 (tonnes CO_2e)[a]	-	-	68,659,848	65,656,827
GHG emissions intensity[b] (tonnes CO_2e /tonne finished coal)	0.131	0.146	0.126	0.115
Power Business				
GHG emissions (tonnes CO_2e)	3,650,542	3,824,124	3,822,073	4,019,922
• Scope 1	3,648,340	3,821,632	3,814,884	4,010,202
• Scope 2	2,202	2,492	7,189	9,720
GHG emissions intensity[b] (tonnes CO_2e /MWh)	0.573	0.613	0.644	0.590
• Electricity generation	0.954	0.991	0.575	0.541
• Steam & heat generation	0.435	0.470	0.673	0.609
GHG emissions intensity - China[c] (tonnes CO_2e /MWh)				
• Energy sold from all generation capacity	0.574	0.615	0.651	0.599
• Energy sold from fossil generation capacity	0.591	0.635	0.675	0.619
GHG emissions intensity - Japan[c] (tonnes CO_2e /MWh)				
• Energy sold from all generation capacity	0	0	0	0
• Energy sold from fossil generation capacity	NA[e]	NA[e]	NA[e]	NA[e]
SF_6 emissions (tonnes CO_2e)	-	110	1,086	515
Proportion of electricity generated				
• Conventional fuel	88%	87%	86%	82%
• Renewable energy	12%	13%	14%	18%
Solar Rooftop Business				
GHG emissions (tonnes CO_2e)	-	13	17	17
• Scope 1	-	13	17	17
• Scope 2	-	0	0	0
GHG emissions intensity[b] (tonnes CO_2e /MWh)	-	0.073	0.012	0.003
• Electricity generation	-	0.073	0.012	0.003
• Steam & heat generation	-	NA[f]	NA[f]	NA[f]

[a] Use of products sold
[b] Scope 1 & 2
[c] Scope 1
[d] Adjusted data from the previous report
[e] No electricity generation from fossil fuel in Japan
[f] No steam or heat generation for solar rooftop business

ENERGY

Mining Business	2017	2018	2019	2020
Total energy consumption (TJ)	13,417	16,590	17,888[a]	13,353
Renewable energy consumption (TJ)				
• Renewable fuel	0	409	2,203	2,843
• Electricity purchased	0	0	0	0
• Electricity self-generated	0	0	0	13.75
Non-renewable energy consumption (TJ)				
• Non-renewable fuel	12,338	15,062	11,806[a]	9,420
• Electricity purchased	1,079	1,119	3,879[a]	1,077
• Steam, heat and cooling	0	0	0[a]	0
Energy consumption – by fuel				
• Biodiesel & diesel	-	-	63%	73%
• Waste gas	-	-	9%	12%
• Energy purchased	-	-	22%	8%
• Coal	-	-	5%	5%
• Others	-	-	1%	2%
Energy consumption intensity (GJ/tonne finished coal)	0.37	0.47	0.54[a]	0.42
Power Business				
Total energy consumption (TJ)	10,545	10,721	11,113	9,961
Renewable energy consumption (TJ)				
• Renewable fuel	0	0	0	0
• Electricity purchased	0	0	0	0
• Electricity self-generated	718	815	1,040	1,212
Non-renewable energy consumption (TJ)				
• Non-renewable fuel	32,756	32,354	31,410	33,221
• Electricity purchased	9	10	30	40
• Steam, heat and cooling	0	0	0	0
Energy consumption – by fuel				
• Coal	-	-	94%	89%
• Waste gas	-	-	6%	7%
• Solar	-	-	3%	4%
• Others	-	-	<1%	<1%
Renewable energy sold (TJ)				
• Electricity	701	809	1,033	1,202
Non-renewable energy sold (TJ)				
• Electricity	5,387	5,368	5,384	5,627
• Steam	15,251	14,313	11,983	12,833
• Heat	1,600	1,968	2,967	4,848
Energy consumption intensity (GJ/MWh)	1.65	1.72	1.87	1.46
Solar Rooftop Business				
Total energy consumption (TJ)	-	0	0.23	0
Renewable energy consumption (TJ)				
• Renewable fuel	-	0	0	0
• Electricity purchased	-	0	0	0
• Electricity self-generated	-	0.65	5.18	17.48
Non-renewable energy consumption (TJ)				
• Non-renewable fuel	-	-	0.23	0
• Electricity purchased	-	-	0	0
Renewable energy sold (TJ)				
• Electricity	-	0.65	5.18	17.48
Energy consumption intensity (GJ/MWh)	-	0	0.16	0.05

[a] Adjusted data from the previous report

AIR EMISSIONS

Mining Business	2017	2018	2019	2020
Air emissions load (tonnes)				
• SO_2	128	228	186	698
• NO_X	934	672	2,106	1,235
• PM_{10}	413	383	441	266
Air emissions intensity (g/tonne finished coal)				
• SO_2	3.5	6.5	5.6	22.2
• NO_X	25.7	19.0	63.0	39.2
• PM_{10}	11.4	10.8	13.2	8.4
Ozone-depleting substances (Kg CFC-11e)				
• ODS Consumption	87	132	68	181
• ODS imported	0	0	0	0
• ODS exported	0	0	0	0
Power Business				
Air emissions load (tonnes)				
• SO_2	174	149	153	164
• NO_X	455	323	246	272
• TSP	35	24	18	17
• Mercury (Hg)	-	-	0.0034	0.0085
Air emissions intensity - Energy sold from all generation capacity (g/MWh)				
• SO_2	27.3	23.9	25.8	24.1
• NO_X	71.4	51.7	41.4	39.9
• TSP	5.5	3.8	3.0	2.6
• Mercury (Hg)	-	-	0.0006	0.0012
Air emissions intensity – Energy sold from fossil generation capacity (g/MWh)				
• SO_2	28.2	24.8	27.1	25.4
• NO_X	73.7	53.6	43.6	42.0
• TSP	5.7	3.9	3.1	2.7
• Mercury (Hg)	-	-	0.0006	0.0013
Ozone-depleting substances (Kg CFC-11e)				
• ODS Consumption	0	0	1	1
• ODS imported	0	0	0	0
• ODS exported	0	0	0	0

WATER

Mining Business	2017	2018	2019		2020	
			Freshwater	Other water	Freshwater	Other water
Water withdrawal (ML)						
• from all areas[a]	437,389	1,022,935	154,841	0	1,380,376	1,184
• from water stress area	-	-	-[b]	0	0	0
Water withdrawal (ML)						
• Surface water[a]	417,493	999,982	138,579	0	1,366,286	0
• Groundwater	17,652	20,797	14,355	0	13,525	1,184
• Seawater	1,700	1,555	1,324	0	0	0
• Produced water	0	0	0	0	0	0
• Third-party water	544	601	582	0	564	0
Water withdrawal – from water stress area (ML)						
• Surface water[a]	-	-	-[b]	-[b]	-[b]	-[b]
• Groundwater	-	-	-[b]	-[b]	-[b]	-[b]
• Seawater	-	-	-[b]	-[b]	-[b]	-[b]
• Produced water	-	-	-[b]	-[b]	-[b]	-[b]
• Third-party water	-	-	-[b]	-[b]	-[b]	-[b]
Third-party water withdrawal – from water stress area (ML)						
• Surface water[a]	-	-	-[b]	-[b]	-[b]	-[b]
• Groundwater	-	-	-[b]	-[b]	-[b]	-[b]
• Seawater	-	-	-[b]	-[b]	-[b]	-[b]
• Produced water	-	-	-[b]	-[b]	-[b]	-[b]
Water discharge (ML)						
• to all areas[a]	432,398	1,018,058	149,689	0	1,373,167	931
• to water stress area	-	-	-[b]	-[b]	-[b]	-[b]
Water discharge (ML)						
• Surface water[a]	430,959	1,016,667	148,635	0	1,373,166	0
• Groundwater	0	0	0	0	0	0
• Seawater	1,439	1,392	1,054	0	0	931
• Third-party water	0	0	0	0	1	0
Water consumption (ML)						
• All areas	4,991	4,877	5,152		7,462	
• Water stress area	-	-	-[b]		-[b]	
Water consumption intensity (m^3/tonne finished coal)	0.137	0.138	0.154		0.237	
Change in water storage (ML)	-	-	-[b]		-[b]	

