BANPU

SMARTER ENERGY

FOR SUSTAINABILITY

CONTENTS

ABOUT THIS REPORT

Banpu Public Company Limited (Banpu) has annually published a sustainability report to provide a comprehensive overview of the Company's sustainability performance in the aspects related to environmental, social, and governance. The 2022 Sustainability Report was published on May 31st, 2023. This report has been prepared with reference to the GRI Standards and additional indicators from the GRI 12: Coal sector 2022 and the G4 electric utility sector disclosures. This report demonstrates the Company's commitment in response to the Sustainable Development Goals (SDGs) and the United Nations Global Compact (UNGC) as well as addressing the needs and expectations of stakeholders.

Reporting Boundary

This report covers performance from January 1st to December 31st, 2022, coinciding with the 2022 Financial Report. The performance includes business entities in which Banpu holds a greater than 50% of total shares and has management control. These entities include the mining business in Indonesia, Australia and Mongolia; the thermal power business in China; the renewable power business in China, Japan, Vietnam, and Australia; the solar rooftop and floating business in Thailand; the smart cities and energy management business in Thailand; as well as the offices in Thailand, Indonesia, China, Australia, Japan, and Vietnam. However, the boundary of this report does not cover gas and thermal power business in the U.S. This report covers 25 sustainability topics, including 14 material topics, with details available on pages 16-17.

This report excludes the performance of the business entities that Banpu holds less than 50 percent of either direct or indirect investment and does not directly participate in their management, in other words only supervision through their Board of Directors. Example of such entities are mining business in China, thermal power business in Thailand and Lao PDR, and energy storage system business in China. More information on each business is disclosed on pages 84-85.

Assurance

This report was assured by an external party that it was prepared with reference to the GRI Standards. In summary, the scope of assurance is as follows:

- Water and Air emissions data of mining business in Indonesia and Australia; thermal power business in China; renewable power business in China, Japan, Vietnam and Australia; solar rooftop and floating business in Thailand; and the offices in Thailand, Indonesia, China, Australia, Japan, and Vietnam.
- Waste data of mining business in Indonesia and Australia; thermal power business in China; renewable power business in China, Vietnam and Australia; solar rooftop and floating business in Thailand; and the offices in Thailand, Indonesia, China, Australia, Japan, and Vietnam.
- Occupational health and safety data of mining business in Indonesia, Australia, and Mongolia; thermal power business in China; renewable power business in China, Vietnam and Australia; solar rooftop and floating business in Thailand; and the offices in Thailand, Indonesia, China, Australia, Japan, and Vietnam.
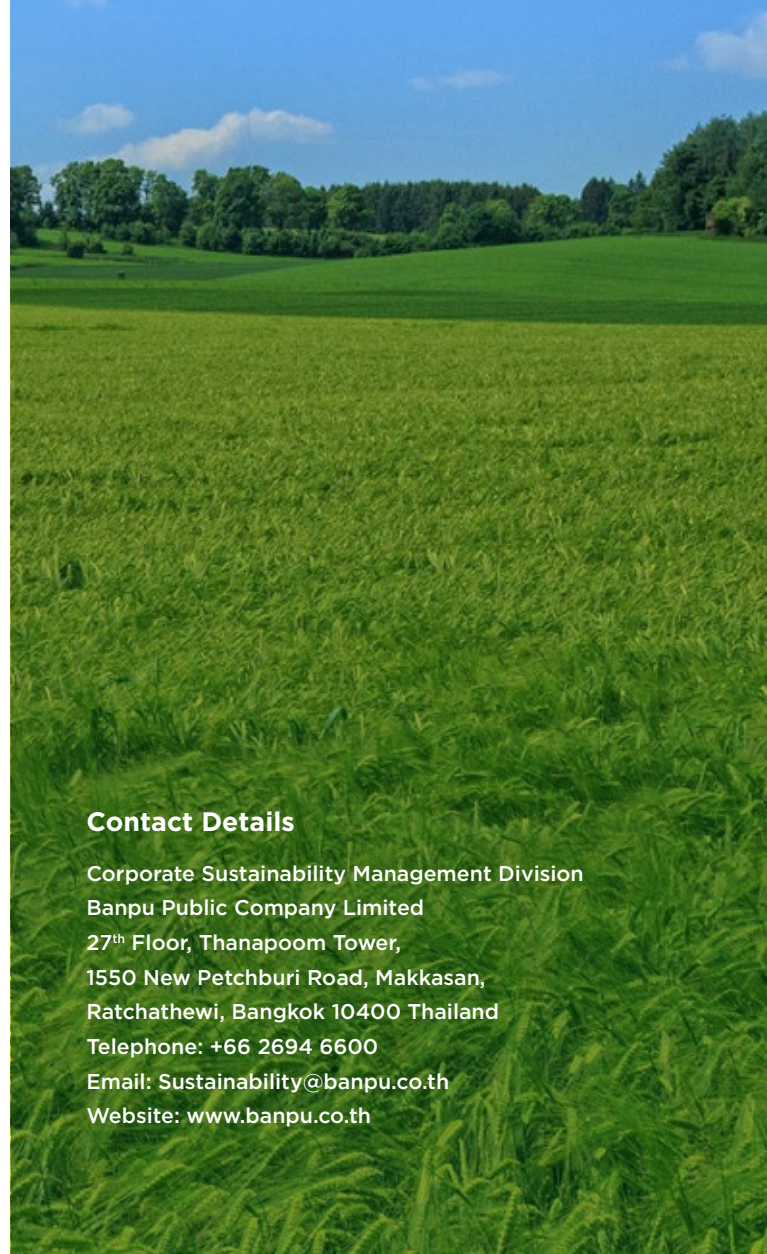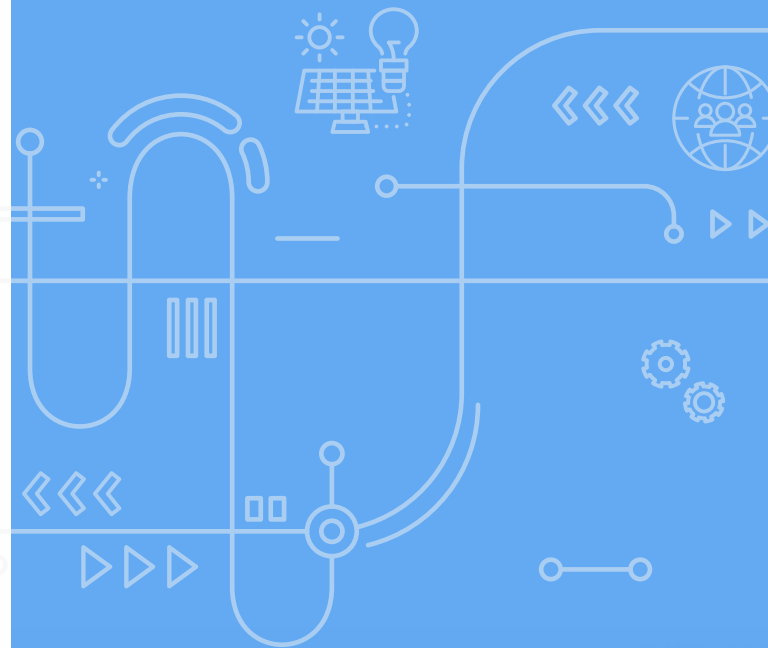
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MESSAGE FROM CHAIRMAN OF ESG COMMITTEE

With our dedication towards sustainable excellence, the Company has consistently implemented activities rooted in a strong sustainability foundation. As a result, the Company has been recognized as a member of DJSI.

Mr. Piriya Khempon
Chairman of the Environment,
Social and Governance Committee

Throughout 2022, the world encountered a multitude of challenges, including climate change, geopolitical conflicts, especially, the Russian-Ukrainian conflict, resulting in energy and food scarcity, increased prices, and supply chain disruptions. These factors contributed to fluctuations in global inflation and led to a slowdown in sustainability performance in many countries worldwide. Despite these obstacles, Banpu has remained steadfast in its commitment to sustainability. The Environment, Social, and Governance Committee (ESG Committee) thoroughly evaluated and prioritized the impact of these situations on the Company and three key capitals - natural, human, and social - and wholeheartedly supported the Board of Directors in steering the Company in the right direction while ensuring adherence to the United Nations Sustainable Development Goals (UN SDGs).

Accordingly, the ESG Committee is responsible for recommending relevant ESG strategies, overseeing ESG-related policies, targets, practices, and performances. In previous year, the Committee has achieved notable accomplishments, such as revising the human rights policy to address major human rights issues (e.g. diversity, human trafficking, etc.) and human rights due diligence, Additionally, the Committee has provided guidance on the path towards Net Zero in line with the Paris Agreement.

This year has presented a new set of challenges for the Company, including increasingly severe environmental issues due to climate change and pressure to pursue sustainable development growth. In response, the Company has released its first Climate Change Report, following the Task Force on Climate-related Financial Disclosures (TCFD) recommendation. The Company takes its responsibility to address climate-related risks and opportunities seriously and is committed to enhancing its disclosure in this area.

With our dedication towards sustainable excellence, the Company has consistently implemented activities rooted in a strong sustainability foundation. As a result, the Company has been recognized as a member of the Dow Jones Sustainability Index (DJSI), marking our ninth consecutive year as a DJSI member. This recognition affirms our commitment and practice align with international standards.

On behalf of the ESG Committee, I would like to thank all stakeholders for their unwavering support throughout this year. We are confident that Banpu is prepared to respond to the wide range of changes and challenges, along with creating a positive sustainable impact on the natural, human, and social capitals.

MESSAGE FROM CEO

> **In our efforts to align with the SDGs, we have** identified seven primary goals which are directly related to our business development.

Somruedee Chaimongkol
Chief Executive Officer
and Chairman of the Sustainability Committee

Sustainability has always been central to our operations as we strive to remain mindful of the environmental and social impacts of our activities. We are proud to present our Sustainability Report for the year and are pleased to announce that we have once again been recognized as a member of the Dow Jones Sustainability Index (DJSI), marking our ninth consecutive year as a DJSI member. This distinction recognizes our commitment to sustainability and our efforts to accelerate the transition to a low-carbon future.

Banpu is proud to be a member of the United Nations Global Compact (UNGC), a platform for businesses, civil society, and the United Nations to advance the Sustainable Development Goals (SDGs) and create a better world for everyone. At Banpu, we are dedicated to integrating environmental, social, and governance (ESG) principles into our business practices and decision-making processes. In particular, we are committed to decarbonization and reducing our greenhouse gas emissions in order to combat climate change. In our efforts to align with the SDGs, we have identified seven primary goals which are directly related to our business development: Affordable and clean energy (Goal 7), Responsible consumption and production (Goal 12), Climate action (Goal 13), Clean water and sanitation (Goal 6), Decent work and economic growth (Goal 8), Life on land (Goal 15), and Partnerships for the goals (Goal 17). Over the years we have made significant progress towards each goal, and we continue to reinforce our dedication to promoting these initiatives through all of our operations, products and services going forth.

Though we are committed to providing a safe and healthy workplace, we still have room for improvement. This year we experienced a fatality at one of our operations in China. On behalf of the entire company, I want to extend my deepest condolences to the family and loved ones of the victim. This incident is a tragic reminder that safety standards must be upheld to the highest degree. We are doing all that we can to improve our safety practices in order to prevent further such incidents.

Banpu is dedicated to continuous improvement. I am happy to announce that we have just released our first report on the Task Force on Climate-related Financial Disclosures (TCFD). This report demonstrates our commitment to transparency and to disclosing the financial impacts of climate-related risks and opportunities on our business.

I am delighted to share this report with you to highlight the key measures we will be taking to reinforce our "Greener, Smarter" strategy. We know that there is always more work to be done, which is why we have set ambitious goals for the future. Furthermore, we are continuously investing in new technologies and processes that will help us reduce our environmental footprint, including further investment into renewable energy sources and harnessing the power of data to improve our operational efficiency.

To further solidify our position as a global sustainability leader, we have announced our "Global Corporate Sustainability" function, which will ensure that our sustainability efforts are properly integrated at every level, from our daily operations to our broader corporate strategy.

Thank you to our employees, customers, and all of our stakeholders for your dedicated support and partnership as we work towards a more sustainable future. Going forwards, we will continue to drive sustainable progress in the energy sector and beyond through cutting-edge technologies and innovation. Our commitment to initiatives such as the UNGC and TCFD will help to guide us toward our vision of a cleaner, smarter and more efficient future for all.

OUR WAY IN SUSTAINABILITY

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

BANPU
Transformation
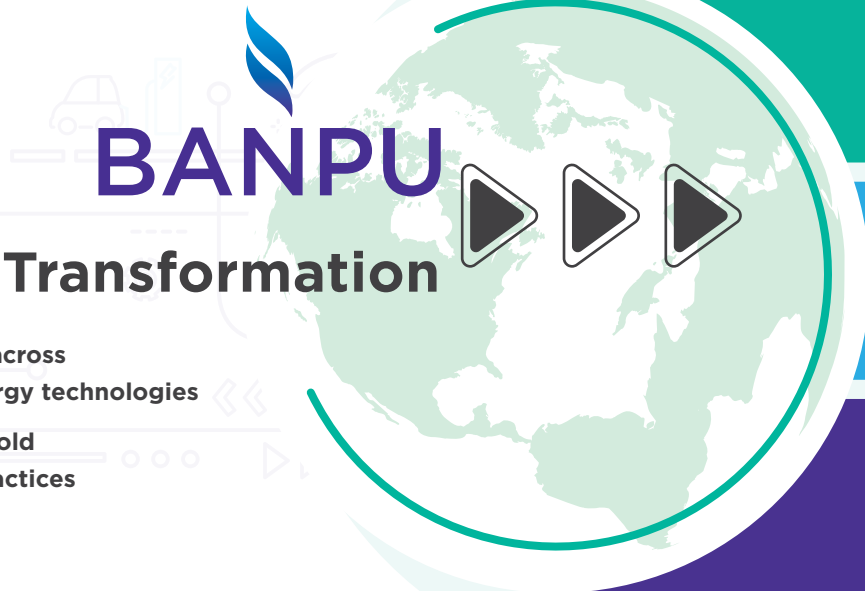
Greener & Smarter Strategy: Banpu Transformation encompasses 3 core strategies

Acceleration ▶ ▶ ▶ Accelerating the growth of three core groups of businesses; energy resources, energy generation, and energy technology, with response to all customer's needs by leveraging advanced technology to optimize energy utilization and sustainability.

Antifragile ▶ ▶ ▶ Weathering disruption and economic cycles through our integrated energy solutions portfolio by diversifying risks and capturing opportunities from existing risks.

Augmentation ▶ ▶ ▶ Expanding the business ecosystem and energy expertise to create growth from new S-curve businesses by strategically investing in businesses with high potential, technology advancement, long-term competitiveness, and sustainable positive returns.

GREENER & SMARTER STRATEGY

ESG PRIORITY 2022-2025

Environment

Decarbonization ▶ ▶ ▶	Reduce GHG emissions at all business units and remove any residual emissions by offsetting
Zero waste ▶ ▶ ▶	Move towards a circular economy by minimizing direct disposal waste to zero
Net-positive impact on biodiversity ▶ ▶ ▶	Partner with stakeholders to ensure net gains for biodiversity at the end of project lifetime

Social

Banpu Heart

Employer of choice ▶ ▶ ▶	Strengthen employee engagement level to top quartile through corporate culture "Banpu Heart"
Safe and healthy workplace ▶ ▶ ▶	Instill a safety culture at all operational levels across supply chain to achieve 3-Zero target
People capability development ▶ ▶ ▶	Build a lifelong learning organization through data-driven learning & development program

Governance

Digital transformation ▶ ▶ ▶	Pursue step-change improvement through user-centric digital solution deployment
Sustainable supply chain ▶ ▶ ▶	Integrate ESG across supplier lifecycle management, especially critical suppliers
ESG in performance evaluation ▶ ▶ ▶	Embed ESG as part of individual KPIs, from top executives to frontline managers

YEAR IN REVIEW

25 January 2022
Banpu Renewable Singapore Pte. Ltd. (BRES), a subsidiary company of Banpu NEXT, entered into a purchase and sale agreement (PSA) to acquire 100% stake in Licogi 16 Gia Lai Investment Renewable Energy Joint Stock Company (LCE Gia Lai) which owns Chu Ngoc Solar Power Plant and Licogi 16 Ninh Thuan Investment Renewable Energy Joint Stock Company (LCE Ninh Thuan).

23 February 2022
BPIN Investment Co., Ltd. (BPINI), a subsidiary company of Banpu NEXT, completed the divestment of its 47.5% shareholding in Sunseap Group Pte. Ltd. (Sunseap) to the purchaser, EDP Renováveis SA (EDPR). The decision to sell BPINI's shareholding in Sunseap is part of Banpu group's Portfolio Rationalization.