[a] Includes unused rainwater as amount of rainwater specifically consumed by mining activities cannot be separated

[b] Data collection system under standardization

WATER

Power Business	2017	2018	2019		2020	
			Freshwater	Other water	Freshwater	Other water
Water withdrawal (ML)						
• from all areas	8,563	7,838	6,761	0	7,615	0
• from water stress area	-	7,838	6,761	0	7,615	0
Water withdrawal (ML)						
• Surface water	6,056	5,076	0	0	0	0
• Groundwater	2,508	2,761	2,497	0	2,234	0
• Seawater	0	0	0	0	0	0
• Produced water	0	0	0	0	0	0
• Third-party water	0.5	1	4,265	0	5,381	0
Water withdrawal – from water stress area (ML)						
• Surface water	-	5,076	0	0	0	0
• Groundwater	-	2,761	2,497	0	2,234	0
• Seawater	-	0	0	0	0	0
• Produced water	-	0	0	0	0	0
• Third-party water	-	1	4,265	0	5,381	0
Third-party water withdrawal – from water stress area (ML)						
• Surface water	-	1	3,897	0	4,117	0
• Groundwater	-	0	0	0	0	0
• Seawater	-	0	0	0	0	0
• Produced water	-	0	0	0	0	0
• Reclaimed water[a]	-	-	367	0	1,264	0
Water discharge (ML)						
• to all areas	712	960	1,855	0	1,779	0
• to water stress area	-	960	1,855	0	1,779	0
Water discharge (ML)						
• Surface water	0	0	0	0	0	0
• Groundwater	0	0	0	0	0	0
• Seawater	0	0	0	0	0	0
• Third-party water	712	960	1,855	0	1,779	0
Water consumption (ML)						
• All areas	7,851	6,878	4,906		5,836	
• Water stress area	-	6,878	4,906		5,836	
Water consumption intensity (m^3/MWh)	1.232	1.103	0.827		0.857	
Change in water storage (ML)	-	-	-[b]		-[b]	

[a] From wastewater treatment plant

[b] Data collection system under standardization

WATER

Thermal Power Business	2019		2020	
	Freshwater	Other water	Freshwater	Other water
Water withdrawal (ML)				
• from all areas	6,756	0	7,611	0
• from water stress area	6,756	0	7,611	0
Water withdrawal (ML)				
• Surface water	0	0	0	0
• Groundwater	2,492	0	2,231	0
• Seawater	0	0	0	0
• Produced water	0	0	0	0
• Third-party water	4,264	0	5,380	0
Water withdrawal – from water stress area (ML)				
• Surface water	0	0	0	0
• Groundwater	2,492	0	2,231	0
• Seawater	0	0	0	0
• Produced water	0	0	0	0
• Third-party water	4,264	0	5,380	0
Third-party water withdrawal – from water stress area (ML)				
• Surface water	3,896	0	4,117	0
• Groundwater	0	0	0	0
• Seawater	0	0	0	0
• Produced water	0	0	0	0
• Reclaimed water[a]	368	0	1,263	0
Water discharge (ML)				
• to all areas	1,855	0	1,779	0
• to water stress area	1,855	0	1,779	0
Water discharge (ML)				
• Surface water	0	0	0	0
• Groundwater	0	0	0	0
• Seawater	0	0	0	0
• Third-party water	1,855	0	1,779	0
Water consumption (ML)				
• All areas	4,901		5,832	
• Water stress area	4,901		5,832	
Water consumption intensity (m^3/MWh)	0.868		0.901	
Change in water storage (ML)	-[b]		-[b]	

[a] From wastewater treatment plant
[b] Data collection system under standardization

WASTE

Mining Business[a]	2017	2018	2019	2020
Hazardous waste (tonnes)[b]				
• Hazardous waste transported	-	4,167	8,220	6,095
• Hazardous waste imported	-	0	0	0
• Hazardous waste exported	-	0	0	0
• Hazardous waste treated	-	4,761	9,108	6,598
Hazardous waste treated (tonnes)[b]	8,251	4,761	9,108	6,598
• Reuse	1,645	1,076	1,838	255
• Recycling	6,581	3,096	7,147	6,020
• Incineration	0	435	72	278
• Landfill	0	0	0	1
• Others	25	154	52	40
Non-hazardous waste treated (tonnes)	3,522	4,879	4,686	6,235
• Reuse	1,328	0	17	648
• Recycling	0	2,137	1,406	1,190
• Composting	-	-	64	10
• Incineration	0	1	0	0
• Landfill	2,194	2,678	3,124	4,375
• Others	0	62	76	11
Percentage of waste shipped internationally	-	0%	0%	0%
Proportion of hazardous waste reused & recycled				
• Exclude ash	99%	83%	97%	87%
• Include ash	100%	88%	99%	95%
Proportion of non-hazardous waste reused & recycled	38%	44%	30%	29%
Proportion of ash reused & recycled	100%	100%	100%	100%
Power Business				
Hazardous waste (tonnes)				
• Hazardous waste transported	-	113	22	103
• Hazardous waste imported	-	0	0	0
• Hazardous waste exported	-	0	0	0
• Hazardous waste treated	-	113	22	103
Hazardous waste treated (tonnes)	60	113	22	103
• Reuse	-	0	0	0
• Recycling	5[d]	10	13	84
• Recovery	0	101	3	16
• Incineration	0	3	6	4
• Landfill	0	0	0	0
• Others	55	0	0	0
Non-hazardous waste treated (tonnes)[c]	624,838	712,073	750,223	763,263
• Reuse	0	0	0	334,815
• Recycling	624,838	710,292	749,296	427,785
• Composting	-	1	0	0
• Recovery	-	236	0	0
• Landfill	0	1,517	844	583
• Others	0	27	84	80
Percentage of waste shipped internationally	-	0%	0%	0%
Proportion of hazardous waste reused & recycled	8%	9%	60%	81%
Proportion of non-hazardous waste reused & recycled				
• Exclude ash & synthetic gypsum	100%	31%	0%	2%
• Include ash & synthetic gypsum	100%	99%	99%	99%
Proportion of ash reused & recycled	91%	100%	100%	100%
Proportion of synthetic gypsum reused & recycled	100%	100%	100%	100%

[a] Excludes overburden and tailings
[b] Includes ash which is defined as hazardous waste in Indonesia
[c] Includes ash and synthetic gypsum
[d] Includes reuse of hazardous waste

WASTE

Thermal Power Business	2019	2020
Hazardous waste (tonnes)		
• Hazardous waste transported	22	103
• Hazardous waste imported	0	0
• Hazardous waste exported	0	0
• Hazardous waste treated	22	103
Hazardous waste treated (tonnes)	22	103
• Reuse	0	0
• Recycling	13	84
• Recovery	3	16
• Incineration	6	4
• Landfill	0	0
• Others	0	0
Non-hazardous waste treated (tonnes)[(a)]	750,221	763,254
• Reuse	0	334,815
• Recycling	749,296	427,785
• Composting	0	0
• Recovery	0	0
• Landfill	844	583
• Others	72	72
Percentage of waste shipped internationally	0%	0%
Proportion of hazardous waste reused & recycled	59%	81%
Proportion of non-hazardous waste reused & recycled		
• Exclude ash & synthetic gypsum	0%	2%
• Include ash & synthetic gypsum	99%	99%
Proportion of ash reused & recycled	100%	100%
Proportion of synthetic gypsum reused & recycled	100%	100%