4 March 2022
BRES has entered into a Shares Subscription Agreement (SSA) for the purchase of 49.04% shareholding in Solar Esco Joint Stock Company (Solar Esco), which is a leading renewable energy company in Vietnam, providing full-fledged rooftop solar power platform covering planning, development, and construction as well as providing Engineering Procurement & Construction (EPC), and Operation & Maintenance (O&M).

5 July 2022
Banpu Ventures Pte. Ltd., a wholly owned subsidiary company of Banpu invested in the U.S. Healthcare industry through Public U.S. based healthcare investment fund as a founding limited partner.

18 May 2022
BKV Corporation (BKV), subsidiary company of Banpu has signed a Purchase and Sale Agreement (PSA) to acquire natural gas and midstream assets in the Barnett Shale in the U.S. from XTO Energy, Inc. and Barnett Gathering LLC (XTO), subsidiaries of Exxon Mobil Corporation.

12 July 2022
BKV and EnLink Midstream, LLC (EnLink), midstream operator (including separation, compression, transports, and processes natural gas), entered into a definitive agreement to develop a Carbon Capture and Sequestration (CCS) project in the Barnett Shale region of North Texas. The project is expected to start commercial operation in 2023.

21 July 2022
Banpu NEXT, partnering with Cherdchai Motors Sales Co., Ltd. - the largest bus operator in Thailand, and Durapower Holding Pte. Ltd. - a global leader in performance lithium battery storage solutions, to set up a lithium-ion battery plant in Thailand, expected an initial operation to commence in 2023.

18 November 2022
BKV filed its registration statement, including a draft prospectus (Public Filing), to the U.S. Securities and Exchange Commission in order to offer its newly issued ordinary shares in an Initial Public Offering (IPO).

OUR BUSINESS

Energy Resources

1. Mining Business

The Company operates both open-pit and underground mining in Indonesia, Australia, and China. Key customers are the industrial and utility sectors in Asia and Europe.

2. Gas Business

The Company specializes in operating and developing natural gas and natural gas liquid (NGL) properties, primarily located in 2 regions: the Barnett Shale in the Fort Worth Basin of Texas (Barnett) and the Marcellus Shale in the Appalachian Basin of Northeastern Pennsylvania (NEPA). The product is transferred via the national gas pipeline network to serve domestic customers.

Energy Generation

3. Thermal Power Business

The thermal power plant with high-efficiency low-emissions (HELE) technology, provides reliable electricity and heat to serve the industrial sector as well as household consumers in China, Thailand, the U.S., and Lao PDR.

4. Renewable Power Business

The Company provides electricity generated from solar and wind to serve the clean energy markets. The current production operates in China, Japan, Australia, and Vietnam, while various projects are under project development.

Energy Technology

5. Solar Rooftop & Floating Business

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

6. Energy Storage System

The Company specializes in developing energy storage systems that cater to electric vehicles as well as stationary applications to ensures efficient and availability of power supply in all scenarios.

7. Smart Cities & Energy Management

The Company offers comprehensive energy solutions to enhance business efficiency and optimize the energy management of buildings and cities through an evaluation and analysis of energy consumption.

8. E-Mobility

The Company offers a range of customizable EV-related services and provides full EV fleet management that is linked to a digital platform to support customers in the logistics business.

9. Energy Trading

The Company secures electricity supply to a pool of committed clients, captures arbitrage opportunities, and looks to expand further into liberalized markets.

MAP OF OPERATIONS

CHINA
MINING
2 Coal mines

THERMAL POWER
4 Coal-fired power plants

RENEWABLE POWER
7 Solar power plants

SOLAR ROOFTOP & FLOATING
ENERGY STORAGE & SYSTEM

MONGOLIA
MINING
3 Coal mines

JAPAN
THERMAL POWER
1 Coal-fired power plant

RENEWABLE POWER
20 Solar power plants

SOLAR ROOFTOP & FLOATING
E-MOBILITY
ENERGY TRADING

USA
GAS
2 Shale gas operations

THERMAL POWER
1 Gas-fired power plant

LAO PDR
THERMAL POWER
1 Coal-fired power plant

VIETNAM
RENEWABLE POWER
3 Solar power plants
2 Wind power plants

SOLAR ROOFTOP & FLOATING

THAILAND
THERMAL POWER
1 Coal-fired power plant

SOLAR ROOFTOP & FLOATING
ENERGY STORAGE SYSTEM
SMART CITIES & ENERGY MANAGEMENT
E-MOBILITY

INDONESIA
MINING
8 Coal mines

SOLAR ROOFTOP & FLOATING

AUSTRALIA
MINING
9 Coal mines

RENEWABLE POWER
2 Solar power plants

MANAGEMENT STRUCTURE

The Board of Directors of Banpu Public Company Limited is a one-tier system with 4 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.

Status

7 Persons — Non-executive Director

5 Persons — Independent Director

1 Person — Executive Director

Gender

1 Person — Female

12 Persons — Male

Tenure

>10 year — **4** Persons

3-10 year — **7** Persons

<3 year — **2** Persons
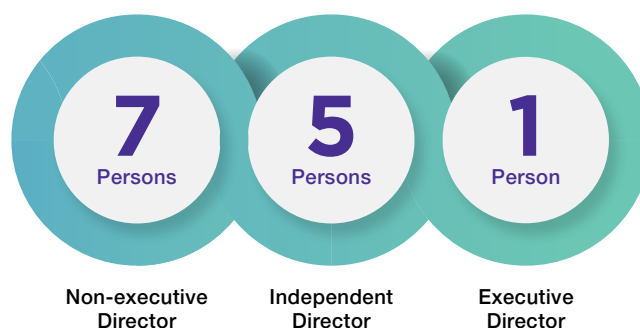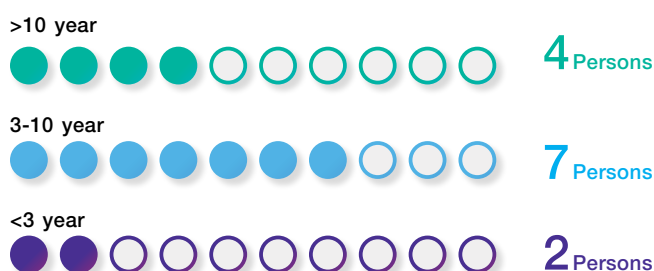
Member	Role & Responsibility
Corporate Governance and Nomination Committee	1 Independent director 3 Non-executive directors	• Review and update the Corporate Governance Policy (CG Policy) and Code of Conduct • Monitor compliance through whistleblower channel • Review the Board's composition and skills matrix • Nominate directors, CEO and senior executives
Audit Committee	3 Independent directors	• Review the financial reports, the sufficiency of internal control, internal audit, and risk management system, and regulatory compliance • 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
Environmental Social and Governance Committee	3 Independent directors	• Oversee the Company's policies and practices, as well as targets and performance with respect to ESG matters • Review and monitor stakeholder engagement and materiality assessment process • Review and monitor management practice of major ESG risks • Oversee the Company's public disclosures in relation to ESG matters

Board of Directors Nomination

The Corporate Governance and Nomination Committee is responsible for setting nomination criteria and reviewing the qualifications of the candidates. In general, the tenure of independent director 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 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

Board of Directors	Position	Finance/Accounting	Marketing/Logistic	Management	Technical/Engineer	Business Relation	Economics	Strategic/International	Mining	Power	Oil & Gas	Technology
1. Mr. Chanin Vongkusolkit	Chairman of the Board of Directors	•	•	•		•	•	•	•	•		
2. Mr. Teerana Bhongmakapat	Independent Director	•		•	•	•	•	•				
3. Mr. Piriya Khempon	Independent Director			•		•	•	•				
4. Mr. Suthad Setboonsarng	Independent Director			•		•	•	•				
5. Mr. Pichai Dusdeekulchai	Independent Director	•		•		•		•				
6. Mr. Teerapat Sanguankotchakorn	Independent Director			•	•	•						•
7. Mr. Anon Sirisaengtaksin	Director			•	•	•		•			•	
8. Mr. Buntoeng Vongkusolkit	Director		•	•		•		•				
9. Mr. Metee Auapinyakul	Director			•		•		•		•		
10. Mr. Ongart Auapinyakul	Director			•	•	•		•	•			
11. Mr. Verajet Vongkusolkit	Director	•		•		•	•			•		
12. Mr. Sarayuth Saengchan	Director	•			•	•	•	•				
13. Ms. Somruedee Chaimongkol	Director, CEO	•		•		•		•	•	•		

Note: Mr. Sarayuth Saengchan (Person no.12) was appointed as a director, effective from 2 April 2022, and a member of the Corporate Governance and Nomination Committee, effective from 1 May 2022.

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 performance self-assessment is performed by every individual, which covers the Board as a whole, sub-committees and individual directors. Assessment results and suggestions are discussed for improvement to ensure good governance and benefits to the Company and the shareholders.

STAKEHOLDER AND MATERIALITY MATTERS

Stakeholder Engagement

The Company places importance on the opinion of all stakeholders as it helps to strengthen the Company's management efficiency. In considering the issues that stakeholders are interested in, the Company applies the stakeholder analysis standard, which was developed based on the international AA1000 Stakeholder Engagement Standard (AA1000SES). Three principles – inclusivity, materiality, and responsiveness – underpin the stakeholder engagement framework. Results from each business unit are collected and analyzed at corporate level under supervision of the Sustainability Committee and ESG Committee. Details of engagement methods and stakeholder's issues are disclosed on pages 86-87.

More Information

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 GRI Standards and AA1000 AccountAbility Principles Standard (AA1000APS), while taking into consideration the governance, environment and social aspects for impacts on the Company and impact on Natural, Social and Human Capitals. The material topics are annually reviewed and approved by the Sustainability Committee and ESG Committee.

More Information

Process of Materiality Assessment

1 Identify sustainability topics

2 Identify impacts on the Company

3 Identify impacts on Natural, Social and Human Capitals

4 Prioritize sustainability topics
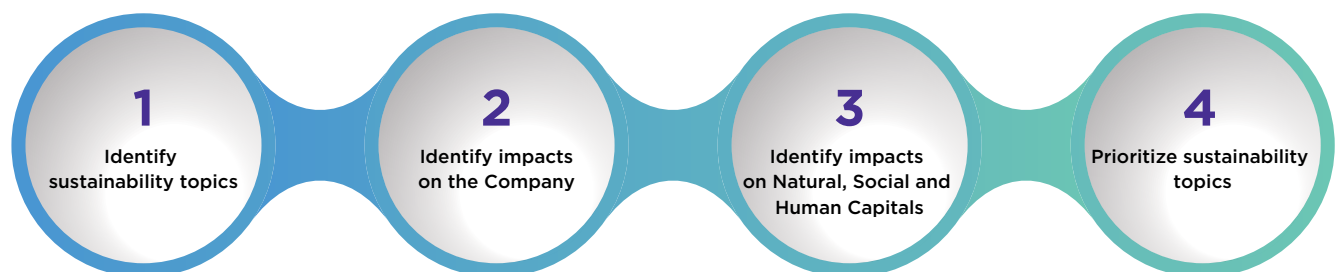
Re-validation of Material Topics

The Company conducted a materiality assessment for 2022-2023 period by consolidating the assessment results from the mining business in Indonesia, the global trend, and material topics of peers in related industries, as well as other issues concerned by senior executives in each business unit. The assessment results were reviewed and approved by Sustainability Committee in September 2022. At the same time, some topics were merged such as "Mineral Waste" has been merged with the "Waste" topic. In addition, some topics were renamed to emphasize the current business circumstances, for instance "Employee Engagement". Moreover, the Company considered impact on the Company and Impact on Natural, Social and Human Capitals. As a result, the report contents cover 25 topics with 14 material topics.

Materiality Matrix
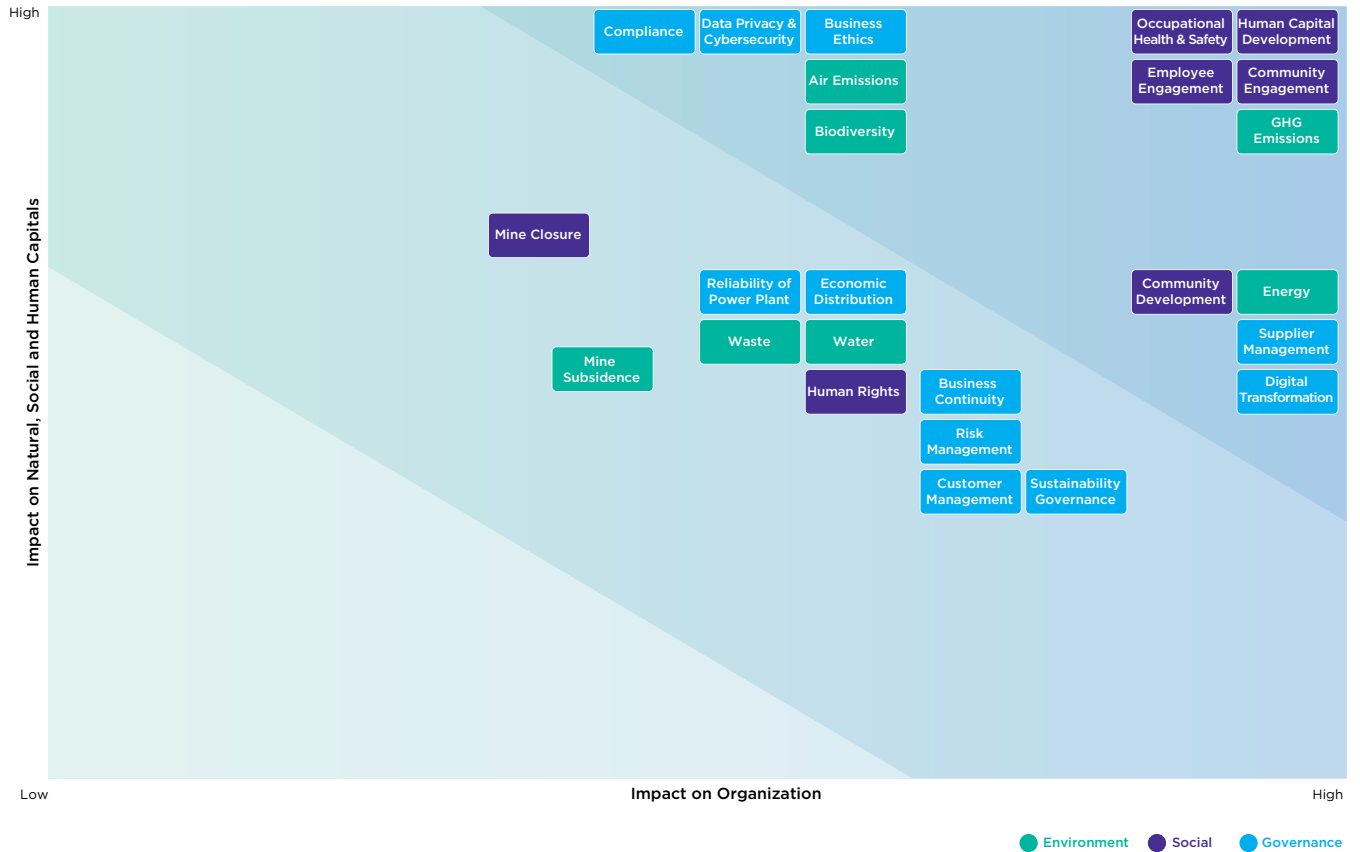
Impact Boundary of Material Topic

Material Topic	Employee	Business Partner	Community	Contractor	Financial Institution	Customer	Government	Investor	Shareholder	Supplier
Business Ethics	•	•	•	•			•	•	•	•
Digital Transformation									•	
Supplier Management				•			•			•
Compliance							•			
Data Privacy & Cybersecurity						•				•
GHG Emissions						•	•			
Energy				•			•			
Air Emissions				•			•			
Biodiversity							•			
Employee Engagement	•									
Human Capital Development	•									
Occupational Health & Safety	•			•						
Community Engagement			•							
Community Development			•							

SUSTAINABILITY RECOGNITIONS

With a long-term commitment to ESG and a solid corporate sustainability governance, the Company has been recognized by several leading sustainability rating agencies nationally and globally.

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 the 9th consecutive year.

MSCI ESG RATINGS

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

The Company received a rating of A (on a scale of AAA-CCC) in the MSCI ESG Ratings assessment.

Sustainability Award
Gold Class 2022
S&P Global

The Company maintains "Gold Class" in Coal & Consumable Fuels for the 8th consecutive year from S&P Global Sustainability Yearbook 2022.

National Recognition

HONOR
Sustainability Excellence
2022

The Company achieved Sustainability Awards of Honor in Sustainability Excellence at SET Awards 2022 for the 5th consecutive year.

THSI THAILAND SUSTAINABILITY INVESTMENT 2022

The Company maintains one of the companies in Thailand Sustainability Investment by the Stock Exchange of Thailand for the 8th consecutive year.

The Company remains one of the top listed companies with excellent corporate governance scoring according to the Corporate Governance Report of Thai Listed Companies in 2022, developed by The Thai Institute of Directors Association (IOD) with support from the Stock Exchange of Thailand.

VOLUNTARY COMMITMENTS

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

UN (logo)	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).
S&P Global	Banpu has been invited to participate in S&P Global Corporate Sustainability Assessment since 2014. The Company has used the assessment result as a guidance to formulate a corporate sustainability strategy and improve ESG performances.
CDP DISCLOSURE INSIGHT ACTION	Banpu has participated in CDP climate change questionnaires since 2010 and extended to water security and forests questionnaires in 2017 and 2019 respectively. The findings have been used to enhance the Company's environmental management system.
GRI	Banpu publishes sustainability reports referring to the GRI Sustainability Reporting Standards. The report is also annually assured by an external party in its alignment with the GRI Standards.
AccountAbility institute of social and ethical 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.

PARTNERSHIPS

Corporate Philanthropy Policy

For almost four decades, the Company has been guided by ESG principles to create a balance between business growth and sustainable value creation for stakeholders. The Company strives to support philanthropic activities following the corporate philanthropy policy to strengthen a strong and sustainable community and society.

Corporate Philanthropy Policy

Education

Partnership school

Banpu has continually partnered with the Ministry of Education and other private sectors to support schools to improve school administration, raise academic achievement, and prepare students for the future. The Company has supported three schools, namely, Non Sa-at Phithaya School, Khon Kaen Province; Chumchon Phon Ngam Phon Sawang School, Maha Sarakham Province and Rong Kham Hong Thong Witthaya School, Roi Et Province. In 2022, all these schools continued to improve their education, for example, an extension of the Active learning approach for the student at early childhood and primary levels which improves academic achievement, analytical thinking skills, and communication. In addition, the project supported in several dimensions, including improving technology and information technology, enhancing English language skills, developing vocational and life skills, and creating a learning community.

Social Welfare

Promoting and improving the well-being of disabled

Banpu recognizes the importance of people with disability by hiring visual impairment masseurs and supporting a direct donation of the Fund for the empowerment of persons with disabilities or hiring of persons with disabilities through government agencies to work in communities.

Health

Banpu Table Tennis Club

Banpu Table Tennis Club (BTTC) was established in early 2008 as a commitment to developing Thai table tennis players by providing daily training support, sponsoring participation in national and international tournaments, and organizing various activities to cultivate morality, ethics, discipline, harmony, and volunteer spirit of the club's members.

Banpu Table Tennis Club

106 Members
75 Athletes
12 Coaches
19 General members
9 Training centers

Achievement of Banpu Table Tennis Club's athletes since its establishment

2 national athletes competing in the SEA Games
49 national junior athletes
6 national junior youth athletes
2 professional athletes in the Republic of Poland
34 athletes admitted to universities for their excellence in table tennis

Economic Development

Banpu Champions for Change

The "Banpu Champions for Change" project is a collaboration between Banpu and ChangeFusion Institute, a non-profit organization under the Rural Restoration Foundation of Thailand under the Royal Patronage. This project has been running since 2011 with a mandate to support young social entrepreneurs who are full of creativity and potential for social change, extending business ideas to achieve income growth while positively impacting society, the community, and the environment. The project promotes learning and understanding of social enterprise as well as morals and ethics, and sustainability principles (ESG) in business.

"Banpu Champions for Change" No. 11

- Supported 7 social enterprises and each of which received THB 80,000 in seed capital for operations and business development for a period of 3 months
- 3 social enterprises were chosen for their distinctions in business and social impacts. Each winning team received THB 250,000

The project also organized "Impact Day" with the theme "Maximize the Impact, Creating a Strong Network, and Expanding the Power of SEs" to offer a venue for social enterprises to introduce their products and services to the general public. It is also a learning space for SEs and partners in the field to create a SE network in the future.

Emergency Relief

Earthquake in Indonesia

In November 2022, an earthquake occurred in the city of Cianjur, which is far away from Jakarta, Indonesia's capital, about 100 kilometers. This earthquake impacted several areas and ITM, our subsidiary in Indonesia, sent a rescue team to search and help the victims, as well as organized a team for first aid, arranged temporary housing and supported on consumer goods for the victims.

Environment

Power Green Camp

Banpu collaborated with the faculty of environment and resources studying, Mahidol University, in hosting the "17th Power Green Camp" under the theme of "Climate Change, We Must Change". For this year, the camp was open to applicants from high schools as well as vocational colleges. 50 students from 50 schools in 40 provinces were selected to join the camp to learn about climate change. Examples of activities - surveying the coastal erosion of Ban Khun Samut in Samut Prakarn Province and studying the problem of coastal change and visiting Mahidol University, Kanchanaburi campus to learn about biodiversity in the forest. The camp concluded with the environmental science group project competition, which was presented both online and offline to the camp committee and the general public. This camp enabled young people to learn about real climate change problems and realize how the importance of sustainable environmental management, as well as be able to adapt to daily life for living in balance with nature.

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 objectives to both increase positive impact and reduce negative impact from business operations. The long-term targets specific for all 7 Goals are developed and monitored.

SUSTAINABLE DEVELOPMENT GOALS

ISSUES	2022	▶▶▶	2025	
Waste	• Less than **0.130 kg/MWh** of non-hazardous waste disposal intensity for thermal power business • Less than **0.010 kg/tonne** of hazardous waste disposal intensity for mining business • Less than **0.140 kg/tonne** of non-hazardous waste disposal intensity for mining business		• **Zero** hazardous waste to landfill	**6** CLEAN WATER AND SANITATION
GHG Emissions			• More than **1.1 GW** of renewable energy production capacity	**7** AFFORDABLE AND CLEAN ENERGY
Occupational Health & Safety	• More than **70%** of business units assessed for human rights risks • **Zero** occupational fatalities of employees and contractors		• Less than **10.93** of injury rate for employees and less than **0.53** for contractors • **Zero** high-consequence injury rate for contractors and less than **0.06** for employees • Less than **1.99** of lost time injury rate for employees and less than **0.14** for contractors	**8** DECENT WORK AND ECONOMIC GROWTH
Energy			• **5%** energy intensity reduction from 2019 for mining business	**12** RESPONSIBLE CONSUMPTION AND PRODUCTION
GHG Emissions			• **7%** GHG emissions intensity reduction from BAU for mining business • **20%** GHG emissions intensity reduction from BAU for thermal and renewable power business	**13** CLIMATE ACTION
Biodiversity			• Net positive impact on biodiversity upon closure of the mine • All business units assessed for potential biodiversity impact • All business units assessed for biodiversity value	**15** LIFE ON LAND
Community Development	• Raise SDGs awareness among the communities • Embed SDGs into community development projects • All community development projects linked to the SDGs			**17** PARTNERSHIPS FOR THE GOALS

GOVER-NANCE

PERFORMANCE HIGHLIGHT

		2022	Target 2022	Target 2025
	Coverage of material ESG aspects embedded in CEO's KPI and deployed to senior management	❌ 86%	100%	100%
	Number of significant corporate governance complaints	✅ 0	0	0
	Complaints regarding customer privacy	✅ 0	0	0
	Ratio of the dividend payout to net profits	❌ 21%	≥50%	≥50%
	Availability factor	✅ 94%	≥90%	≥90%
	Unplanned outage factor	✅ 0.82%	<5%	<5%
	Coverage of BCP exercise for critical business functions	❌ 11%	≥12%	≥64%
	Coverage of CMT/IMT exercise	❌ 42%	≥71%	100%
	Significant socioeconomic non-compliance	✅ 0	0	0
	Significant fines from environmental non-compliance	✅ 0	0	0
	Coverage of ESG risk management	❌ 95%	>98%	100%
	IT and IoT assets securely managed by Security Operation Center	✅ 60%	≥60%	≥90%

SUSTAINABILITY GOVERNANCE

Significance & Commitment

The Company believes that good governance is an important basis for any business operations. Integrating environmental, social, and governance (ESG) strategies into organizational operations and management will eventually drive sustainable business growth.

Management Approach

Performance Overview		2022	Target 2022	Target 2025
Coverage of material ESG aspects embedded in CEO's KPI and deployed to senior management	❌	86%	100%	100%

Management Approach

The Company adheres to operating the business in full compliance with laws and regulations as well as shareholders' meeting resolutions. To ensure the efficiency of sustainability governance, the Company has established the Environment, Social and Governance Committee (ESG Committee) to specifically oversee ESG-related issues. The Company has also integrated ESG-related risks into the enterprise risk management under the supervision of the Board of Directors. The ESG Committee and the Board of Directors shall monitor the sustainability performance through quarterly meetings.

Sustainability Policy

To drive sustainability strategy, the Company has established the Sustainability Committee, chaired by the CEO, who is one of the members of the Board of Directors. The committee, consisting of senior executives and heads of business units in all countries in which the Company operates, convenes twice annually.

Chief Executive Officer (Chairman)

Head of Global Internal Audit and Compliance

Head of Mining Business

Head of Oil & Gas Business

Head of Power Business

Head of Human Resource

Head of Corporate Services

Head of Renewable & Energy Technology Business

Head of Digital and Innovation

Head of Investor Relations

Head of Banpu Academy

Head of Corporate Development

SVP-Corporate Communications

Country Heads

Chief Financial Officer

SVP-Corporate Strategy

SVP-Enterprise Risk Management

SVP-Global Corporate Sustainability (Secretary)

As of 31 December 2022

Corporate Sustainability Management Division

Sustainability Secretariat

Year in Review

In order to solidify position as a global sustainability leader, the Company had made significant changes to its sustainability management structure. The previous "Health, Safety, Environment, and Community Engagement" has been transformed into the "Global Corporate Sustainability" department. This restructuring aims to ensure that sustainability efforts are fully integrated at every level, from broader corporate strategy to day-to-day operations.

To foster a deeper understanding of ESG management, the Company organized ESG Summit 2022 to discuss on ESG strategy and long-term plans. In addition, ESG awareness was strengthened among employees at all levels through sharing sessions to empower employees to contribute actively to the Company's sustainability goals within their respective roles. For example, one of those sessions focused on the topic of Decarbonization.

ESG Summit 2022

In 2022, the Company held an ESG Summit on October 10 under the theme "ESG Regulatory: Pathway to Practice". The ESG committee, CEO, and senior executives from all business units also attended the summit with a shared objective of strengthening collaboration and partnership in ESG management practices across every business unit. During the summit, the Company invited S&P Global to share valuable insights under the topic "Framing the Future for Nature", focusing on Task Force on Nature-related Financial Disclosures (TNFD).

ESG Committee Meeting

ESG Committee Meeting is held quarterly to support the Board of Directors in fulfilling their ongoing commitment to ESG. The committee takes on responsibilities of overseeing various ESG aspects such as occupational health and safety, climate change, human rights, and more, by recommending relevant ESG strategies, overseeing related policies, targets, practices, reviewing and monitoring ESG risks, and stakeholder engagement, including governing the Company's public disclosure in relation to ESG matters. Key agenda of the meeting is as follows:

- Review highlight of ESG risks
- Review progress of Decarbonization program
- Review progress of forestry projects in Thailand
- Review financial impact from climate change, following TCFD guidelines
- Review corporate ESG strategy
- Review stakeholder engagement process & stakeholder's issues
- Review community complaints
- Review indicators and targets in regard to the sustainability governance
- Review human rights due diligence plan
- Review materiality matrix
- Monitor ESG performance

Sustainability Committee Meetings

The Sustainability Committee Meeting is convened twice a year to review the progress of the Company's ESG performance against the target. Besides, the global sustainability trends are also highlighted to understand their potential impact on the business and identify potential opportunities.

	Meeting No. 1	Meeting No. 2
	March 10, 2022	September 22, 2022
Key agenda	• Review 2021 ESG performance • Review ESG rating index and improvement plan • Review ESG roadmap	• Review the human rights implementation progress and roadmap • Review corporate ESG data management platform • Review financial impact analysis following TCFD guideline
Approval	• Biodiversity policy	• 2021-2025 ESG Targets • 2022-2023 materiality matrix

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
Global Direction toward Carbon Neutrality and Business	Office of Natural Resources and Environmental Policy and Planning	10
Energy Sector in the U.S.	Banpu Power Public Company Limited	2
Director duties and ESG	INSEAD	4
Agriculture & Cooperatives Executive Program (ACE) # 1	Minister of Agriculture and Cooperative, Agricultural Research Development Agency (Public Organization), and Kasettratikarn Foundation	1
Executive Coach: Inspiring Leader	John Robert Powers	1
Seminar on Miscellaneous Accounting Knowledge That an AC Shouldn't Miss	The Office of the Securities and Exchange Commission	1
Director's Briefing: What Director Should Know About Quantum?	Institute of Thai Directors (IOD)	1
Director Certification Program (DCP) #322/2022	Institute of Thai Directors (IOD)	1
Subsidiary Governance Program (SGP) #2/2022	Institute of Thai Directors (IOD)	1
Commercial Risk Management for Power US	Banpu Power Public Company Limited in collaboration with Banpu Power US Corporation	2
How AI and IT application to drive Banpu Business?	Banpu Public Company Limited	9
Board Education: Derivatives Use by Temple I	Banpu Public Company Limited in collaboration with Banpu Power Public Company Limited	3
Decarbonization	Banpu Public Company Limited	10
Cybersecurity Update and Artificial Intelligence	Banpu Public Company Limited	8
Banpu Digital SteerCo - Our Way with Data	Banpu Public Company Limited	2

Sustainability in Performance Evaluation

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 account for 35% of total KPIs. Examples of ESG-related KPIs are employee engagement score, significant corporate governance complaints, cybersecurity incidents, 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, while the CEO evaluates the performance of senior executives.

Example of ESG-related KPIs

Environment	Significant environmental incident
	GHG emissions intensity reduction
	Air emissions intensity (SO_2 NO_x and TSP)
	Water consumption intensity
	Hazardous waste to landfill
	Publication of Climate Change Report
	Establishment of net-zero target
Social	Occupational fatality and injury rate
	Proportion of readiness potential successors
	Corporate citizenships
	Significant complaints (in community, resettlement, human rights, indigenous peoples' rights)
	Level of employee engagement
	Proportion of high critical positions with successor identified
Governance	Significant corporate governance complaints
	Complaints regarding customer privacy and safety & environmental issues from the use of products
	Cybersecurity incident
	Spending on local suppliers

Example of Financial-related KPIs

Performance	Net Profit After Tax: NPAT
	Total Shareholder Return: TSR
	Average IRR spread
	Net D/E
Strategy	Management of renewable assets
	Management of thermal power assets
	Energy generation capability

CEO'S KPI

ESG-related **35%**

Financial-related **65%**
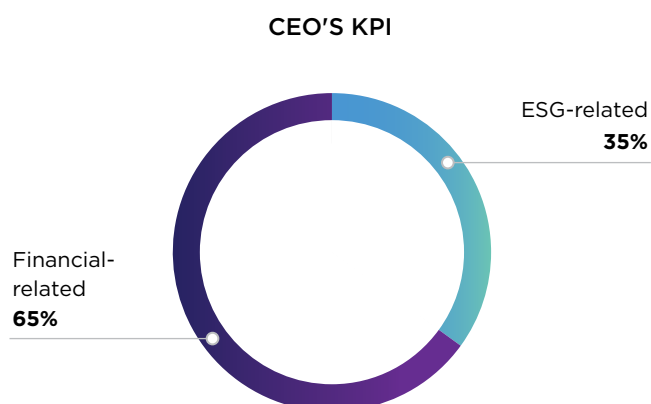
BUSINESS ETHICS

Significance & Commitment

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, the cornerstone of any business operation.

Management Approach

Performance Overview		2022	Target 2022	Target 2025
Number of significant corporate governance complaints	✓	0	0	0
Proportion of significant corporate governance complaints resolved through a dispute mechanism	✓	NA*	100%	100%

* No significant corporate governance complaints

Management Approach

The Company has announced a Corporate Governance Policy and Code of Conduct that aligns 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 Company has regularly reviewed the Corporate Governance Policy and Code of Conduct.