[(a)] Includes ash and synthetic gypsum

BIODIVERSITY

Mining Business	2017	2018	2019		2020	
			Operating[a]	Project[b]	Operating[a]	Project[b]
Business unit(s) in relation to protected area	6	6	4	2	4	3
• In the area	0	0	0	0	0	0
• Adjacent to	0	0	1	1	1	1
• Containing portions	6	6	3	1	3	2
Business unit(s) in relation to high biodiversity wilderness area	1	1	3	1	3	0
• In the area	1	1	3	1	3	0
• Adjacent to	0	0	0	0	0	0
• Containing portions	0	0	0	0	0	0
Number of business units						
• Assessed for potential biodiversity impact	10	10	10	3	10	6
• Identified as high potential of impact	7	7	7	3	7	3
• Assessed for biodiversity value	7	7	7	3	7	0
• Required biodiversity management plan[c]	7	7	7	3	7	3
• Implemented biodiversity management plan[c]	7	7	7	NA[d]	7	NA[d]
Area (hectares)						
• Assessed for potential biodiversity impact	-	45,997	67,279	434	51,686	4,272
• Assessed for biodiversity value	-	45,997	67,279	434	51,686	0
• With biodiversity management plan	-	45,997	67,279	NA[d]	51,686	NA[d]
• Biodiversity offset area	-	4,947	8,751	NA[d]	7,105	NA[d]
Proportion of business units						
• Assessed for potential biodiversity impact	-	-	100%	50%	100%	100%
• Assessed for biodiversity value	-	-	100%	100%	100%	0%
• With biodiversity management plan[c]	-	-	100%	NA[d]	100%	NA[d]

[a] Business unit(s) currently operates
[b] Under project development and construction, including mine(s) with care & maintenance status
[c] For business unit(s) identified as high potential of biodiversity impact only
[d] No implementation required for business unit(s) in project development stage

BIODIVERSITY

Power Business	2017	2018	2019		2020	
			Operating[a]	Project[b]	Operating[a]	Project[b]
Business unit(s) in relation to protected area			0	0	0	1
• In the area	-	-	0	0	0	0
• Adjacent to	-	-	0	0	0	0
• Containing portions	-	-	0	0	0	1
Business unit(s) in relation to high biodiversity wilderness area	-	-	0	1	0	0
• In the area	-	-	0	0	0	0
• Adjacent to	-	-	0	0	0	0
• Containing portions	-	-	0	1	0	1
Number of business units						
• Assessed for potential biodiversity impact	-	-	15	7	21	3
• Identified as high potential of impact	-	-	0	1	0	1
• Assessed for biodiversity value	-	-	0	0	0	0
• Required biodiversity management plan[c]	-	-	0	0	0	1
• Implemented biodiversity management plan[c]	-	-	0	NA[d]	0	NA[d]
Area (hectares)						
• Assessed for potential biodiversity impact	-	-	-	-	0	620
• Assessed for biodiversity value	-	-	-	-	0	0
• With biodiversity management plan	-	-	-	NA[d]	0	NA[d]
• Biodiversity offset area	-	-	0	NA[d]	0	NA[d]
Proportion of business units						
• Assessed for potential biodiversity impact	-	-	100%	100%	100%	100%
• Assessed for biodiversity value	-	-	NA[e]	0%	NA[e]	0%
• With biodiversity management plan[c]	-	-	NA[e]	NA[d]	NA[e]	NA[d]

[a] Business unit(s) currently operates
[b] Under project development and construction, including mine(s) with care & maintenance status
[c] For business unit(s) identified as high potential of biodiversity impact only
[d] No implementation required for business unit(s) in project development stage
[e] No business units identified as high potential of biodiversity impact

MINE CLOSURE

Mining Business	2017	2018	2019	2020
Number of mines[a]				
• Mining stage	-	12	12	12
• Mine closure stage	-	10	10	8
Number of mines with mine closure plan	-	22	22	20
• Indonesia	-	6	6	6
• Australia	-	16	16	14
Proportion of mines with mine closure plan	-	100%	100%	100%
Progress of revegetation against plan[b]	-	99%	94%	91%
Progress of mine closure activity against plan[c]	-	-	100%	100%
Disturbed area (hectare)				
• Total land own at year end	96,034	93,074	93,036	92,775
• Total disturbed area at year end	24,048	24,728	25,580	20,748
• Newly disturbed area during the year	910	836	859	1,154
Rehabilitated area (hectare)				
• Total rehabilitated area at year end	11,233	12,157	12,997	13,189
• Newly rehabilitated area during the year	596	636	840	733
• Total area disturbed and not yet rehabilitated	12,815	12,571	12,583	7,559
Progress of land management				
• Total disturbed area to total land own	25%	27%	27%	22%
• Total rehabilitated area to total disturbed area	47%	49%	51%	64%

(a) Includes mine(s) in care & maintenance stage
(b) For open-pit mine only
(c) For underground mine only

MINE SUBSIDENCE[a]

Mining Business	2017	2018	2019	2020
Number of mines				
• Required subsidence management plan	-	5	5	5
• Implemented subsidence management plan	-	5	5	5
Number of reports related to mine subsidence	0	0	0	0
Proportion of mines with subsidence management plan	100%	100%	100%	100%
Progress of subsidence management activities against plan	-	-	100%	100%

(a) For underground mine only

MINERAL WASTE

Mining Business	2017	2018	2019	2020
Overburden[a] (million BCM)	236	265	253	182
Percentage of in-pit backfilled[a]	40%	88%	93%	91%
Tailings (dry tonnes)	333,596	295,066	410,697	388,658
Progress of in-pit backfilling against plan[a]	-	-	93%	94%
Proportion of mines with acid mine drainage management plan[b]	100%	100%	100%	100%
Number of tailings facilities				
• Active	-	-	3	3
• Closed	-	-	2	2
Number of significant tailings spills	0	0	0	0

[a] For open-pit mine only
[b] For business unit(s) identified as potential acid mine drainage issue

ENVIRONMENTAL COMPLIANCE

Mining Business	2017	2018	2019	2020
Number of significant environmental incidents[a]				
• Effluent discharge limits	0	0	0	0
• Air emissions standards	0	0	0	0
• Others	0	0	0	0
Fines from environmental non-compliance[b]				
• Number of significant fines	3	0	0	0
• Total amount of significant fines (USD)	38,142	0	0	0
Non-monetary sanctions	0	0	0	0
Cases brought through dispute mechanisms	0	0	0	0
Spills[a]				
• Number of significant spills	1	0	0	0
• Total amount of significant spills (liter)	100	0	0	0
Power Business				
Number of significant environmental incidents[a]				
• Effluent discharge limits	0	0	0	0
• Air emissions standards	0	0	0	0
• Others	0	0	0	0
Fines from environmental non-compliance[b]				
• Number of significant fines	1	0	0	0
• Total amount of significant fines (USD)	14,757	0	0	0
Non-monetary sanctions	0	0	0	0
Cases brought through dispute mechanisms	0	0	0	0
Spills[a]				
• Number of significant spills	0	0	0	0
• Total amount of significant spills (liter)	0	0	0	0

[a] Refers to internal definition with criteria such as any damage to widespread area or potential fines that is greater than USD 10,000
[b] Fines or potential fines that is greater than USD 10,000