Corporate Governance Principles

Year in Review

The Company had made amendments to the Corporate Governance Policy and the Practices of Board of Director. These amendments specifically address the appointment of the Lead Independent Director. In cases where the Chairman of the Board is not an independent director, the Board of Directors shall promote checks and balances of power and authority by ensuring that the Board of Directors consists of a majority of independent directors and/or appointing a designated independent director to be the Lead Independent Director, who actively participates in setting the board meeting agenda, following the guideline of the CG principle of Thai listed companies set forth by the Securities and Exchange Commission (SEC).

In 2022, the Company focused on promoting employee awareness of corporate governance through the theme "Scale Up Your CG", by collecting CG-related inquiries from employees and effectively communicating the information through video clips and infographics. This approach was chosen for its high impact and engagement potential. Additionally, CG trends and directions were communicated to all employees across the group through internal newsletter "Banpu Synergy".

Grievance mechanism

The Company has established several complaint channels to allow all stakeholders to report complaints related to corporate governance and business ethics. Additionally, the Company has implemented a grievance mechanism to effectively manage and address these complaints. This mechanism ensures that complaints are handled in a timely and appropriate manner.

Whistleblowing

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://portal.banpu.co.th/

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

INVESTIGATE 1
Conduct a full investigation referring the corporate fraud management manual once there is sufficient evidence

INFORM 2
Inform complainant the investigation outcome through appropriate communication channels

ACTION 3
Decide what action to take when the allegation was proven

REPORT 4
Quarterly report to the Corporate Governance and Nomination Committee and annually report to the Board of Directors

CG Day 2022

Annually the Company organizes an event called "CG Day" with the purpose of promoting and fostering the importance of ethical business conduct and commitment to integrity among employees at all levels. In 2022, the working team invited the CEO to participate in this event to further encourage employee awareness of business ethics. Besides, the Company organized a CG quiz competition, in which three teams participated, to assess the extent of CG principle understanding.

CG E-learning and CG E-testing

The Company had developed the CG E-learning and E-testing platform. The E-learning module is utilized to enhance employees' knowledge and promote adherence to the CG Policy and Code of Conduct, while E-testing serves as a tool to assess employees' knowledge and understanding of CG principles. Through these initiatives, the Company aims to foster a strong corporate governance culture throughout the organization.

Corruption Risk Assessment

Each year, the Company conducted an assessment of corruption risk and improved its preventive measures across all businesses within the group, including subsidiaries and joint ventures. The assessment results were reported to the Risk Management Committee. Moreover, the Company consistently communicated with its employees about related policies and practices to combat corruption. For instance, the standard practice for accepting and offering of gift, hospitality or any others similar forms of reward.

DIGITAL TRANSFORMATION

Significance & Commitment

Improvements in productivity and process efficiency are important to the Company since it is directly related to 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.

Management Approach

Performance Overview	2022	Target 2022	Target 2025
Number of use-cases & initiatives	130	-	-
Amount of business impact value (USD million)	118	-	-

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. 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, and initiatives to solve 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.

TECHNOLOGY Innovative
BUSINESS Committed
Banpu Digital Transformation
PEOPLE Passionate
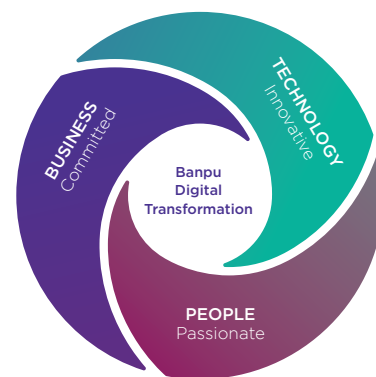
Year in Review

In 2022, in addition to the Banpu Global Innovation Award, which arranges annually, the Company organized the first "Banpu Hackathon" in Thailand to foster a culture of innovation within the organization. This event involved teams of employees working collaboratively to solve specific challenges or develop innovative solutions using digital technologies. Moreover, the Company had a substantial portfolio of 130 ongoing innovation projects. These projects likely encompassed various areas of the Company's operations. The business impact generated from these projects was noteworthy, with a total impact value of USD 118 million.

Acumulated amount of impact value (USD Million)

2018	2019	2020	2021	2022
0	84	127	198	316
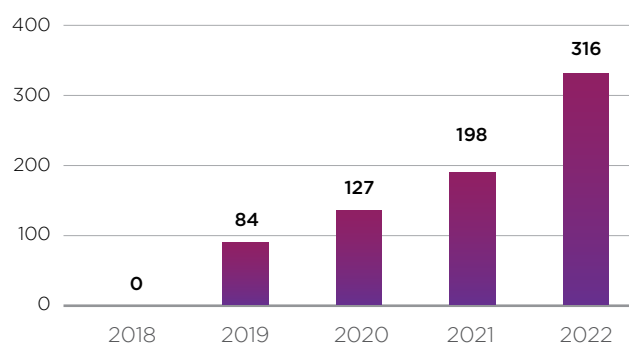
Digital Capability Center

To foster the digital transformation strategy, the Company has established Digital Capability Center (DCC) in 2018 with the following objectives:

- Building awareness and adoption of digital technology by engaging with various partners across the business value chain
- Developing digital skills with training courses and promoting internal innovation in the short-term
- Showcasing the digital transformation journey
- Unlocking business potential with commercialization.

Presently, there are 8 Digital Capability Centers located in Thailand, Australia, Indonesia, and China. These centers serve as hubs for digital transformation activities, collaboration, and knowledge sharing, contributing to the Company's overall digital transformation strategy.

No. of DCC	8 centers
Coverage	4 countries
Duration	5 years (2018-Current)
No. of partners (accumulated)	66 companies

Banpu Digital Academy

To drive digital transformation, the Company has established "Banpu Digital Academy". The key objectives of the academy are to enhance digital awareness among all employees, build their digital capabilities, and raise their "Digital Savvy" competency.

Banpu Digital Academy carries out various activities to drive digital transformation within the organization. One such activity is the Banpu Global Innovation Award, which serves as a corporate knowledge-sharing forum. This platform provides an opportunity for front-line staff in each country to share their use cases and initiatives related to digital transformation. Additionally, the Banpu Hackathon is organized to foster team collaboration and problem-solving using digital technologies. This event allows teams to come together and work on specific challenges using digital tools and techniques.

The curriculum of the Banpu Digital Academy includes an online learning platform and the development of new skill training courses. These initiatives aim to provide employees with the necessary knowledge and skills to thrive in the digital landscape and contribute effectively to the Company's digital transformation journey.

Banpu Global Innovation Award

Participants	727 employees
Coverage	12.7% of FTEs
Project duration	11 years (2012-Current)
Output (annually)	22 projects presented
	14 ideas pitched
Business impact (accumulated)	USD 266 million

Banpu Hackathon

Participants	40 employees
Coverage	1% of FTEs
Project duration	2022
Output	10 ideas pitched

SUPPLIER MANAGEMENT

Significance & Commitment

Supply chain management plays an important role in driving the Company forward as efficient supplier 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.

Management Approach

Performance Overview		2022	Target 2022	Target 2025
Proportion of spending on local suppliers	✓	99%*	>50%	>50%
Proportion of critical tier-1 suppliers assessed for ESG risks	✓	64%*	>20%	100%

* data of mining business in Indonesia only

Management Approach

The Company announced the Sustainable Supply Chain Policy and published the Supplier Code of Conduct, which serves as a guideline for all suppliers to ensure that they operate their business in adherence to ESG principles. The Company's supplier management system is developed based on international standards, such as ISO 20400 Sustainable Procurement, with utilization of digital technology. This is implemented as part of the long-term plan. The plan started with supplier segmentation by considering multipronged information, including procurement value, interdependency, impact on business operations, and risks. This information is analyzed using the Kraljic Matrix method and within the clearly defined criteria. In doing so, the Company can put priority on the strategic supplier. More importantly, the Company supports local procurement by seeking to engage goods and services from local suppliers for all business units.

Sustainable Supply Chain Policy

When the standard is fully implemented, the Company will conduct a preliminary ESG risk assessment on all critical suppliers before the procurement process starts. 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.

Supplier Code of Conduct

Kraljic Matrix

Leverage	Strategic
Non-critical	Bottleneck

Profitability (vertical axis) — Risk (horizontal axis)
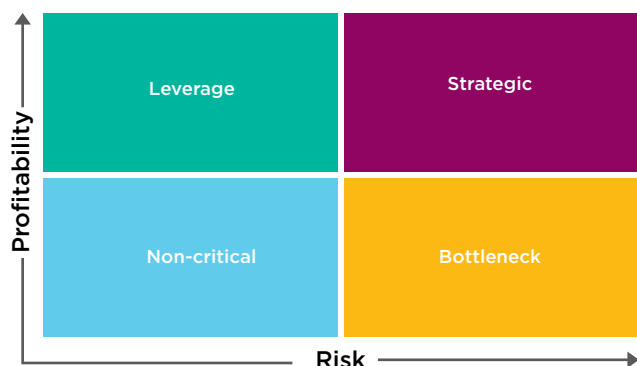
Year in Review

In 2022, the Company completed supplier segmentation following the Kraljic Matrix method for thermal power and renewable power businesses in China. Moreover, the global database system for strategic decision making were completely developed and will implement, starting in Thailand from 2023 onwards.

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 own ESG performance. Centennial then evaluates and gives each candidate a score based on the actual performance and supporting evidence before finalizing the selection process.

ESG integration in supplier selection

Technical/R&D
4%

Administration
4%

Health, safety and environment
30%

Facilities/Equipment
13%

Quality
6%

Resource
7%

Financial
8%

Improvement
8%

Communication
8%

Human resource and employee relations
12%
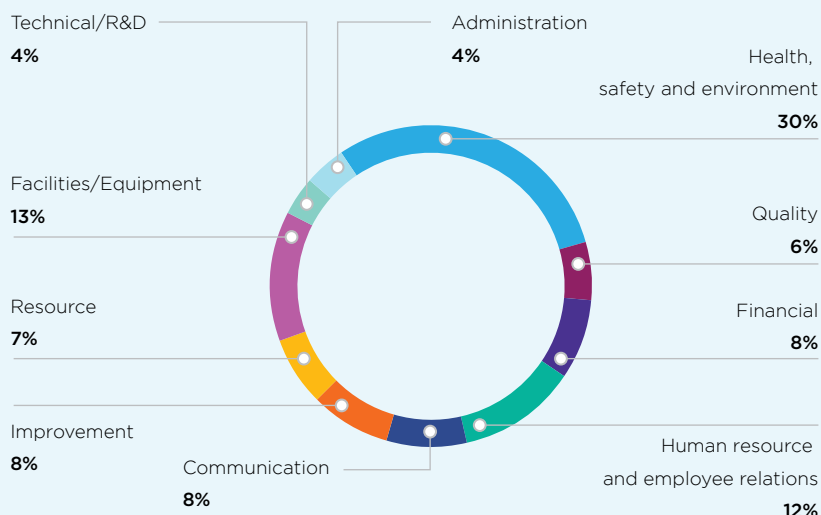
Spending Analysis

The spending analysis has been performed in each country. From history records, 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.

Spending analysis mining business in Indonesia

Mine rehabilitation contractor
5%

Fuel and lubricant
5%

Hauling contractor
9%

Others
18%

Mining contractor
63%
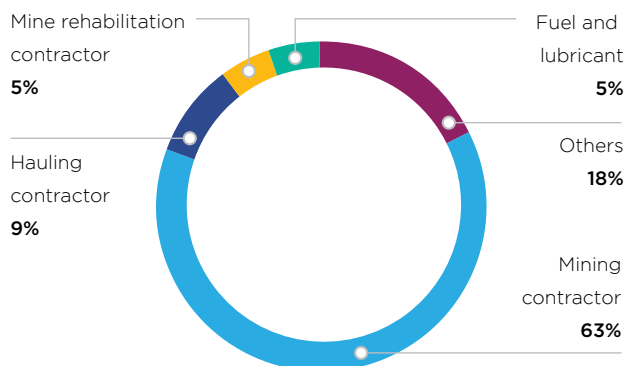
Spending analysis power business in China

Others
15%

Coal
77%

Project works
8%
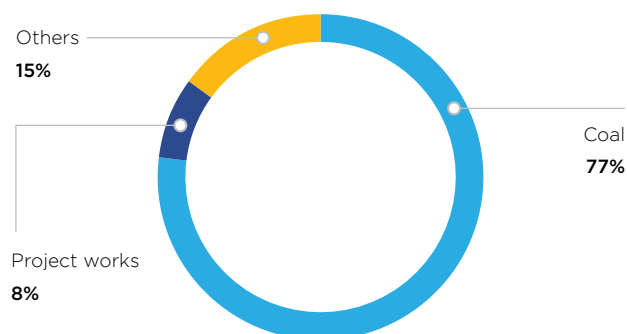
CUSTOMER MANAGEMENT

Significance & Commitment

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

Management Approach

Performance Overview		2022	Target 2022	Target 2025
Customer satisfaction rate	✓	100%*	>90%	>90%
Coverage of customers surveyed	✓	100%*	>90%	>90%
Number of complaints regarding customer privacy	✓	0	0	0
Number of complaints regarding safety and environmental issues from the use of products	✓	0	0	0

* Includes data of thermal power business in China only

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.

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. Moreover, 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.

Year in Review

In 2022, the Company can maintain a good performance in customer & product stewardship. The customer satisfaction survey was conducted at all thermal power plants in China with a satisfaction level at 100%. In addition, 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.

Customer Satisfaction Management

While the customer satisfaction survey is regularly conducted, there are various approaches 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	• Customer satisfaction survey • Regular customer site visits • Technical supports
Renewable power	• Knowledge sharing sessions • Performance reports
Solar rooftop	• Customer satisfaction survey • Technical supports • Returns on investment evaluation • 24-hour customer services

Customer satisfaction survey in China

The 3 CHP plants in China operated by Banpu Power (BPP) demonstrated their ability to meet the demand of customers, both from the public and private sectors, despite the challenges posed by the COVID-19 outbreak. These plants maintained their availability factor in accordance with customer requirements, ensuring a consistent production of power and energy. In 2022, one of the key operations carried out by BPP was conducting a customer satisfaction survey with its 54 industrial customers, who are the primary purchasers of their products. The survey aimed to assess the satisfaction levels of these customers and gather feedback on BPP's performance. The survey results for 3 CHP plants in China were highly satisfied with the services and products provided.

Survey coverage:	100%
Response rate:	100%
Customer satisfaction:	100%

ECONOMIC DISTRIBUTION

8 DECENT WORK AND ECONOMIC GROWTH

Significance & Commitment

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.

Management Approach

Performance Overview		2022	Target 2022	Target 2025
The ratio of the dividend payout to net profits	❌	21%	≥ 50%	≥ 50%

Management Approach

The Company aims to share wealth with 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.

Year in Review

In 2022, total sales revenue was USD 7,635 million and the Company paid dividends to shareholders in the amount of USD 135 million, which was below the target. However, the Company maintained economic value distributed among all key stakeholders with details as follows:

Economic value generated

Other revenues: 576 (+302)
Sales: 7,059 (+3,328)

Economic value distributed to stakeholders

Dividends — Shareholder: 135 (+79)
Operating costs[a] — Supplier & contractor: 1,679 (+317)
Employee expense[b] — Employee: 400 (+20)
Financial costs[c] — Financial institution: 265 (+98)
Payments to government[d] — Government: 1,177 (+681)
Community & social investments[e] — Community: 9 (+4)

Economic value retained

3,969 (+2,129)

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

Tax Management

Being a good corporate citizen in every country where it operates is the Company's top priority. In addition to compliance with applicable laws and regulations, the Company demonstrates its commitment to transparency through the disclosure of tax payments. Moreover, the transfer price for intra-group service transactions is based on transparency and fairness for the benefit of the host countries.

Tax Management Approach

Transfer Pricing Guidebook

Corporate Community and Social Investment

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

Proportion of contribution - by objective

Commercial intiatives
5%

Donations to charity
26%

Community investment
69%

Proportion of contribution - by type

In-kind giving
3%

Management overhead
18%

Time provided by volunteer staff
3%
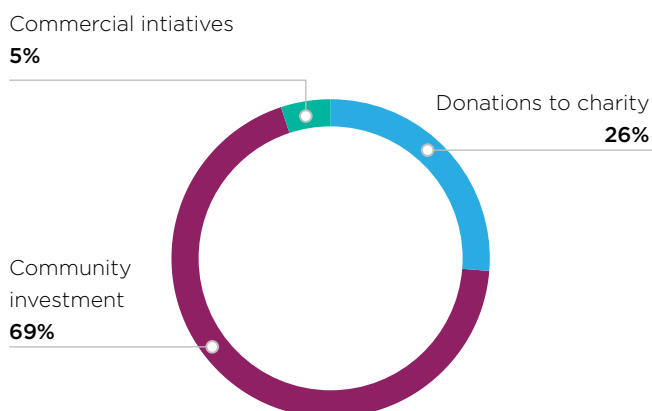
Cash contribution
76%
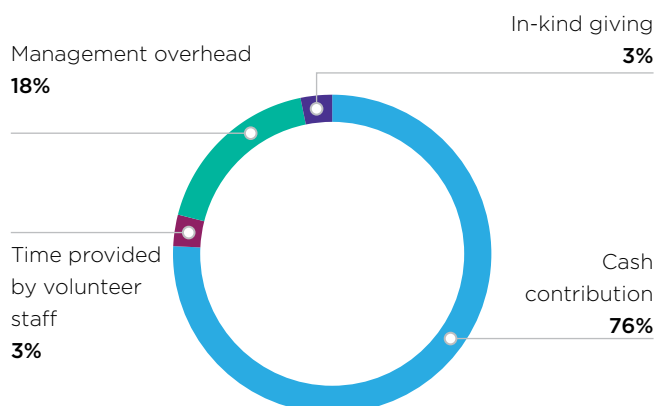
Proportion of community investment

Environmental conservation
2%

Health and sanitation development
17%

Economic development & income generation
24%

Education development
18%

Infrastructure development
7%

Social & cultural promotion
32%
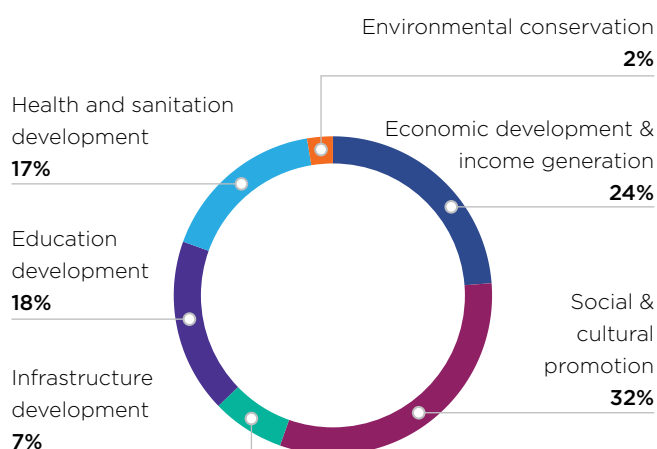
RELIABILITY OF POWER PLANTS

Significance & Commitment

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.

Management Approach

Performance Overview		2022	Target 2022	Target 2025
Availability factor*	✓	94%	≥ 90%	≥ 90%
Unplanned outage factor*	✓	0.82%	<5%	<5%

* Includes 3 combined heat and power plants in China only

Significance & Commitment

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.

Year in Review

In 2022, the Company can maintain excellent performance in both efficiency and reliability. The average availability factor of 94% surpassed the target of 90%, indicating that the plants were able to operate and provide power consistently. The overall efficiency of 79.78% demonstrates that the plants efficiently used the natural resources. In addition, the unplanned outage factor of 0.82% indicates the reliability of the plants, as they were able to minimize unexpected interruptions to the power generation process.

Overall efficiency

2019: 65.07%
2020: 74.70%
2021: 77.47%
2022: 79.78%

Availability factor

2019: 94.07%
2020: 97.72%
2021: 95.05%
2022: 94.00%
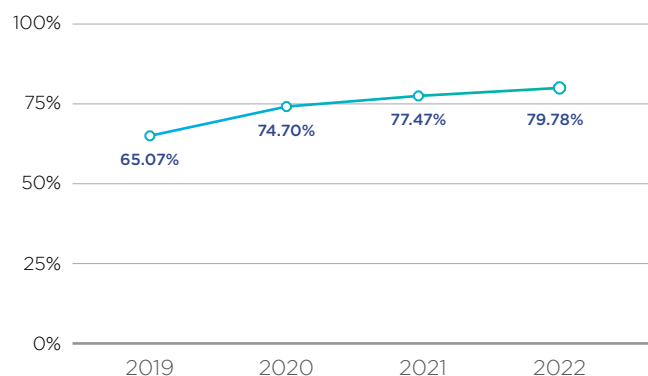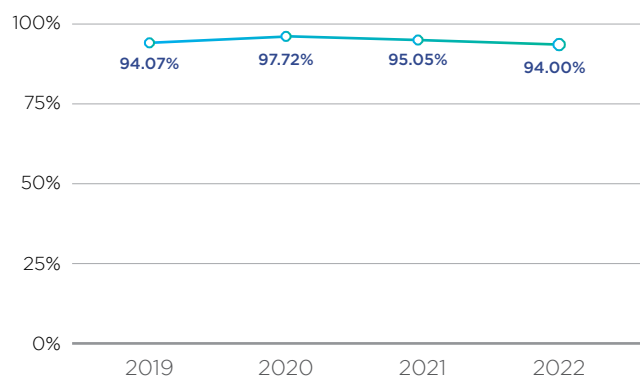
BUSINESS CONTINUITY

Significance & Commitment

The environment in which business is conducted could experience a disruption resulting 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.

Management Approach

Performance Overview		2022	Target 2022	Target 2025
Coverage of CMT/IMT exercise	❌	42%	≥71%	100%
Coverage of BCP exercise for critical business functions	❌	11%	≥12%	≥64%

Management Approach

The Company's business continuity management system was developed based on the international standards such as ISO 22301:2019 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 - Crisis Management Team (CMT), country level - Incident Management Team (IMT), site level - Emergency Management Team (EMT), and front-line level - Emergency Response Team (ERT). The BCP exercises at each level are carried out regularly.

Business Continuity Policy

Moreover, additional supporting teams such as Crisis Communication Team (CCT), Disaster Recovery Team (DRT), and Relative Response Team (RRT) have also been appointed. The system performance is then reviewed annually through internal audits and management reviews.

Year in Review

In 2022, the annual BCP exercise was conducted at the corporate level at the head office in Thailand. Furthermore, at the country level, BCP exercises were conducted for the Company's subsidiaries in China and Australia. Additionally, the Company underwent an upgrade from ISO 22301:2012 to the latest version, ISO 22301:2019, for both the head office and related businesses in Thailand, as well as the subsidiaries in China.

COMPLIANCE

Significance & Commitment

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

Management Approach

Performance Summary		2022	Target 2022	Target 2025
Significant socioeconomic non-compliance				
• **Number of significant fines**	✓	0	0	0
• **Number of significant non-monetary sanctions**	✓	0	0	0
Significant environmental non-compliance				
• **Number of significant fines**	✓	0	0	0
• **Number of significant non-monetary sanctions**	✓	0	0	0

Management Approach

The corporate compliance management system has been developed based on ISO19600. Compliance status is reported 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 the business with real-time monitoring of compliance risks and status. Moreover, verification by an independent certification body is also performed.

Year in Review

In 2022, the Company had neither significant fines nor non-monetary sanctions from both socioeconomic and environmental non-compliance in all business units.

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	10	10	9	4
Thermal power	3	3	3	3
Renewable power	28	27**	-	-

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

DATA PRIVACY & CYBERSECURITY

Significance & Commitment

Due to digitalization, information technology has been evolving to facilitate cloud storage. On the other hand, the risk of cybersecurity threats 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.

Management Approach

Performance Summary		2022	Target 2022	Target 2025
Number of cybersecurity breaches		1	-	-
Number of IT infrastructure incidents		1	-	-
Percentage of IT and IoT assets securely managed by Security Operation Center (SOC)	✓	60%	>60%	>90%

Management Approach

The Company announced the Information and Cybersecurity Policy based on the ISO/IEC 27001 framework. By integrating cybersecurity management into enterprise risk management under the supervision of the Audit Committee. Leaks of customer data and cyber-attack are considered as one of emerging risks. To ensure that cybersecurity is effectively managed, Global Information Security Officer (GISO) has been appointed to lead the data privacy and cybersecurity governance across the group. To ensure privacy and the protection of all information, the privacy policy is introduced as a framework in defining the purpose of data collection, disclosure of information, and security of personal data.

Year in Review

In 2022, the Company experienced one IT infrastructure incident. In January, there was an incident caused by a prolonged power outage in the building resulting in damage to some equipment, which is a backup device. However, the device was no longer in use as the application had already been transferred to cloud computing.

In addition, the Company encountered a cybersecurity breach in February involving a Ransomware attack from an affiliate located aboard. Upon receiving a warning from the Security Operation Center (SOC) system, the Company promptly disconnected the network to limit the spread of the Ransomware. Although some partial function applications were affected, no data was corrupted or leaked. The Company successfully recovered the system to normal operation using the backup system.

RISK MANAGEMENT

Significance & Commitment

The business environment undergoes volatility and uncertainty situations. Paying close attention to effective risk management not only prevents any possible adverse impacts on the business but also enhances the business opportunities, leading to long-term value creation for the Company.

Management Approach

Performance Overview		2022	Target 2022	Target 2025
Coverage of ESG issues in the enterprise risk management	✖	95%	>98%	100%

Management Approach

The Company's group-wide risk management is under the supervision of the Board of Directors through the Audit Committee, the Risk Management Committee, and the Environmental, Social, and Governance (ESG) Committee, which monitor risks and performance according to the risk mitigation plan in all business units. The Enterprise Risk Management department quarterly reports risk management performance review to the Audit Committee, the Risk Management Committee, the ESG Committee, and the Board of Directors to ensure that key and emerging risks are within risk appetite, thus reducing risk likelihood and potential impacts.

Management of Emerging Risks

	Technological advancement risk	Supply Chain risk
Description	Global trends in technological advancement in energy industry as well as increased awareness of energy transition towards low carbon society contribute to the alternative energy promotion by the government sector and the technological development by the private sector could disrupt the Company's business.	Geopolitical conflicts, nationalist policies, recession, and fluctuations in foreign exchange and interest rates can lead to unexpected changes in laws, taxation, embargoes, and strict law enforcement, which could jeopardize the Company's supply chain.
Impact	• Increased capital expenditure/ operating cost. • Potential business disruption from emerging lower-carbon technology.	• Increased capital expenditure/ operating cost. • Suspended operations or business interruption.
Mitigation action	• Restructuring the Company's portfolio by shifting from conventional energy to greener & smarter energy. • Implementing digital transformation. • Deploying high-efficiency, low-emissions technologies in the production process. • Strengthening employees' skills and knowledge in energy and digital technologies.	• Utilizing digital technology for supplier management with alignment to international standards, such as ISO 20400. • Developing an early warning system and preparing recovery plans for possible disruption. • Implementing business continuity management to align with international standard ISO 22301. • Conducting supplier audits at critical suppliers annually.

Year in Review

In the review of long-term ESG risks and risk responses, 3 ESG risks were identified as high priority: Human capital capability, Cybersecurity & personal data protection, and Climate change and 2 emerging risks were identified: Technological advancement and Supply chain risks. Even though the mitigation actions for all of those risks are developed, only 95% of ESG issues are covered in the enterprise risk management framework.

ESG Risk Management

	Social	Economics	Environment
	Human capital capability	**Cybersecurity & personal data protection**	**Climate change**
Risk appetite	• Commit to maintaining a sufficient leadership pipeline for all N-1 and critical N-2 positions. • Commit to maintaining and deploying a highly motivated, diverse, talented, and empowered workforce to ensure alignment with business direction. • Strive to develop a global career track towards opportunities across countries.	• Commit to providing safe and reliable IT systems and processes, ensuring the protection of information, as well as compliance with applicable laws and regulations. • Commit to ensuring adequate security controls following the international information security standard to ensure the confidence of interested parties.	• Commit to managing the transition and physical climate-related risks, both current and future scenarios, and managing the risks and opportunities associated with the strategic commitment to achieve the net-zero target as planned.
Likelihood	Medium	High	High
Impact	High	High	High
Mitigation action	• Review the organizational structure and conduct workforce analysis. • Formulate the training & development policy with 5% of salary budget allocation. • Develop corporate learning and development framework to fill competency gaps across the organization. • Strengthen specific skills for key professional positions. • Cultivate a growth mindset and digital capabilities for the fast-changing working environment. • Utilize the Success Factor system for succession planning of critical roles.	• Announce the Information and Cybersecurity Policy and educate employees on cyber threats. • Appoint a Global Information Security Officer (GISO) to oversee the management of cybersecurity and PDPA. • Raise employees' awareness of cybersecurity threats via various communication channels. • Obtain ISO 27001 certification for information security management systems (ISMS) • Formulate a PDPA policy that explicitly ensures the personal data privacy of related stakeholders.	• Establish a decarbonization working team to set up policies, goals, and strategies. • Set up the Climate Change Committee to monitor changes in related policies and regulations. • Embed climate change management as one of the KPIs for the CEO and senior management in all relevant business units. • Disclose related information to stakeholders following the TCFD framework. • Develop Carbon Capture, Utilization, and Storage (CCUS) project for a gas business in the U.S.

ENVIRON-MENT

PERFORMANCE HIGHLIGHT

		2022	Target 2022	Target 2025
CO_2	**GHG emissions intensity**			
	• Mining business	✓ 0.136	≤0.140	≤0.137
	• Power business	✓ 0.542	≤0.620	≤0.540
	GHG emissions intensity reduction			
	• Mining business	✓ -3%	-2%	-7%
	• Power business	✓ -13%	-8%	-20%
	Energy consumption intensity			
	• Mining business	✗ 0.47	≤0.442	≤0.428
	• Thermal power business	✓ 0.95	≤1.55	≤1.55
	Air emissions intensity (SO_2)			
	• Mining business	✓ 25.52	≤30	≤30
	• Thermal power business	✓ 21.81	≤76.6	≤76.6
	Hazardous waste to landfill	✗ 78.21	0	0
	Non-hazardous waste direct to disposal			
	• Mining business	✗ 0.244	≤0.140	-
	• Thermal power business	✓ 0.120	≤0.130	-
	Business units assessed for potential biodiversity impact	✗ 88%	100%	100%
	Business units assessed for biodiversity value	✓ 100%	100%	100%
	Water consumption intensity			
	• Mining business	✗ 1.260	≤0.144	-
	• Thermal power business	✓ 0.818	≤0.868	≤0.868
	Progress of subsidence management activities against plan	✓ 100%	≥90%	≥90%

GHG EMISSIONS

Significance & Commitment

Climate change presents a significant concern for all stakeholders. Collaboration across countries to prevent further increases in the average global temperature by controlling GHG emissions through rigorously 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.

Management Approach

Performance Overview		2022	Target 2022	Target 2025
GHG emissions intensity reduction*				
• **Mining business**	✓	-3%	-2%	-7%
• **Power business**	✓	-13%	-8%	-20%
GHG emissions intensity**				
• **Mining business (tonne CO_2e/tonne coal)**	✓	0.136	≤0.140	≤0.137
• **Power business (tonne CO_2e/MWh)**	✓	0.542	≤0.620	≤0.540

* Against the business-as-usual (BAU)

** Target calculated from the BAU as of December 2019

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 implementation of climate change management strategy focusing on 4 measures – Mitigating emissions, Being adaptive, Being a part in a low carbon society, and Participation in a climate change community.

Climate Change Policy

Year in Review

The Company has established a Task Force on Climate-related Financial Disclosures (TCFD) working group to take manage and disclose relevant information regarding the financial implication of climate-related risks and opportunities as well as mitigation measures. The first Climate Change report was also published. In addition, The Company has studied for the new long-term GHG reduction targets and management strategy aligned with the TCFD framework. Furthermore, the Company started collecting data related to assessing other indirect GHG emissions: Scope 3.

Long-term Targets and Progress

Mining business

The GHG emissions intensity was 0.136 tonnes CO_2e/tonne finished coal, which was achieved the target. The emissions decreased by 3% compared to the business-as-usual (BAU).

Power business

The GHG emission intensity was 0.542 tonnes CO_2e/MWh, which was met the target. The emissions decreased by 13% compared to the BAU. This reduction was the result of the Company's proactive approach in seeking opportunities to increase the proportion of total electricity generation from renewable energy by 40% from the previous year.