EMPLOYEE

	2017	2018	2019	2020
Employee – total	5,780	5,963	5,359	5,482
Employee – by country				
• Thailand	6.0%	6.3%	7.9%	9.0%
• Indonesia	48.3%	47.7%	41.0%	43.0%
• China	16.1%	15.8%	17.2%	17.0%
• Australia	27.0%	27.9%	31.3%	28.6%
• Mongolia	2.1%	1.6%	1.8%	1.6%
• Singapore	0.3%	0.3%	0.3%	0.2%
• Japan	0.1%	0.3%	0.4%	0.4%
• Lao PDR	0.1%	0.1%	0%	0%
• Vietnam	-	0.03%	0.1%	0.2%
Employee – by gender				
• Male	86.2%	86.0%	85.8%	85.0%
• Female	13.8%	14.0%	14.2%	15.0%
Employee – by nationality				
• Thai	7.5%	7.9%	9.3%	9.6%
• Indonesian	47.3%	46.6%	40.1%	42.8%
• Chinese	16.0%	15.6%	17.0%	16.9%
• Australian	27.0%	28.0%	31.3%	28.6%
• Mongolian	1.9%	1.5%	1.6%	1.5%
• Singaporean	0.1%	0.1%	0.1%	0.1%
• Japanese	0.1%	0.1%	0.2%	0.2%
• Vietnamese	-	-	0.1%	0.2%
• Others	0.1%	0.2%	0.2%	0.2%
Employee – by age				
• Under 30	17.0%	15.1%	10.5%	11.6%
• 30-39	39.3%	38.5%	37.3%	37.0%
• 40-49	30.4%	30.9%	34.1%	33.3%
• Over 50	15.2%	15.5%	18.1%	18.2%
Employee – by type				
• Permanent	90.7%	92.0%	98.9%	93.2%
• Temporary	9.3%	8.0%	1.1%	6.8%
Employee – by level				
• Senior management	1.0%	1.2%	0.9%	0.9%
• Middle management	7.3%	6.7%	8.1%	8.5%
• Junior management	26.0%	27.1%	11.5%	11.7%
• Staff and supervisor	65.7%	65.0%	79.5%	78.9%
Management[a] – by gender				
• Male	75.0%	77.3%	89.9%	72.8%
• Female	25.0%	22.7%	10.1%	27.2%
Local employment[b] – by country				
• Thailand	-	-	8.0%	8.9%
• Indonesia	-	-	40.8%	42.7%
• China	-	-	17.3%	16.9%
• Australia	-	-	31.8%	28.5%
• Mongolia	-	-	1.7%	1.5%
• Singapore	-	-	0.1%	0.1%
• Japan	-	-	0.2%	0.2%
• Vietnam	-	-	0.1%	0.2%

[a] Includes middle and senior managements
[b] In the same region (e.g. state for Australia, province for Indonesia)

NEW EMPLOYEE

	2017	2018	2019	2020
New employee – total	400	459	582	168
New employee – by country				
• Thailand	25	30	87	53
• Indonesia	138	187	278	9
• China	80	61	56	62
• Australia	146	169	138	33
• Mongolia	8	3	7	2
• Singapore	1	4	3	0
• Japan	2	4	8	4
• Lao PDR	0	0	0	0
• Vietnam	-	1	5	5
New employee – by gender				
• Male	342	381	472	115
• Female	58	78	110	53

COLLECTIVE BARGAINING AGREEMENTS

	2017	2018	2019	2020
Percentage of employees covered by collective bargaining agreements[a]	58%	64%	62%	58%
• Thailand	0%	0%	0%	0%
• Indonesia	65%	75%	76%	76%
• China	0%	0%	0%	0%
• Australia	100%	100%	75%	76%
• Mongolia	0%	0%	0%	0%
• Singapore	0%	0%	0%	0%
• Japan	0%	0%	0%	0%
• Lao PDR	0%	0%	0%	0%
• Vietnam	-	0%	0%	0%

[a] There are labor unions in Indonesia and Australia only.

CORPORATE CULTURE

	2017	2018	2019	2020
Level of alignment between employee behavior and the corporate culture "Banpu Heart"	87%	69%	77%	75%
• Thailand	77%	69%[a]	69%	72%
• Indonesia	82%	-	71%	71%
• China	99%	-	95%	94%
• Australia	-	-	70%	66%
• Mongolia	91%	-	83%	78%
• Singapore	-	-	74%	85%
• Japan	-	-	79%	56%

[a] The Company has transformed corporate culture from "Banpu Spirit" to "Banpu Heart" in mid-2018. The first survey on the level of alignment between employee behavior and the corporate culture "Banpu Heart" was conducted in Thailand in late 2018.

EMPLOYEE MANAGEMENT

	2017	2018	2019	2020
Employee engagement level	85%	82%	78%	76%
• Thailand	64%	67%	68%	69%
• Indonesia	84%	80%	73%	73%
• China	95%	94%	94%	92%
• Japan	-	-	50%	38%
• Mongolia	-	-	76%	52%
• Singapore	-	-	56%	60%
Total turnover rate	5.3%	6.0%	5.3%	13.9%
Voluntary turnover rate	2.8%	3.9%	3.0%	5.8%
Turnover rate – by country				
• Thailand	5.1%	6.6%	6.4%	8.1%
• Indonesia	4.7%	6.9%	17.6%	21.1%
• China	2.8%	4.7%	6.7%	5.3%
• Australia	4.2%	4.7%	6.7%	10.5%
• Mongolia	18.9%	12.4%	9.5%	5.6%
• Singapore	0%	6.7%	11.8%	16.7%
• Japan	0%	0%	0%	9.1%
• Vietnam	-	0%	0%	0%
Employees that take parental leave				
• Thailand	6	2	3	4
• Indonesia	30	-[b]	167	119
• China	42	36	9	4
• Australia	19	20	23	19
• Mongolia	2	3	6	0
• Singapore	0	1	0	0
• Japan	0	0	0	0
• Vietnam	-	0	0	0
Return to work after parental leave				
• Thailand	100%	100%	100%	100%
• Indonesia	100%	-[b]	100%	100%
• China	93%	89%	22%	100%
• Australia	95%	100%	91%	100%
• Mongolia	100%	0%	100%	NA[a]
• Singapore	NA[a]	NA[a]	NA[a]	NA[a]
• Japan	NA[a]	NA[a]	NA[a]	NA[a]
• Vietnam	-	NA[a]	NA[a]	NA[a]
Major layoff – by country				
• Thailand	-	-	0	0
• Indonesia	-	-	0	0
• China	-	-	0	0
• Australia	-	-	0	0
• Others	-	-	0	0

[a] No parental leaves
[b] Data collection system under standardization

HUMAN CAPITAL DEVELOPMENT

	2017	2018	2019	2020
Average cost of training (USD/employee)				
• Thailand[a]	1,128	1,488	1,554	1,115
• Indonesia	161	172	239	47
• China	211	244	276	271
• Australia	-	-	1,668	1,865
• Mongolia	-	-	120	5
Average cost of training (USD/employee)				
• Senior management	929	1,253	2,226	2,402
• Middle management	907	1,141	948	771
• Junior management	396	352	724	643
• Staff and supervisor	156	133	840	951
Average hours of training (hour/employee)	14.2	13.3	22.6	19.0
• Thailand[a]	37.0	26.2	19.2	21.0
• Indonesia	17.5	15.1	18.3	7.5
• China	20.6	26.9	29.0	35.0
• Australia	-	-	24.5	27.0
• Mongolia	-	-	42.0	4.6
Average hours of training (hour/employee)	14.2	13.3	22.6	19.0
• Senior management	14.3	15.6	25.2	27.2
• Middle management	25.1	22.5	22.2	18.0
• Junior management	24.1	20.7	27.2	24.1
• Staff and supervisor	18.8	17.6	22.0	24.9
Proportion of high critical positions with successor identified	100%	100%	100%	63%
Proportion of employee with individual development plan	97%[c]	74%[c]	62%	68%
Employee attending leadership development programs (cumulative)	442	554	693	763
Employee attending leadership development programs (annual)				
• Strategic leader	23	0	20	0
• Business leader	17	19	27	0
• First line leader	24	26	25	26
• Future leader[c]	0	29	27	27
• Engaging leader[c]	39	38	40	17
Success of leadership development programs[b]				
• Strategic leader	81%	NA[d]	78%	78%
• Business leader	80%	91%	87%	87%
• First Line leader	81%	91%	88%	82%
• Future leader[c]	NA[d]	90%	92%	94%
• Engaging leader[c]	94%	93%	90%	90%

[a] Include Singapore, Japan and Lao PDR
[b] % Applied learning according to the program evaluation
[c] Data covers only employee in Thailand
[d] No program conducted

OCCUPATIONAL HEALTH & SAFETY[d][g]

	2017	2018	2019[a]	2020
Workers covered by OHS management system				
• Number of workers	-	-	-	18,439
• Percentage of total workers	-	-	-	99%
Workers covered by OHS management system that has been internally audited				
• Number of workers	-	-	-	17,335
• Percentage of total workers	-	-	-	94%
Workers covered by OHS management system that has been audited or certified by third party				
• Number of workers	-	-	-	13,125
• Percentage of total workers	-	-	-	71%
Number of occupational fatalities	1[c]	1	0	0
• Employee	0	0	0	0
• Contractor	1[c]	1	0	0
• Third-party[b]	1	0	0	0
Fatality rate (person/million man-hour)	-	0.02	0.00	0.00
• Employee	-	0.00	0.00	0.00
• Contractor	-	0.02	0.00	0.00
Number of recordable injury	-	204	215	201
• Employee	-	178	171	164
• Contractor	-	26	44	37
Total recordable injury frequency rate (TRIFR) (person/million man-hour)	0.19	3.37	3.31	3.53
• Employee	0.30	18.37	16.63	16.91
• Contractor	0.18	0.51	0.80	0.78
Lost time injury frequency rate (LTIFR) (person/million man-hour)	0.10	0.56	0.66	0.68
• Employee	0.15	2.48	2.82	2.99
• Contractor	0.10	0.20	0.26	0.21
Injury severity rate (ISR)[e] (day/million man-hour)	107.66	142.77	29.27	28.55
• Employee	1.33	267.33	145.16	78.17
• Contractor	121.67	119.05	7.49	18.37
Number of high-consequence work-related injuries	-	-	3	1
• Employee	-	-	1	0
• Contractor	-	-	2	1
High-consequence work-related injuries frequency rate (person/million man-hour)	-	-	0.05	0.02
• Employee	-	-	0.10	0.00
• Contractor	-	-	0.04	0.02
Number of hour worked	-	60,565,712	64,982,265	56,995,326
• Employee	-	9,688,400	10,277,992	9.696,278
• Contractor	-	50,877,312	54,704,273	47,299,048
Tier-1 process safety event[f]	7	5	3	2
Tier-1 process safety event rate[f] (case/million man-hour)	-	0.08	0.05	0.04
Number of fatalities as a result of work-related ill health	-	-	-	0
• Employee	-	-	-	0
• Contractor	-	-	-	0
Number of total recordable work-related ill health	-	-	-	0
• Employee	-	-	-	0
• Contractor	-	-	-	0

[a] Adjusted data from the previous report
[b] Third-party fatality is not included in the calculation of TRIFR, LTIFR, and ISR
[c] This fatality is classified as non-fatal case according to Indonesian Regulation
[d] Excludes barging contractors in Indonesia and coal logistics in Thailand
[e] Refers to American National Standards Institute (ANSI) standard
[f] Refers to internal definition with criteria such as fatality and catastrophic damage to ecosystems
[g] Excludes contractors in Japan

COMMUNITY ENGAGEMENT

	2017	2018	2019	2020
Community baseline data – Australia				
• Number of villages	2	14	11	23
• Number of people	260	41,721	25,787	43,794
• Number of projects under community consultation	1	7	5	10
Community baseline data – China				
• Number of villages	-	-	0	11
• Number of people	-	-	9,194	18,190
• Number of projects under community consultation	-	-	6	15
Community baseline data – Indonesia				
• Number of villages	10	46	46	46
• Number of people	29,472	93,624	93,624	94,443
• Number of projects under community consultation	24	109	275	165
Number of significant community complaints	0	1	2	200
Proportion of significant complaints from communities resolved through a dispute mechanism	NA[a]	0%[b]	50%	100%

[a] No significant complaints
[b] Complaint resolved in 2019

COMMUNITY DEVELOPMENT

	2017	2018	2019	2020
Coverage of annual stakeholder satisfaction survey on community development projects[a]	-	-	20%	100%
Average stakeholder satisfaction level on community development projects[a]	67%	68%	71%	78%

[a] Data covers mining business in Indonesia only

RESETTLEMENT

	2017	2018	2019	2020
Number of resettlements	-	0	0	0
Number of significant resettlement complaints	-	0	0	0
Proportion of significant resettlement complaints resolved through a dispute mechanism	-	NA[a]	NA[a]	NA[a]

[a] No significant complaints

INDIGENOUS PEOPLES

	2017	2018	2019	2020
Number of indigenous peoples and ethnic minorities' rights violations	0	0	0	0
Proportion of indigenous peoples and ethnic minorities' rights violations resolved through a dispute mechanism	NA[a]	NA[a]	NA[a]	NA[a]

[a] No violations

HUMAN RIGHTS

	2017	2018	2019	2020
Coverage of business units assessed for human rights risks	-	100%	-[c]	94%
Proportion of business units with risk management plans[a]	-	100%	-[c]	NA[d]
Number of significant human rights issues	-	0	0	0
Proportion of significant human rights issues resolved through a dispute mechanism	-	NA[b]	NA[b]	NA[b]

[a] For business unit(s) identified as high human rights risks
[b] No significant issues
[c] Assessment process under standardization
[d] No human rights risks

GRI CONTENT INDEX

Disclosure	Description	Page	Detail/Omission	External Assurance
GRI 101: Foundation 2016				
GRI 102: General Disclosures 2016				
Organizational Profile				
102-1	Name of the organization	Front cover		-
102-2	Activities, brands, products, and services	6-7, 10-13		-
102-3	Location of headquarters	5		-
102-4	Location of operations	8-13		-
102-5	Ownership and legal form	106-107		-
102-6	Markets served	8-13		-
102-7	Scale of the organization	106-107, 109, 113, 125		-
102-8	Information on employees and other workers	125		-
102-9	Supply chain	45-47		-
102-10	Significant changes to the organization and its supply chain	5, 106-107		-
102-11	Precautionary Principle or approach	54-55		-
102-12	External initiatives	25		-
102-13	Membership of associations	-		-
EU1[E]	Installed capacity, broken down by primary energy source and by regulatory regime	106-107		-
EU2[E]	Net energy output broken down by primary energy source and by regulatory regime	114		-
Strategy				
102-14	Statement from senior decision-maker	2-3		-
102-15	Key impacts, risks, and opportunities	6-7, 54-55		-
Ethics and Integrity				
102-16	Values, principles, standards, and norms of behavior	40-41		-
102-17	Mechanisms for advice and concerns about ethics	41		-
Governance				
102-18	Governance structure	14-15		-
102-19	Delegating authority	36-37		-
102-20	Executive-level responsibility for economic, environmental, and social topics	36-37		-
102-21	Consulting stakeholders on economic, environmental, and social topics	16-18		-
102-22	Composition of the highest governance body and its committees	14-15		-
102-23	Chair of the highest governance body	14		-
102-24	Nominating and selecting the highest governance body	15		-
102-25	Conflicts of interest	14, 41		-
102-26	Role of highest governance body in setting purpose, values, and strategy	14, 37		-
102-27	Collective knowledge of highest governance body	15, 39		-
102-28	Evaluating the highest governance body's performance	15, 36		-
102-29	Identifying and managing economic, environmental, and social impacts	16-18, 36-37		-
102-30	Effectiveness of risk management processes	37, 54-55		-
102-31	Review of economic, environmental, and social topics	36-37		-
102-32	Highest governance body's role in sustainability reporting	36-37		-

Disclosure	Description	Page	Detail/Omission	External Assurance
Governance				
102-33	Communicating critical concerns	55		-
102-34	Nature and total number of critical concerns	20-21, 54		-
102-35	Remuneration policies	14-15, 38		-
102-36	Process for determining remuneration	14-15, 38		-
102-37	Stakeholders' involvement in remuneration	-		-
102-38	Annual total compensation ratio	-		-
102-39	Percentage increase in annual total compensation ratio	-		-
Stakeholder Engagement				
102-40	List of stakeholder groups	17-18		-
102-41	Collective bargaining agreements	97		-
102-42	Identifying and selecting stakeholders	16		-
102-43	Approach to stakeholder engagement	17-18		-
102-44	Key topics and concerns raised	17-18		-
Reporting Practice				
102-45	Entities included in the consolidated financial statements	106-107		-
102-46	Defining report content and topic Boundaries	19-21		-
102-47	List of material topics	20		-
102-48	Restatements of information	5		-
102-49	Changes in reporting	5		-
102-50	Reporting period	5		-
102-51	Date of most recent report	5		-
102-52	Reporting cycle	5		-
102-53	Contact point for questions regarding the report	5		-
102-54	Claims of reporting in accordance with the GRI Standards	4-5		-
102-55	GRI content index	131-137		-
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GRI 201: Economic Performance 2016				
103-1	Explanation of the material topic and its Boundary	50, 108		-
103-2	The management approach and its components	51		-
103-3	Evaluation of the management approach	50-51		-
201-1	Direct economic value generated and distributed	50, 111		-
201-2	Financial implications and other risks and opportunities due to climate change	-		-
201-3	Defined benefit plan obligations and other retirement plans	86		-
GRI 203: Indirect Economic Impacts 2016				
103-1	Explanation of the material topic and its Boundary	50, 108		-
103-2	The management approach and its components	51		-
103-3	Evaluation of the management approach	50-51		-
203-1	Infrastructure investments and services supported	50, 102		-
203-2	Significant indirect economic impacts	101-102		-
GRI 204: Procurement Practices 2016				
103-1	Explanation of the material topic and its Boundary	45, 108		-
103-2	The management approach and its components	46		-
103-3	Evaluation of the management approach	45-47		-
204-1	Proportion of spending on local suppliers	45, 112		-