GHG emissions intensity - mining business (tonnes CO_2e/tonne coal)

	2018	2019	2020	2021	2022
	0.146	0.126	0.115	0.129	0.136

Scope 1
Scope 2
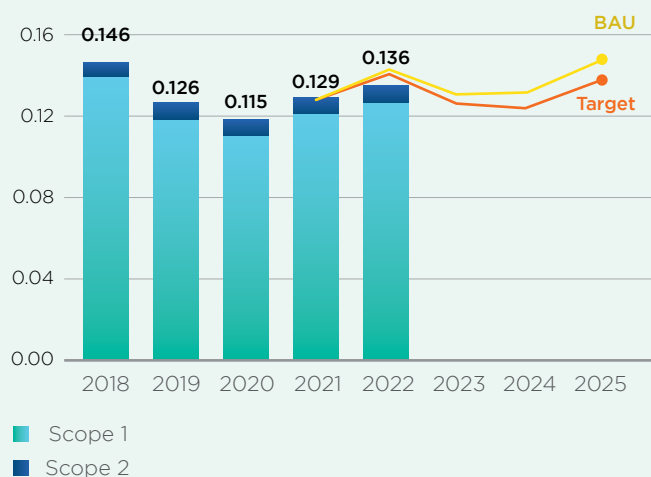
GHG emissions intensity - power business (tonnes CO_2e/MWh)

	2018	2019	2020	2021	2022
	0.613	0.644	0.590	0.555	0.542
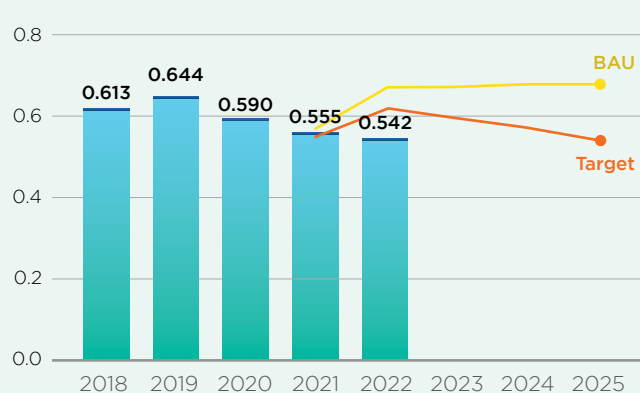
Study of Using Biomass at Captive Power Plant in Indonesia

Indominco mine has undertaken a feasibility study to explore the use of biomass fuel, specifically wood pallets from local plant species found in surrounding mine area. The study revealed that biomass fuel has a heating value of 4,900 kcal/kg which is suitable for use as fuel in the captive coal-fired power plant and could reduce GHG emissions by 11%.

Emissions Sources

The Company has identified the sources of GHG emissions for each business. The analysis covers GHG emissions Scope 1 and Scope 2.

Business	Key activity	GHG source (Scope 1)											GHG source (Scope 2)
		Diesel	Biodiesel	Gasoline	Coal	Methane	Explosive	HFCs	SF_6	$CaCO_3$	Waste gas	Natural 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	•	•										

REC Implementation in Thailand

Banpu NEXT, one of subsidiaries in Thailand, has obtained certification for Renewable Energy Certificate (REC) which is accredited by Electricity Generating Authority of Thailand (EGAT). This certification allows Banpu NEXT to support producers and consumers to claiming the production and consumption of electricity from renewable energy sources. The REC program enables the purchase and sale of renewable energy generation certificates, providing opportunity to generate additional income from selling these certificates to investors. In 2022, Banpu NEXT certified 4,910.25 REC (1 REC equal to 1 MWh) from solar rooftops and planned to continue for certification further.

Indirect GHG (Scope 3) Emissions

The Company has improved the category of concerned for other indirect GHG emissions (Scope 3) at 5 key businesses according to the technical guidance for calculating scope 3 emissions guideline (version 1.0). The business activities relating to GHG emissions (Scope 3) were identified as follows;

Category	Business				
	Mining	Gas	Thermal power	Renewable power	Solar rooftop
1. Purchased goods and services	✗	✗	✓	✗	✗
2. Capital goods	✗	✗	✓ (a)	✓	✓
3. Fuel- and energy-related activities beyond scope 1 and 2	✓	✓	✓	✓	✓
4. Upstream transportation and distribution	✗	✗	✓ (b)	✓	✓
5. Waste generated in operations	✓	✓	✓	✓	✓
6. Business travel	✓	✓	✓	✓	✓
7. Employee commuting	✓	✓	✓	✓	✓
8. Upstream leased assets	✗	✗	✗	✗	✗
9. Downstream transportation and distribution	✓	✓	✓	✓	✓
10. Processing of sold products	✗	✗	✗	✗	✗
11. Use of sold products	✓	✓	✗	✗	✗
12. End-of-life treatment of sold products	✗	✗	✗	✓	✓
13. Downstream leased assets	✗	✗	✗	✗	✗
14. Franchises	✗	✗	✗	✗	✗
15. Investments	✓	✗	✓	✓	✓

(a) Considered together with category 1
(b) Considered together with category 3

The Company has disclosed GHG emissions (Scope 3) since 2019, with scope covering only the use of sold products from mining business. Currently, the relevance is under full review as well as the data collection system is being developed to ensure coverage across all businesses.

Climate-related Risks and Opportunities

In 2022, the Company released its first Climate Change report. In the report, risks and opportunities assessment results related to climate change are identified.

	Risk & opportunity	Short-term	Long-term
Transition risk	Regulatory changes	🔴	🔴
	Carbon technology investment	🟡	🔴
	Change of energy consumption behavior	🟡	🔴
	Ban on fossil fuels	🟡	🟡
Physical risk	Change in precipitation patterns	🔴	🔴
	Change in frequency & severity of natural disasters	🟡	🔴

ENERGY

Significance & Commitment

Energy is one of the key factors which drive 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.

Management Approach

Performance Overview		2022	Target 2022	Target 2025
Energy consumption intensity				
• Mining business (GJ/tonne coal)	❌	0.47	<0.442	<0.428
• Thermal power business (GJ/MWh)	✅	0.95	<1.55	<1.55
• Renewable power business (GJ/MWh)		2.70	-	-

Management Approach

Energy consumption patterns in a particular business could be different from the others, such as mining in Indonesia is open-pit while mining in Australia is carried out underground. This leads to different energy conservation activities as follows:

• Open-pit mining business: The energy conservation projects focus on improving the energy efficiency of these transportation systems, for example, change of haul trucks to conveyor belts, improvement of transportation routes for maximum efficiency of fuel consumption, etc.

• Underground mining business: 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: The Company 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: The Company places emphasis upon the proper traveling plan to maximize fuel consumption efficiency.

Year in Review

The Company has been proactive in driving energy efficiency and exploring alternative fuel sources. Some of the initiatives included the trial use of biodiesel B35 in Indonesia. While, in China, the efficiency improvement project and waste gas heat recovery project aiming to reduce energy loss resulted in a reduction in energy consumption intensity by 20% compared to the previous year.

Targets and Progress

Mining business

The Company experienced a slightly increase in energy consumption intensity when compared to the target, with a rate of 0.47 GJ/tonne finished coal. The key factor contributing to this increase was the higher fuel consumption associated with the revise of mine plan.

Thermal power business

The energy consumption intensity decreased to 0.95 GJ/MWh, representing a 20% reduction compared to the previous year. This improvement can be attributed to the successful implantation of the boiler performance improvement project and waste gas heat recovery project.

Energy consumption intensity - mining business (GJ/tonne coal)

Year	Value
2018	0.47
2019	0.54
2020	0.42
2021	0.44
2022	0.47 (Target)
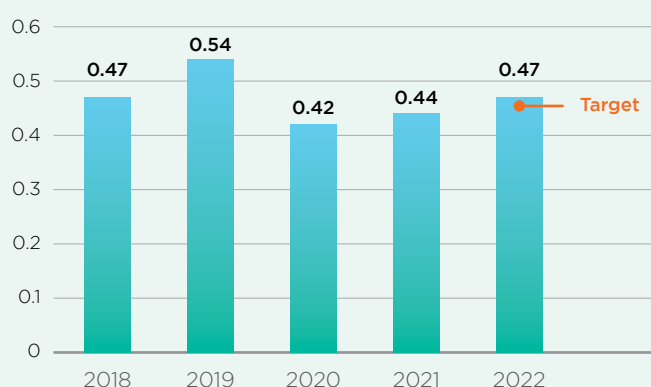
Energy consumption intensity - thermal power business (GJ/MWh)

Year	Value
2018	1.78
2019	1.96
2020	1.53
2021	1.19
2022	0.95
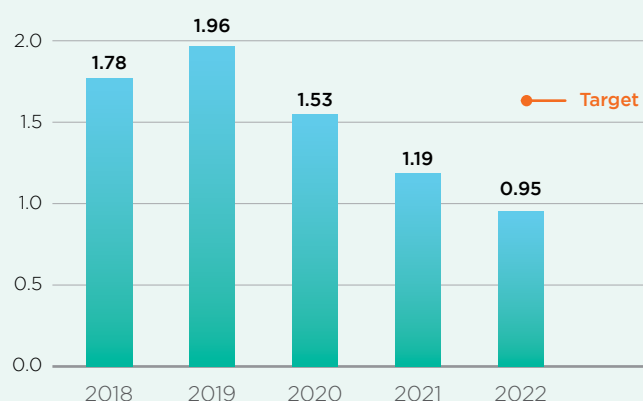
Boiler Performance Improvement in China

The cause analysis and main equipment inspection at Zhengding power plant identified an issue with boiler#4, which was unable to meet the requirements for large load operation due to insufficient heat exchanger capacity. To address this issue, Zhengding has improved boiler performance by increasing the heat exchange surface, as well as increasing fly ash recycle rate and enhancing heat transfer intensity of flue gas combustion. In this regard, boiler load capacity increased by 5-10 t/h and energy loss in power generation process was reduced by 10% from the previous year.

Budget	USD 77,571
Business impact	USD 1.086 million

AIR EMISSIONS

Significance & Commitment

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. Laws have been updated to enforce more rigorous compliance. The Company is therefore committed to developing air pollution control technology and scaling up its activities in all countries where the Company operates, to ensure business growth alongside wellbeing of the community and society.

Management Approach

Performance Overview		2022	Target 2022	Target 2025
SO_2 emissions intensity - Mining business (g/tonne coal)*	✓	25.52	≤30	≤30
SO_2 emissions intensity - Thermal power business (g/MWh)**	✓	21.81	≤76.6	≤76.6
NO_x emissions intensity - Thermal power business (g/MWh)**	✓	37.90	≤118.4	≤118.4
TSP emissions intensity- Thermal power business (g/MWh)**	✓	2.56	≤23.0	≤23.0

* nonpoint source
** point source

Management Approach

In mining business, the Company prevents and reduces emissions by conducting regular maintenance of electricity generators to ensure complete combustion. Pollution control is prioritized at the source by various practices such as using conveyors instead of trucks for coal transportation, applying water spraying on roads and coal stockpile areas, regular maintenance of motor vehicles, and limiting the speed of vehicles in mining areas. Additionally, the Company engages external parties to conduct ambient air quality monitoring, both in the mining areas and surrounding communities. The results are used to calculate the total emissions load.

In the thermal power business, the Company has placed emphasis on preventing pollutants at their sources through engineering control, such as circulating fluidized beds, as well as deploying state-of-the-art technologies on the air quality control system, including sulfur dioxide and nitrogen oxides trapping at stacks and electrostatic precipitators for dust trapping. Continuous emission monitoring systems are installed at stacks and in surrounding communities to ensure that the air quality always meets regulatory limits.

Year in Review

In 2022, one of the thermal power plants in China changed its De-NO_x catalyst to ensure that the air released to the atmosphere meets standards. Meanwhile, an online dust monitoring system was installed at mine sites in Indonesia to continuously monitor the dust levels in the areas and allow for better planning of water spaying to improve the efficiency of dust control and prevent any potential complaint from adjacent communities.

Long-term Targets and Progress

The specific air emission targets for both point source and nonpoint source have been set for 2021-2025. For mining business, target for SO_2 emissions intensity (nonpoint source) is set at 30 g/tonne. Meanwhile, SO_2, NO_x and TSP emission (point source) targets are set at 76.6, 118.4 and 23.0 g/MWh, respectively for thermal power business.

In 2022, both mining and thermal power businesses achieved their air emission targets. Additionally, the Company measured mercury emissions from thermal power plants and the results showed significantly low levels at 0.0014 g/MWh. This indicates a very minimal impact on the environment. Owing to strict measures of air emission control, the air emission intensity performance of the Company has been stable and complies with laws and regulations as well as extremely low compared to the targets.

Air emissions intensity - mining business (g/tonne coal)

	2018	2019	2020	2021	2022	
	19.00	63.01	39.22	49.47	27.21	NO_x
			22.15	24.56	25.52	SO_2 (NPS)*
	10.80	13.19	8.45	12.53	15.83	TSP
	5.00	5.55	0	5.06	6.89	SO_2 (PS)
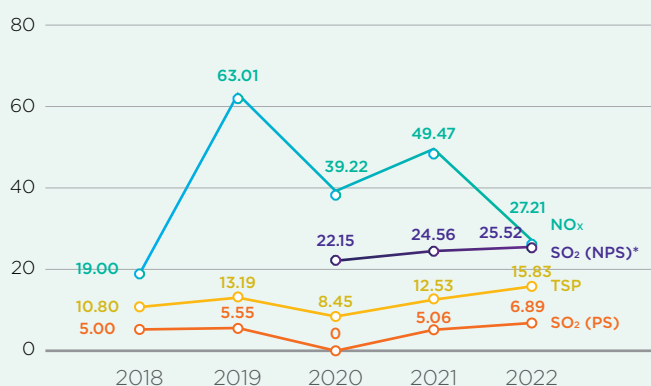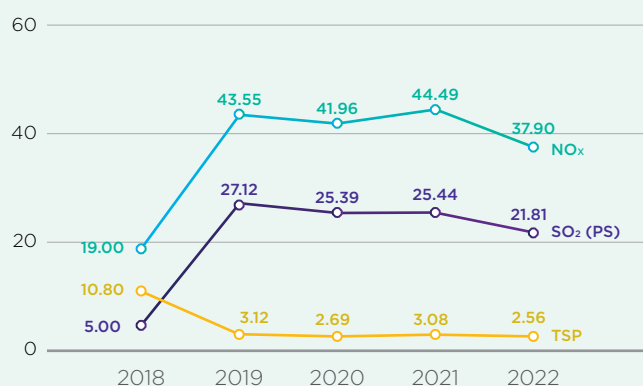
PS = point source
NPS = nonpoint source
* Start to report SO_2 emissions (nonpoint source) since 2020.

Air emissions intensity - thermal power business (g/MWh)

	2018	2019	2020	2021	2022	
	19.00	43.55	41.96	44.49	37.90	NO_x
	10.80	27.12	25.39	25.44	21.81	SO_2 (PS)
	5.00	3.12	2.69	3.08	2.56	TSP

Preventive Measures at Thermal Power Plants in China

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, 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.

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)

WASTE

Significance & Commitment

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. The Company recognizes the importance of waste management and strictly complies with laws and regulations of each country where it operates.

Management Approach

Performance Overview		2022	Target 2022	Target 2025
Hazardous waste to landfill (tonne)	❌	78.21	0	0
Hazardous waste directed to disposal				
• Mining business (tonne)		241.58	-	-
• Thermal Power business (tonne)	❌	26.05	≤6	≤210
Hazardous waste directed to disposal intensity				
• Mining business (kg/tonne finished coal)	✓	0.01	≤0.01	-
• Thermal Power business (kg/MWh)		0.004	-	-

Management Approach

The Company adheres to waste management hierarchy which includes preventive & minimization, reuse, recycling, and other recovery to lessen the environmental impacts of waste disposal. The Company has developed the waste management standard in compliance with international practices as well as laws and regulations of each country.

Waste Management Policy

1 Prevention & Minimization

2 Reuse

3 Recycling

4 Other Recovery
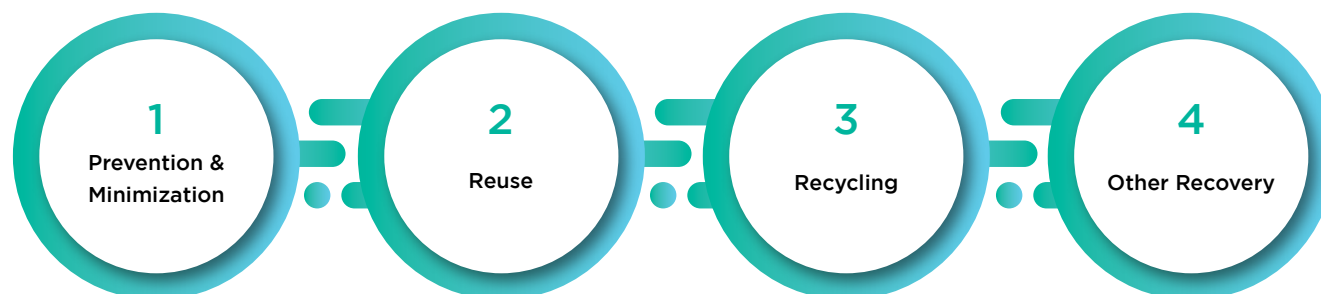
Additionally, the Company has analyzed waste flow across value chain to illustrate the overall waste generation and management as well as be utilized as a reference for monitoring waste management. The waste management data has been systematically collected. For instance, internal waste management volumes are measured. While, external waste management volumes are recorded in waste report provided by external parties.