Disclosure	Description	Page	Detail/Omission	External Assurance
GRI 205: Anti-corruption 2016				
103-1	Explanation of the material topic and its Boundary	40, 108		-
103-2	The management approach and its components	41		-
103-3	Evaluation of the management approach	40		-
205-1	Operations assessed for risks related to corruption	41		-
205-2	Communication and training about anti-corruption policies and procedures	40-41		-
205-3	Confirmed incidents of corruption and actions taken	109		-
GRI-G4 Sector Disclosure: System Efficiency				
103-1	Explanation of the material topic and its Boundary	52, 108		-
103-2	The management approach and its components	52		-
103-3	Evaluation of the management approach	52,112		-
EU11[E]	Average generation efficiency of thermal plants by energy source and by regulatory regime	112		-
Environment				
GRI 302: Energy 2016				
103-1	Explanation of the material topic and its Boundary	64, 108		Yes
103-2	The management approach and its components	65-66		Yes
103-3	Evaluation of the management approach	64-66		Yes
302-1	Energy consumption within the organization	114		Yes
302-3	Energy intensity	114		Yes
302-4	Reduction of energy consumption	-		-
GRI 303: Water and Effluents 2018				
103-1	Explanation of the material topic and its Boundary	70, 108		Yes
103-2	The management approach and its components	71		Yes
103-3	Evaluation of the management approach	70		Yes
303-1	Interactions with water as a shared resource	71		-
303-2	Management of water discharge-related impacts	-		-
303-3	Water withdrawal	116-118		Yes
303-4	Water discharge	116-118		Yes
303-5	Water consumption	70, 116-118		Yes
GRI 304: Biodiversity 2016				
103-1	Explanation of the material topic and its Boundary	74, 108		-
103-2	The management approach and its components	75		-
103-3	Evaluation of the management approach	74		-
304-1	Operational sites owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas	121-122		-
304-2	Significant impacts of activities, products, and services on biodiversity	74-75		-
304-3	Habitats protected or restored	74-75, 123		-
304-4	IUCN Red List species and national conservation list species with habitats in areas affected by operations	75		-
MM1[M]	Amount of land (owned or leased, and managed for production activities or extractive use) disturbed or rehabilitated	123		-
MM2[M]	The number and percentage of total sites identified as requiring biodiversity management plans according to stated criteria, and the number (percentage) of those sites with plans in place	74, 121-122		-

Disclosure	Description	Page	Detail/Omission	External Assurance
GRI 305: Emissions 2016				
103-1	Explanation of the material topic and its Boundary	60, 67, 108		Yes
103-2	The management approach and its components	62-63, 69		Yes
103-3	Evaluation of the management approach	60-61, 67-68		Yes
305-1	Direct (Scope 1) GHG emissions	113		Yes
305-2	Energy indirect (Scope 2) GHG emissions	113		Yes
305-3	Other indirect (Scope 3) GHG emissions	113		Yes
305-4	GHG emissions intensity	60-61, 113		Yes
305-5	Reduction of GHG emissions	63		-
305-6	Emissions of ozone-depleting substances (ODS)	115		Yes
305-7	Nitrogen oxides (NO_x), sulfur oxides (SO_x), and other significant air emissions	115		Yes
GRI 306: Effluents and Waste 2016				
103-1	Explanation of the material topic and its Boundary	72, 108		Yes
103-2	The management approach and its components	73		Yes
103-3	Evaluation of the management approach	72		Yes
306-2	Waste by type and disposal method	119-120		Yes
306-3	Significant spills	124		-
306-4	Transport of hazardous waste	119-120		Yes
MM3[M]	Total amounts of overburden, rock, tailings, and sludges and their associated risks	124		-
GRI 307: Environmental Compliance 2016				
103-1	Explanation of the material topic and its Boundary	80, 108		-
103-2	The management approach and its components	81		-
103-3	Evaluation of the management approach	80		-
307-1	Non-compliance with environmental laws and regulations	124		-
GRI 308: Supplier Environmental Assessment 2016				
103-1	Explanation of the material topic and its Boundary	45, 108		-
103-2	The management approach and its components	46		-
103-3	Evaluation of the management approach	45-47		-
308-1	New suppliers that were screened using environmental criteria	45, 112		-
308-2	Negative environmental impacts in the supply chain and actions taken	45		-

Disclosure	Description	Page	Detail/Omission	External Assurance
Social				
GRI 401: Employment 2016				
103-1	Explanation of the material topic and its Boundary	84, 108		-
103-2	The management approach and its components	85		-
103-3	Evaluation of the management approach	84		-
401-1	New employee hires and employee turnover	126-127		-
401-3	Parental leave	127		-
GRI 403: Occupational Health and Safety 2018				
103-1	Explanation of the material topic and its Boundary	92, 108		Yes
103-2	The management approach and its components	94-95		Yes
103-3	Evaluation of the management approach	92-93		Yes
403-1	Occupational health and safety management system	94		Yes
403-2	Hazard identification, risk assessment, and incident investigation	94		Yes
403-3	Occupational health services	94		Yes
403-4	Worker participation, consultation, and communication on occupational health and safety	95		Yes
403-5	Worker training on occupational health and safety	95		Yes
403-6	Promotion of worker health	94		Yes
403-7	Prevention and mitigation of occupational health and safety impacts directly linked by business relationships	94		Yes
403-8	Workers covered by an occupational health and safety management system	95, 129		Yes
403-9	Work-related injuries	92-93, 129		Yes
403-10	Work-related ill health	129		-
GRI 404: Training and Education 2016				
103-1	Explanation of the material topic and its Boundary	87, 108		-
103-2	The management approach and its components	89		-
103-3	Evaluation of the management approach	87-88		-
404-1	Average hours of training per year per employee	128		-
404-2	Programs for upgrading employee skills and transition assistance programs	87-88		-
404-3	Percentage of employees receiving regular performance and career development reviews	-		-
GRI 405: Diversity and Equal Opportunity 2016				
103-1	Explanation of the material topic and its Boundary	-		-
103-2	The management approach and its components	15, 97		-
103-3	Evaluation of the management approach	14, 125		-
405-1	Diversity of governance bodies and employees	14, 125		-
GRI 411: Rights of Indigenous Peoples 2016				
103-1	Explanation of the material topic and its Boundary	105, 108		-
103-2	The management approach and its components	105		-
103-3	Evaluation of the management approach	105		-
411-1	Incidents of violations involving rights of indigenous peoples	105		-
MM5[M]	Total number of operations taking place in or adjacent to Indigenous Peoples' territories, and number and percentage of operations or sites where there are formal agreements with Indigenous Peoples' communities	105, 130		-

Disclosure	Description	Page	Detail/Omission	External Assurance
GRI 412: Human Rights Assessment 2016				
103-1	Explanation of the material topic and its Boundary	96, 108		-
103-2	The management approach and its components	97		-
103-3	Evaluation of the management approach	96		-
412-1	Operations that have been subject to human rights reviews or impact assessments	96, 130		-
412-2	Employee training on human rights policies or procedures	-		-
GRI 413: Local Communities 2016				
103-1	Explanation of the material topic and its Boundary	98, 100, 108		-
103-2	The management approach and its components	99, 103		-
103-3	Evaluation of the management approach	98, 100-102		-
413-1	Operations with local community engagement, impact assessments, and development programs	99		-
413-2	Operations with significant actual and potential negative impacts on local communities	99		-
MM6[M]	Number and description of significant disputes relating to land use, customary rights of local communities and Indigenous People	98, 130		-
MM7[M]	The extent to which grievance mechanisms were used to resolve disputes relating to land use, customary rights of local communities and Indigenous Peoples, and the outcomes	99, 104-105		-
EU22[E]	Number of people physically or economically displaced and compensation, broken down by type of project	104, 130		-
GRI 414: Supplier Social Assessment 2016				
103-1	Explanation of the material topic and its Boundary	45, 108		-
103-2	The management approach and its components	46		-
103-3	Evaluation of the management approach	45-47		-
414-1	New suppliers that were screened using social criteria	112		-
414-2	Negative social impacts in the supply chain and actions taken	-		-
GRI 416: Customer Health and Safety 2016				
103-1	Explanation of the material topic and its Boundary	48, 108		-
103-2	The management approach and its components	49		-
103-3	Evaluation of the management approach	48		-
416-1	Assessment of the health and safety impacts of product and service categories	-		-
416-2	Incidents of non-compliance concerning the health and safety impacts of products and services	48, 112		-
GRI 418: Customer Privacy 2016				
103-1	Explanation of the material topic and its Boundary	57, 108		-
103-2	The management approach and its components	57		-
103-3	Evaluation of the management approach	57		-
418-1	Substantiated complaints concerning breaches of customer privacy and losses of customer data	48, 112		-
GRI 419: Socioeconomic Compliance 2016				
103-1	Explanation of the material topic and its Boundary	53, 108		-
103-2	The management approach and its components	53		-
103-3	Evaluation of the management approach	53		-
419-1	Non-compliance with laws and regulations in the social and economic area	53, 112		-

Disclosure	Description	Page	Detail/Omission	External Assurance
GRI-G4 Sector Disclosure: Resettlement				
103-1	Explanation of the material topic and its Boundary	104, 108		-
103-2	The management approach and its components	104		-
103-3	Evaluation of the management approach	104		-
MM9[M]	Sites where resettlements took place, the number of households resettled in each, and how their livelihoods were affected in the process	130		-
GRI-G4 Sector Disclosure: Closure Planning				
103-1	Explanation of the material topic and its Boundary	78, 108		-
103-2	The management approach and its components	78		-
103-3	Evaluation of the management approach	78		-
MM10[M]	Number and percentage of operations with closure plans	78, 123		-
GRI-G4 Sector Disclosure: Access				
103-1	Explanation of the material topic and its Boundary	52, 108		-
103-2	The management approach and its components	52		-
103-3	Evaluation of the management approach	52		-
EU30[E]	Average plant availability factor by energy source and by regulatory regime	52, 112		-

[M] GRI-G4 Mining & Metals Sector Disclosures 2010
[E] GRI-G4 Electric Utilities Sector Disclosures 2010

SDGs CONTRIBUTION MATRIX

Material topic	1 NO POVERTY	2 ZERO HUNGER	3 GOOD HEALTH AND WELL-BEING	4 QUALITY EDUCATION	5 GENDER EQUALITY	6 CLEAN WATER AND SANITATION	7 AFFORDABLE AND CLEAN ENERGY	8 DECENT WORK AND ECONOMIC GROWTH	9 INDUSTRY, INNOVATION AND INFRASTRUCTURE	10 REDUCED INEQUALITIES	11 SUSTAINABLE CITIES AND COMMUNITIES	12 RESPONSIBLE CONSUMPTION AND PRODUCTION	13 CLIMATE ACTION	14 LIFE BELOW WATER	15 LIFE ON LAND	16 PEACE, JUSTICE AND STRONG INSTITUTIONS	17 PARTNERSHIPS FOR THE GOALS
Sustainability Governance																○	
Business Ethics																○	
Digital Transformation								○									
Supplier Management								●								○	
Customer & Product Stewardship																○	
Economic Distribution								○									
Efficiency & Reliability of Power Plants								○									
Socioeconomic Compliance																○	
Risk Management																○	
Business Continuity Management								○									
Data Privacy & Cybersecurity																○	
GHG Emissions							●						●				
Energy												●	○				
Air Emissions			○									●					
Water						●						○					
Waste						●						○					
Biodiversity															●		
Mineral Waste												○					
Mine Closure															●		
Mine Subsidence															○		
Environmental Compliance																○	
Employee Management								○									
Human Capital Development								○									
Corporate Culture								○		○							
Occupational Health & Safety								●									
Human Rights								●									
Community Engagement																	●
Community Development		○															●
Resettlement											○					○	
Indigenous Peoples										○							

● Direct Contribution
○ Indirect Contribution

UN GLOBAL COMPACT COP INDEX

Criteria	Description	Page
Implementing the Ten Principles into Strategies & Operations		
1	The COP describes mainstreaming into corporate functions and business units	30-33, 36-37
2	The COP describes value chain implementation	45-47
Robust Human Rights Management Policies & Procedures		
3	The COP describes robust commitments, strategies or policies in the area of human rights	96-97
4	The COP describes effective management systems to integrate the human rights principles	97
5	The COP describes effective monitoring and evaluation mechanisms of human rights integration	96
Robust Labour Management Policies & Procedures		
6	The COP describes robust commitments, strategies or policies in the area of labour	32, 84-86, 96-97
7	The COP describes effective management systems to integrate the labour principles	40-41, 94-95
8	The COP describes effective monitoring and evaluation mechanisms of labour principles integration	45-47, 86, 87-89, 92-95
Robust Environmental Management Policies & Procedures		
9	The COP describes robust commitments, strategies or policies in the area of environmental stewardship	25, 30-31, 33, 62, 75
10	The COP describes effective management systems to integrate the environmental principles	62, 65-66, 69, 71, 73, 75, 77-79, 81
11	The COP describes effective monitoring and evaluation mechanisms for environmental stewardship	36-37, 60-61, 64-65, 67-68, 70, 72-74, 76-80
Robust Anti-Corruption Management Policies & Procedures		
12	The COP describes robust commitments, strategies or policies in the area of anti-corruption	33, 40-41
13	The COP describes effective management systems to integrate the anti-corruption principle	40-41
14	The COP describes effective monitoring and evaluation mechanisms for the integration of anti-corruption	41
Taking Action in Support of Broader UN Goals and Issues		
15	The COP describes core business contributions to UN goals and issues	30-33, 101-102, 138
16	The COP describes strategic social investments and philanthropy	26-29, 101-102
17	The COP describes advocacy and public policy engagement	30-31
18	The COP describes partnerships and collective action	26-29, 101-102
Corporate Sustainability Governance and Leadership		
19	The COP describes CEO commitment and leadership	2-3, 37
20	The COP describes Board adoption and oversight	14, 37
21	The COP describes stakeholder engagement	16-18, 98-99

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Independent limited assurance report

To the Directors of Banpu Public Company Limited ("Banpu")

Conclusion

Based on the procedures performed, as described below, nothing has come to our attention that causes us to believe that the selected subject matters ("Subject Matters") identified below and included in the Sustainability Report 2020 (the "Report") for the year ended 31 December, together with the disclosures regarding their adherence to the three AccountAbility Principles of Inclusivity, Materiality, Responsiveness and Impact under AA1000AP (2018), and reliability of Subject Matters are not, in all material respects, prepared in compliance with the reporting criteria (the "Criteria").

Our Responsibilities

We have been engaged by Banpu and are responsible for providing a limited assurance conclusion in respect of the Subject Matters for the year ended 31 December 2020 to be included in the Report as identified below.