Year in Review

In 2022, the Company has recycled material to be alternative fuel in boilers which can reduce waste to landfill and diminish coal consumption. In addition, the Company has developed waste flow diagrams for mining business in Indonesia and power business in China which can be used for internal waste management.

Targets and Progress

Waste management targets of hazardous and non-hazardous wastes have been established covering 2021-2025. In mining business, hazardous waste directed to disposal intensity should be less than or equal to 0.01 kg/tonne coal. On the contrary, hazardous waste directed to disposal of thermal power business should be less than or equal to 6 tonnes in 2022 as well as less than or equal to 210 tonnes in 2023-2025 respectively.

In 2022, hazardous waste directed to disposal of mining business achieved the target. Whereas, hazardous waste directed to disposal of thermal power business was beyond the target due to De-NO_X catalyst landfilled by an authorized external party.

Waste directed to disposal intensity - mining business (kg/tonne coal)

	2018	2019	2020	2021	2022
Non-hazardous waste	0.078	0.096	0.139	0.162	0.244
Hazardous waste	0.017	0.004	0.010	0.012	0.010

Waste directed to disposal intensity - thermal power business (kg/MWh)

	2018	2019	2020	2021	2022
Non-hazardous waste	0.252	0.162	0.101	0.131	0.120
Hazardous waste	0	0.001	0.001	0	0.004
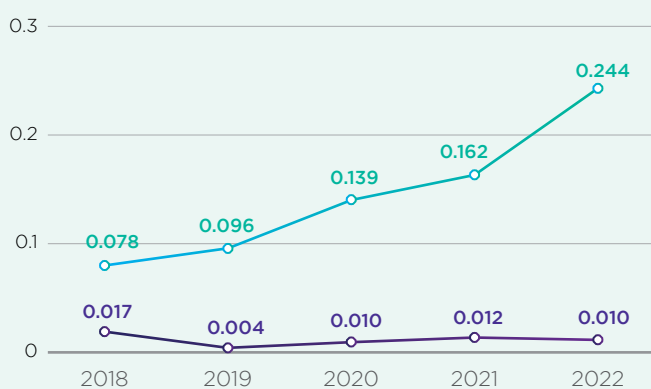
- Hazardous waste
- Non-hazardous waste
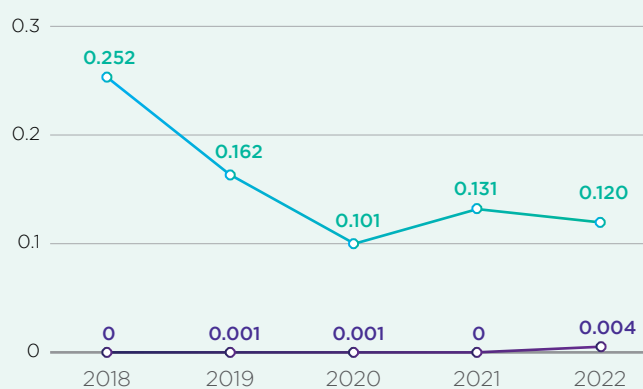
Minimize Waste to Landfill by Reusing as Alternative Fuel in China

In 2021, the rising coal price broke through historical record, and low-price coal could not be purchased in local market in China. To pursue this challenge, Zouping power plant looked for an opportunity to use non-coal fuel as raw materials in the power plant and found that characteristics and prices of some industrial wastes such as activated carbon in Zouping area are appropriate for burning. Trial burning of mixed coal and solid waste was conducted in a boiler to find appropriate types and amounts of solid wastes as well as blending ratios before extending to all boilers for mixed combustion test.

This conserved raw coal from burning and facilitated activated carbon disposal 9,337 tons in 2022. Moreover, in terms of social benefit, this enhanced customer satisfaction owing to positive contribution to guarantee the heat and power supply at high coal price condition as well as improved community satisfaction from facilitating industrial waste management, especially activated carbon in the area. Apart from those, the Company also earned economic benefit from saving coal burning cost and additional income from fly ash selling due to increasing of fly ash yield USD 5,775,468 as well as increased business agility and flexibility on high coal price situation.

BIODIVERSITY

Significance & Commitment

The Company understands that certain types of business operations, such as open-pit mining, can affect ecosystems and biodiversity. Therefore, it is one of the Company's priorities to manage those impacts by seeking to minimize the risk of creating a negative impact associated with biodiversity.

Management Approach

Performance Overview		2022	Target 2022	Target 2025
Proportion of business units assessed for potential biodiversity impact	✖	88%	100%	100%
Proportion of business units assessed for biodiversity value*	✔	100%	100%	100%

*For business unit(s) in operating status identified as high potential for biodiversity impact only

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.

Biodiversity Policy

1	2	3	4
Avoidance	**Minimization**	**Rehabilitation**	**Offset**
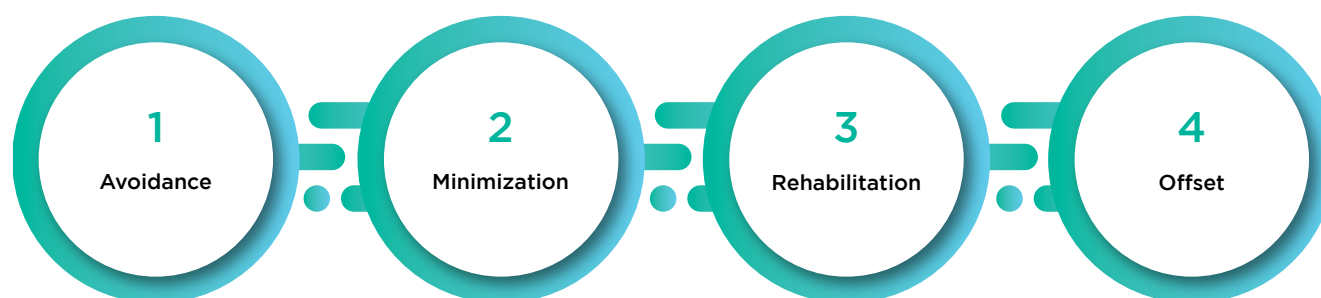
In addition, the Company carries out a preliminary biodiversity risk assessment for each business unit since pre-operation stage by considering whether those operational sites are located in or adjacent to the protected or high biodiversity wilderness areas. A survey on vulnerable and native species, especially the species in the IUCN Red List, is also performed to ensure that such species are protected. In the case where a high potential risk for biodiversity impact is identified, the Company then conducts a biodiversity value assessment in line with the Convention on Biological Diversity (CBD) guideline. In addition, the biodiversity management plan (BMP) is developed for the sites identified as high potential with the target to achieve a net positive impact on biodiversity upon closure of those mines after 2025.

Year in Review

The Company has reviewed biodiversity risk assessment at all businesses to ensure that the biodiversity-related impacts from its activities will be effectively managed. Moreover, Nusa Persada Resources, a mining project in Indonesia has conducted field work to assess biodiversity in the project area prior to the commencement of mining activities.

Biodiversity Risk Assessment

In 2022, the Company performed an annual preliminary biodiversity risk assessment at all business units. According to the assessment, 4 operating mines, 1 mining project, and 1 renewable power plant project were identified as high potential for biodiversity impact.

Business	Operational status	No. of business unit		
		Total	Assessed for potential biodiversity impact	Identified as high potential
Mining-Indonesia	Operating	5	5	2
	Project Development	3	2	-
Mining-Australia	Operating	5	5	2
	Project Development	4	3	1
Thermal power-China	Operating	3	3	-
Renewable power-China	Operating	7	7	-
Renewable power-Japan	Operating	15	14*	-
	Project Development	1	1	1
Renewable power-Vietnam	Operating	4	4	-
	Project Development	1	1	-
Renewable power-Australia	Operating	2	2	-

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

For those 5 mines identified as high potential for biodiversity impact, the Company has assessed the biodiversity value and developed the biodiversity management plans. Moreover, the biodiversity value was also conducted at 3 mines in Australia even though they are identified as low potential for biodiversity impact. For the renewable power project identified as high potential, the Company plans to conduct the biodiversity value assessment once it commences operation.

IUCN Red List

The company annually identify the types of species that may be present in the area and the level of threat they may face by considering IUCN Red List. This information can then be used to develop plans and strategies for minimizing the impact of mining operations on local wildlife and ecosystems.

Mining business in Indonesia

Critically endangered 2
Endangered 5
Vulnerable 8
Near threatened 7
Critically endangered 51
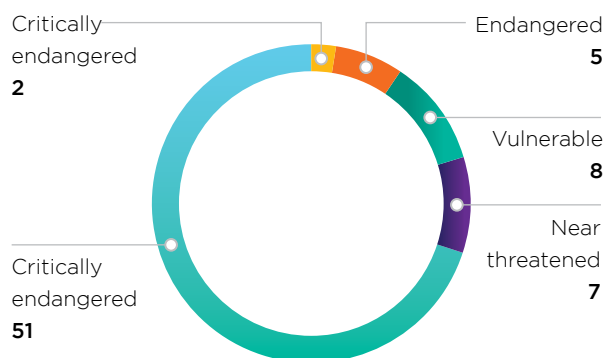
Mining business in Australia

Critically endangered 1
Endangered 1
Vulnerable 9
Near threatened 6
Critically endangered 30
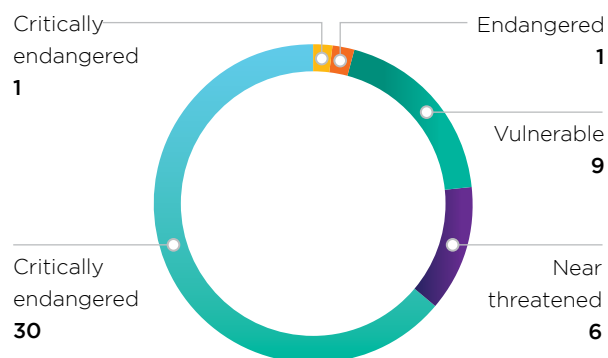
WATER

Significance & Commitment

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 to a conflict with local communities and finally impact credibility of the Company.

Management Approach

Performance Overview		2022	Target 2022	Target 2025
Water consumption intensity				
• Mining business (m³/tonne finished coal)	✗	1.260	≤0.144	-
• Thermal power business (m³/MWh)	✓	0.818	≤0.868	≤0.868

Management Approach

The Company is aware of the importance of water and its potential impacts from water scarcity. Therefore, the specified water management strategy is developed in accordance with water management hierarchy, including elimination, reduction, reuse/recycle covering all states of water including withdrawal, water consumption and water discharge. Moreover, the Company controls effluent discharge quality and provides mitigation measures to achieve short-term/long-term targets and mitigate water-related impacts that are covered to all stakeholders.

Water Management Policy

1 Elimination	**2** Reduction	**3** Reuse/Recycle

Year in Review

The Company has established a water database including water flow diagram, water balance and water discharge, which is monitored by the 3rd party to ensure that effluent discharge complies with national laws and regulations and prioritizes substance of concerned following international standards and operating criteria of each business unit as mentioned in water management standard. Moreover, the Company has cooperated and provided water resources to stakeholders such as providing water supply to communities surrounding mine in Indonesia and collaborating with power plants to utilize mine water for power generation activity.

The Company has conducted an annual water risk assessment with Aqueduct Water Risk Atlas of World Resource Institute for all business operations. This is to prepare a water management plan for water withdrawal and enhance stakeholder engagement in water-related impacts in water-stressed areas. Moreover, the Company has conducted Product Water Footprint Assessment to improve internal water management efficiency for power business.

MINE SUBSIDENCE

Significance & Commitment

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 surrounding residents. This issue is realized and prioritized as the top rank of the Company. Appropriated technologies are then studied and applied to prevent and diminish the impacts.

Management Approach

Performance Overview		2022	Target 2022	Target 2025
Number of reports related to mine subsidence*		0	-	-
Proportion of mines with subsidence management plan*		100%	-	-
Progress of subsidence management activities against plan*	✓	100%	>90%	>90%

* For underground mining only

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.

Year in Review

Underground mining in Australia has monitored activities related to subsidence regulation. Example of activities permitted were swamp offset strategy approval at Springvale and longwall 32 extraction plan approval at Mandalong.

SOCIAL

PERFORMANCE HIGHLIGHT

		2022	Target 2022	Target 2025
Employee engagement level	✓	79%	≥70%	≥80%
Banpu Heart score	✓	79%	≥70%	≥80%
Proportion of high critical positions with successor identified	✗	57%	100%	100%
Employees with individual development plan	✗	70%	≥89%	100%
Occupational fatalities				
• Employees	✗	1	0	0
• Contractors	✓	0	0	0
Lost time injury frequency rate				
• Employees	✓	2.41	≤2.55	≤1.99
• Contractors	✗	0.21	≤0.17	≤0.14
Significant human rights issues	✓	0	0	0
Significant resettlement complaints	✓	0	0	0
Indigenous peoples and ethnic minorities' rights violations	✓	0	0	0
Number of significant community complaint	✗	97	0	0
Coverage of social impact assessment	✓	67%	≥40%	≥90%
Coverage of community perception survey	✓	48%	≥20%	≥80%
Proportion of mines with mine closure plan	✓	100%	100%	100%
Progress of mine closure activity against plan	✓	98%	≥90%	≥90%
Coverage of annual stakeholder satisfaction survey on community development project	✓	100%	>60%	>80%
Stakeholder satisfaction level on community development project	✓	85%	>73%	>75%

Employee Engagement

Significance & Commitment

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. Besides, workforce diversity is the Company's challenge since several languages, races, religions, and cultures exist. The Company believes that strong corporate culture is the key to managing such diversities, strengthening employee engagement levels, and increasing productivity.

Management Approach

Performance Summary		2022	Target 2022	Target 2025
Level of employee engagement	✅	79%	>70%	>80%
Total turnover rate		5.7%	-	-
Female to male remuneration ratio		0.69	-	-

Management Approach

The Company aspires to develop employees as professionals by adhering to the human resources management principle, under the "One Banpu, One Goal" framework, which accentuates commitment to operate under clear vision and goals collaboratively. The Company provides equal opportunities to employees of every race, nationality, language, culture, and gender. In order to create among Banpu people, the Company promotes collaborative work with diversity under the corporate culture "Banpu Heart" which comprises of 3 core values: Passionate, Innovative and Committed, and 10 key behaviors. "Banpu Heart" has been integrated into all stages of the employee lifecycle, including recruitment, on-boarding, development, and performance evaluation.

The Company has entrusted a third party to conduct an employee engagement and corporate culture "Banpu Heart" survey annually since 2012. The survey is also translated into each country's local language to ensure thorough understanding and genuine feedback.

Year in Review

In 2022, the Company redesigned employee-related activities to align with its portfolio diversification by reinforcing a sense of ownership and strengthening corporate culture "Banpu Heart". The integration of gamification concepts into activities further enhanced employee engagement and participation. As a result, the employee engagement score was 79%, which increased from the previous year. Upon reviewing the country-specific data, it was observed that the engagement level in nearly all countries has increased.

Banpu Heart Activities

In 2022, the Company organized several activities to instill the 10 key behaviors of Banpu Heart. Here are some examples:

- Banpu Heart workshops in Australia, Japan, Mongolia, and Vietnam to help employees understand and adopt 10 key behaviors of Banpu Heart.

- Reinforcement of Banpu Change Leaders (BCLs), a group of employees who volunteer to drive corporate culture, by elevating the BCLs network to enhance impact and effectiveness.

- "Banpu People Garden" campaign to demonstrate the Company's belief in the potential of employees by emphasizing that employees from diverse backgrounds have the opportunity to grow in their own paths.

- "To achieve the best, you must learn from the taste of failure" activities to encourage employees to overcome their fear of failure and dare to take risks and make mistakes through the learning process.

- Presentation of ten Banpu Heart Ambassadors at "Banpu Transformation: The Future we make" event to affirm the role of corporate culture and people in driving Banpu transformation.

- "The Beat of Winfinity" sports activities to connect employees with each other via various activities, including online games, basketball, and badminton.

Employee Support Programs

The Company places an importance on employee well-being to create a friendly working environment and happy working conditions. The activities and projects held are as follows:

- Launch work anywhere and flexible working hour policy, allowing employees to have control over their work schedule and working style as long as the goals are met.

- Provide "RelationFlip", which is a counseling service to support employees for better working and personal lives.

- Arrange "Boost me up" series to sustainably improve employees' well-being in all aspects. The series covers various aspects such as mindfulness, health, financial literacy, and empowering employees to contribute to society.