Our assurance engagement is conducted in accordance with the International Standard on Assurance Engagements ISAE 3000 *Assurance Engagements other than Audits or Reviews of Historical Financial Information* and ISAE 3410 *Assurance on Greenhouse Gas Statements*. We have also conducted our engagement in accordance with the Accountability Assurance Standard of Sustainability AA1000AS (2008) at moderate level that corresponds to a limited assurance as per ISAE 3000 with a Type 2 engagement, which covers not only the nature and extent of the organisation's adherence to the AA1000AP (2018), but also evaluates the reliability of Subject Matters as indicated below. These standards require the assurance team to possess the specific knowledge, skills and professional competencies needed to provide assurance on sustainability information, and that we plan and perform the engagement to obtain limited assurance on whether the Subject Matters are prepared, in all material respects, in compliance with the Criteria. We have complied with the independence and other ethical requirements of the International Ethics Standards Board for Accountants' International Code of Ethics for Professional Accountants (including International Independence Standards) (IESBA Code), which is founded on fundamental principles of integrity, objectivity, professional competence and due care, confidentiality and professional behavior. The firm applies International Standard on Quality Control 1 and accordingly maintains a comprehensive system of quality control including documented policies and procedures regarding compliance with ethical requirements, professional standards and applicable legal and regulatory requirements.

We have not been engaged to provide an assurance conclusion on any other information disclosed within the Report.

Subject Matters

Subject Matters comprised of the following data expressed numerically or in descriptive text for the year ended 31 December 2020:

- GRI 302-1 Energy consumption within organization
- GRI 302-3 Energy intensity
- GRI 303-3 Water withdrawal (2018)*
- GRI 303-4 Water discharge (2018)*
- GRI 303-5 Water consumption (2018)*
- GRI 305-1 Direct (Scope 1) GHG emissions
- GRI 305-2 Energy indirect (Scope 2) GHG emissions
- GRI 305-3 Other indirect (Scope 3) GHG emissions
- GRI 305-4 GHG emissions intensity
- GRI 305-6 Emissions of ozone-depleting substances (ODS)*
- GRI 305-7 Nitrogen oxides (NOx), sulfur oxides (SOx), and other significant air emissions (NOx, SOx, PM and Hg)*
- GRI 306-2 Waste by type and disposal method*
- GRI 306-4 Transport of hazardous waste*

- GRI 403-1 Occupational health and safety management system (2018)
- GRI 403-2 Hazard identification, risk assessment, and incident investigation (2018)
- GRI 403-3 Occupational health services (2018)
- GRI 403-4 Worker participation, consultation, and communication on occupational health and safety (2018)
- GRI 403-5 Worker training on occupational health and safety (2018)
- GRI 403-6 Promotion of worker health (2018)
- GRI 403-7 Prevention and mitigation of occupational health and safety impacts directly linked by business relationships (2018)
- GRI 403-8 Workers covered by an occupational health and safety management system (2018)
- GRI 403-9 Work-related injuries together with Lost Time Injury Frequency Rate (LTIFR) and Injury Severity Rate (ISR)

*Assurance on data of Thermal Power business only

Criteria

The Subject Matters were assessed according to the following criteria:

- The Sustainability Reporting Standards of the Global Reporting Initiative ("GRI Standards");
- The Electric Utilities Sector Disclosures ("EUSD");
- The Mining and Metals Sector Disclosures ("MMSD"); and
- AA1000 AccountAbility Principles (2018) ("AA1000AP (2018)").

Directors' and management's responsibilities

The directors and management of Banpu are responsible for the preparation and presentation of the Subject Matters, specifically ensuring that in all material respects the Subject Matters are prepared and presented in accordance with the Criteria. This responsibility also includes the internal controls relevant to the preparation of the Report that is free from material misstatement whether due to fraud or error.

Procedure performed

In forming our limited assurance conclusion over the Subject Matters, our procedures consisted of making enquiries and applying analytical and other evidence gathering procedures including:

- Interviews with senior management and relevant staff at corporate and operating sites;
- Inquiries about the design and implementation of the systems and methods used to collect and process the information reported, including the aggregation of source data into the Subject Matters;
- Visits 3 site at PT Jorong Barutama Greston (PT JBG) in Indonesia, Clarence site in Australia, and Luannan site in China, selected on the basis of risk analysis including the consideration of both quantitative and qualitative criteria;
- Agreeing the Subject Matters to relevant underlying sources on a sample basis to determine whether all the relevant information has been included in the Subject Matters and prepared in accordance with the Criteria.

The procedures performed in a limited assurance engagement vary in nature and timing from, and are less in extent than for, a reasonable assurance engagement and consequently the level of assurance obtained in a limited assurance engagement is substantially lower than the assurance that would have been obtained had a reasonable assurance engagement been performed. Accordingly, we do not express a reasonable assurance opinion.

Inherent limitations

Due to the inherent limitations of any internal control structure it is possible that errors or irregularities in the information presented in the Report may occur and not be detected. Our engagement is not designed to detect all weaknesses in the internal controls over the preparation and presentation of the Report, as the engagement has not been performed continuously throughout the period and the procedures performed were undertaken on a test basis.

Restriction of use of our report

Our report should not be regarded as suitable to be used or relied on by any party wishing to acquire rights against us other than Banpu, for any purpose or in any other context. Any party other than Banpu who obtains access to our report or a copy thereof and chooses to rely on our report (or any part thereof) will do so at its own risk. To the fullest extent permitted by law, we accept or assume no responsibility and deny any liability to any party other than Banpu for our work, for this independent limited assurance report, or for the conclusions we have reached.

KPMG Phoomchai Audit Ltd.

KPMG Phoomchai Audit Ltd.

Bangkok

31 March 2021

FEEDBACK SURVEY

Please provide your feedback by scanning this QR Code or send this feedback form to the address specified at the back cover or e-mail to Sustainability@banpu.co.th

1. Which of the following group of readers best describe you?

- ○ Employee ○ Community ○ Customer ○ Government
- ○ Supplier ○ Contractor ○ Financial institution ○ Business partner
- ○ Shareholder ○ Investor ○ NGOs ○ Other (Please specify.....)

2. How did you receive this report?

- ○ Annual general meeting ○ Company's website ○ Employee ○ Seminar
- ○ Other (Please specify.....)

3. What is your reason for reading this report?

- ○ To support an investment decision ○ To understand the Company's business
- ○ For research and education purposes ○ Other (Please specify.....)

4. Please indicate the Company's topic(s) that you are interested in.

Governance
- ○ Sustainability Governance
- ○ Business Ethics
- ○ Digital Transformation
- ○ Supplier Management
- ○ Customer & Product Stewardship
- ○ Economic Distribution
- ○ Efficiency & Reliability of Power Plants
- ○ Socioeconomic Compliance
- ○ Risk Management
- ○ Business Continuity Management
- ○ Data Privacy & Cybersecurity

Environment
- ○ GHG Emissions
- ○ Energy
- ○ Air Emissions
- ○ Water
- ○ Waste
- ○ Biodiversity
- ○ Mineral Waste
- ○ Mine Closure
- ○ Mine Subsidence
- ○ Environmental Compliance

Social
- ○ Employee Management
- ○ Human Capital Development
- ○ Corporate Culture
- ○ Occupational Health & Safety
- ○ Human Rights
- ○ Community Engagement
- ○ Community Development
- ○ Resettlement
- ○ Indigenous Peoples

5. In your opinion, does the report cover all material topics?

- ○ Yes ○ No

If no, please specify topic(s) that should be included

.....

6. To what degree do you think you gain an insight on the Company's sustainability approach from this report?

- ○ High ○ Medium ○ Low

Please describe your understanding

.....

7. In your opinion, how does the sustainability approach be consistent with the Company's vision and mission?

- ○ High ○ Medium ○ Low

8. Please rate your satisfaction towards the design of this report

Report structure	○ High	○ Medium	○ Low	○ Dissatisfied
Ease to understand	○ High	○ Medium	○ Low	○ Dissatisfied

9. Please rate your satisfaction towards the content of this report

Completeness	○ High	○ Medium	○ Low	○ Dissatisfied
Materiality	○ High	○ Medium	○ Low	○ Dissatisfied
Reliability	○ High	○ Medium	○ Low	○ Dissatisfied

10. Please provide your additional comments or suggestions

.....

.....

Thank you for your opinion and feedback

BANPU | INTERNATIONAL VERSATILE ENERGY PROVIDER