- Offer flexible benefits for employees to reimburse expenses related to family life and relaxation.

- Support maternity and paternity leave by allowing pregnant employees to take maternity leave up to 98 days. Additionally, male employees are granted 5 days of leave to care for their families while receiving wages on the day of leave, which is beyond Thai labor laws.

- Support cash gifts for childbirth and provide breast-feeding facility.

- Provide fitness facilities to strengthen employee's health.

Human Resources Management Policy

The Company improved its Human Resource Management Policy to ensure relevance with evolving business context and changes in laws & regulations in each country. Emphasis has been placed on non-discrimination and anti-harassment policies. To prevent discrimination and harassment, the Company has established guideline that covers various aspects across the employee lifecycle, including recruitment & selection, training & development, performance management, employee compensation, and transfer & exit. The grievance mechanism for addressing discrimination and harassment incidents and steps to be taken have also developed.

Human Resources Management Policy

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.

Female to Male Remuneration Ratio

Category	Ratio
Senior management	1.15
Middle management	0.89
Junior management	0.89
Staff and supervisor	1.10
Average	0.69

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 - a single standard rate without gap between men and women. The compensation structure is reviewed every two years to ensure its competitiveness. In addition, the variable compensation based on the Company's performance, both in terms of financial and ESG performance, such as safety records and community complaints, is also annually awarded.

%Female

Category	%
All Business	14.5%
Mining Business	4.4%
Thermal Power Business	13.9%
Renewable Power Business	26.3%
Enabling Function	36.7%
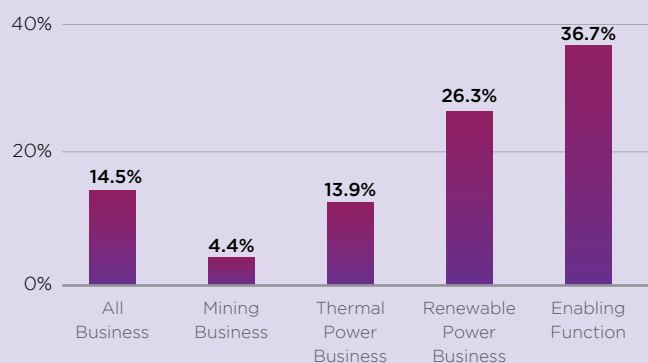
Proportion of Female Employees

With respect to the principle of equality, the Company grants equal opportunities to all employees, regardless of race, nationality, language, culture, or gender. However, due to the different business characteristics in each country, such as open-pit mining in Indonesia and underground mining in Australia, employees in each production activity thus differ in some ways. For example, the proportion of males is higher for frontline workers, while the proportion of females is as high as 36.7% for enabling functions.

Human Capital Development

Significance & Commitment

Employee is the Company's most valuable resource. Attraction and retention of talents at the Company through human capital development plan is thus part of the crucial factors enhancing the Company's competitive advantage along with the propulsion of business amid a complicated and fast-paced business environment.

Management Approach

Performance Summary		2022	Target 2022	Target 2025
Proportion of high critical positions with successor identified	❌	57%	100%	100%
Proportion of employees with individual development plan	❌	70%	≥89%	100%
Proportion of open positions filled by internal candidates		26%	-	-

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. Specific training roadmaps 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 technical and leadership skills.

The Company has designed a curriculum "Banpu Global Leadership Program" for new generation leaders in 4 levels: Strategic leader, Business leader, First line leader, and Future leader. This program aims to promote diversity and inclusion in the workplace and cross-functional networking to instigate international cooperation and collaboration. Currently, the methodology to evaluate the return on employee development investment is being standardized based on international practices such as the Kirkpatrick model.

Year in Review

In 2022, the Company took significant steps to foster a culture of lifelong learning and leadership development by establishing Banpu Academy. Banpu Academy was established not only at the Bangkok office but also in Indonesia and Australia. In addition, the Company arranged various programs to develop leadership skills, such as Energy Titan, negotiation skills, coaching and mentoring skills, and data-driven citizen program. For developing leadership competencies, the Company arranged "Banpu Leadership Program for Future Leader" and "Banpu Global Leadership Program for First Line Leader". Furthermore, the Company also promotes a coaching culture through "Great Coach" and "HiCoach" programs, which have been held continuously for 5 years.

BANPU Engaging Leader

From the findings of the 2014 employee engagement survey, at the head office in Thailand, the Company developed 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 levels, using the notion that these managers work closely with operational staff. Result from the on-going program throughout 7 years, the employee engagement level at the head office in Thailand has significantly increased from 57% in 2106 to 72% in 2022. Such success of Banpu Engaging Leader, the Company has upgraded the program into a series of training packages named "Banpu Engaging Leader Program" and expanded to all business units across the group.

Participants	207 employees
Coverage	32% of total management in junior and middle levels
Project duration	8 years (2015-Current)
Business benefits	Enhance employee engagement level
Outcome & Impact	Level of employee engagement increased from 57% to 72%

Level of employee engagement

2016	2017	2018	2019	2020	2021	2022
57%	64%	67%	68%	69%	69%	72%
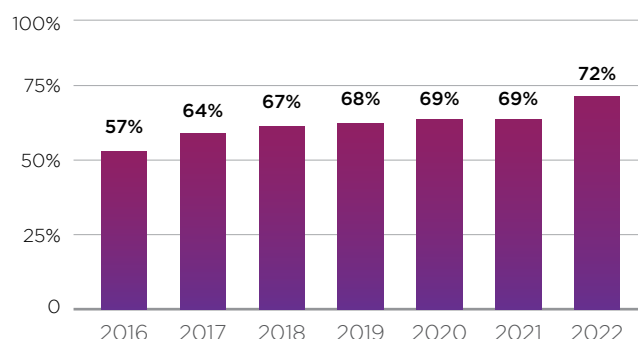
HiCoach Program

HiCoach is part of Banpu Engaging Leader Program, organized for the 4th consecutive year to reinforce the coaching culture in the organization. Based on the basic coaching foundation program "Great Coach" which the Company provided to team leaders, objective of HiCoach is to strengthen coaching skills through real practice. HiCoach is arranged as a cross-functional program in which coachee is employees from different functions to ensure coachee's full benefit. In addition, there are also external experts who is the professional coach certified by International Coaching Federation (ICF), serving as mentors throughout the program. In 2022, there were coaches and coachees from Thailand, Singapore, Vietnam, China and Indonesia. The results of 6-dimension coaching skill assessment revealed that all coaches have remarkable competency of "Trust & Connect", which is one core competency required. Furthermore, the survey result illustrated that HiCoach also facilitates the development of 5-dimension leadership competency, particularly a growth mindset.

Level of coaching skill

Trust & Connect	Creating Awareness	Coachee's Growth	Coaching Question	Active Listening	Direct Feedback
4.20	4.00	4.00	4.00	3.85	3.80
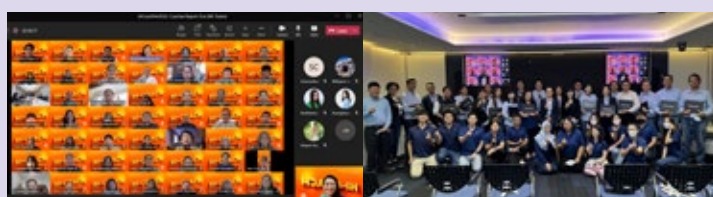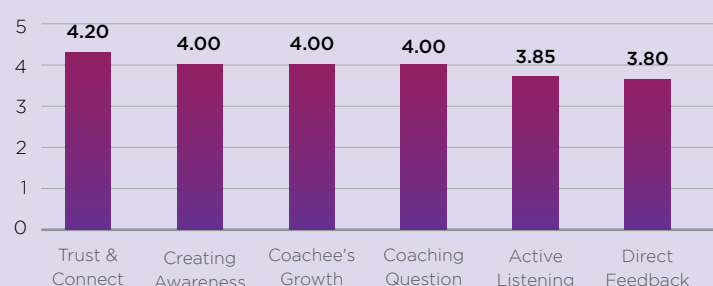
Participants	74 coaches and 76 coachee
Project duration	4 years (2019-Current)
Business benefits	• Promote coaching culture • Developing coaching skills among supervisors • Promote cross-functional working
Outcome & Impact	• Increased level of coaching skills • Increase level of trust across functions

BANPU Global Leadership

BANPU Global Leadership is a program designed to develop leadership competency among potential successors of the new generation of leaders across business units. The program aims to ensure the Company's competitive advantage and propel business growth in a complex and fast-paced business environment. The key objectives of the program are as follows:

1. Build habits of great leaders from personal effectiveness to team effectiveness
2. Strengthen the business acumen for driving business value
3. Build an agile workforce and promote experience sharing among participants across the group.

Participants	680 employees
Coverage	13.5% of FTEs
Project duration	13 years (2010-Current)
Business benefits	• Readiness of potential successor for critical positions • Effectiveness of succession planning and high potential management
Outcome & Impact	• 100% of critical positions are internally filled by participants of the program. • 85% of high-potential candidates are developing their capability in the program.

Partner with ScII

The Company's collaboration with educational institutions demonstrates its commitment to knowledge exchange and fostering innovation in Thai society. In 2022, the Company partnered with Chulalongkorn School of Integrated Innovation (ScII), the newest faculty at Chulalongkorn University, to cohost a seminar titled" B Beyond Digital Transformation" and arranged the B.Hack event under theme "Decoding Sustainability".

Through these collaborations with educational institutions, the Company promotes a culture of continuous learning, innovation, and social responsibility. By leveraging the expertise and resources of academic partners, the Company can stay at the forefront of industry developments and foster innovation.

Participants	138 students 8 employees
Project duration	2022
Business benefits	• Promote the Company's reputation across young generation • Gather innovative solutions and ideas from outside-in • Enhance the Company's competitiveness in the digital era
Outcome & Impact	• 20 innovative projects

Occupational Health & Safety

Significance & Commitment

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.

Management Approach

Performance Summary		2022	Target 2022	Target 2025
Number of fatalities - Employee	❌	1	0	0
Number of fatalities - Contractor	✅	0	0	0
Lost time injury frequency rate – Employees	✅	2.41	≤ 2.55	≤ 1.99
Lost time injury frequency rate – Contractors	❌	0.21	≤ 0.17	≤ 0.14

Management Approach

The Company has established an Occupational Health and Safety (OHS) department, tasked with overseeing that safety is accordingly to rule in all business units, with adherence to local laws and regulations in each country and the Company's standards. Additionally, the Company has integrated ISO 45001 into its OHS management system, and instilled a safety culture that emphasizes on strengthening safety management system, enhancing safety competency, and promoting safety awareness. The Company has announced OHS Policy and the following "3 Zeroes" targets - Zero Incident, Zero Repeat, and Zero Compromise.

OHS Policy

Year in Review

In 2022, the Company organized various activities across its business units to ensure a safe working environment and foster a strong safety culture within the organization. In Australia, the Company implemented the Deep Dive Program, which involved monitoring and improving OHS performance. The program was conducted under the theme "Your safety is my safety, every task, every time." While in Indonesia, a virtual seminar was organized to raise awareness about road safety as well as invited experts for health talk.

Furthermore, the Company conducted a safety culture maturity level assessment for the power plant in China. In Thailand, the Company focused on improving the SOS application, which serves as an efficient tool for employee to report incidents or safety concerns.

In 2022, there was an accident occurring at Luannan power plant, where an employee suffered a fatal injury while working in the coal loading area. The incident occurred when a coal loader truck was reversing and inadvertently collided with the employee. As a result of the investigation, sensors were installed at the back of the coal loader to detect potential collisions and provide timely alerts to the driver.

Long-term Targets and Progress

In 2022, the Lost Time Injury Frequency Rate (LTIFR) of employees was 2.41, while for contractors was 0.21, increased from the previous year. The Total Recordable Injury Frequency Rate (TRIFR) for employees was 13.91 and for contractors was 0.66 that achieved the target. Upon analyzing the types of injuries that occurred among employees, the Company found that the majority were muscle and ligament injuries, injuries from impact, and open wounds. For contractors, the main types were injuries from impact, open wounds, and fractures. In addition, the analysis of the cause of danger revealed that excessive exertion, tripping, slipping, and falling were the main contribution factors to injuries.

Safety Records - Employees
(Person/Million Man-hour)
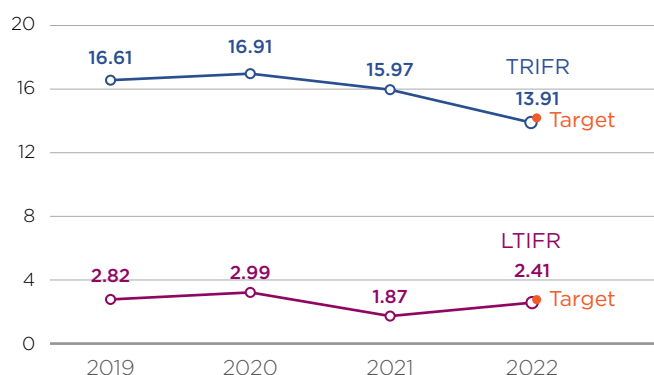
Safety Records - Contractors
(Person/Million Man-hour)
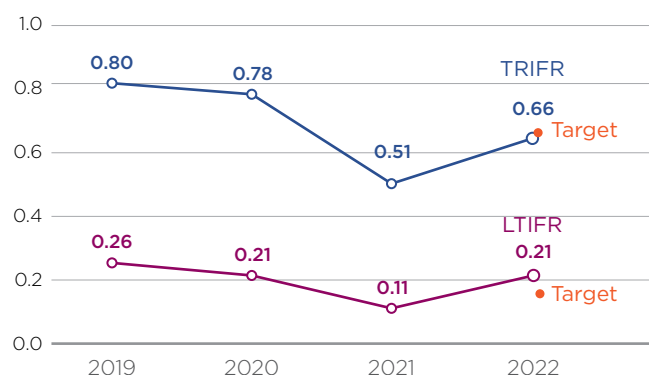
Safety Culture Enhancement for 7 Solar Power Plant in China

In China, the Company's continuous promotion of safety culture has had a positive impact on employee safety performance. By fostering a strong safety culture, the Company has been able to minimize unsafe actions, which are the main cause of accidents, as well as improve safety performance.

The cultivation of a safety culture begins with the leadership at each power plant. They lead by example and actively promote safety awareness through their actions and behaviors. This includes participating in safety site visits, communicating safety information, and demonstrating their commitment to safety operations. Safety meetings are conducted monthly, in tandem with safety training being provided for all site managers and safety documentation developed. As a result, the Company has achieved a better safety performance, including a decreased number of chemical incidents.

Input
• Budget	USD 4,857
• Employee involved	5 persons

Impact (annual)
• Natural capital	USD 1,786
• Human capital	USD 2,743
• Social capital	USD 12,143
SROI	1:3.43

Virtual Reality Free Roam (VRFR) Strata Identification Training

In July 2021, one of mine sites in Australia had a roof fall at the immediate face area of a development panel during the production cycle. The incident revealed that a lack of knowledge regarding Trigger Action Response Plan (TARP) was one of the causes. In response, the Company and NSW Coal Service collaborated to develop the Virtual Reality Free Roam (VRFR) Strata Identification training program. This program aims to immerse users in a virtual work scenario where they can actively engage in a hazardous task without any exposure to the actual hazards or risks. Moreover, the program educates employees about the cause and effects of non-compliance with TARP during production.

As a result, there was no recurrence of the issue. Moreover, all employees have been an increase in their knowledge and understanding on the importance of compliance with the strata and the roof support density. The virtual reality technology has been utilized in other training topics as well.

Budget	USD 26,000
Impact	
Human capital	Reduce exposure to hazards
	Improve OHS competency
Social capital	Comply with authority requirements

E-SHEAP Application

Workplace inspection plays a crucial role in preventing injuries and illnesses. Such inspections allow identification of hazardous conditions and either immediately correct them or report for further corrective actions taken. In Indonesia, the Company had developed Electronic-Safety Health and Environment Accountability Program or E-SHEAP Application. With E-SHEAP, supervisors can conveniently conduct safety inspections, record findings, track corrective actions and provide feedback to employees. This application also helps prevent the recurrence of incidents and accidents. Furthermore, E-SHEAP encourages supervisors to actively engage in safety communication and safety inspections. By conducting safety inspections regularly, accidents, injuries, and other incidents can be prevented.

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	15	14**	-
Renewable power-Vietnam	4	4	-
Renewable power-Australia	2	2	-

* Considered only operating site

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

Safety Culture Maturity Level Assessment

The Company has continuously assessed safety culture maturity since 2018. The assessment outcomes are utilized as part of the Company's efforts to enhance safety culture in the working environment. In 2022, the assessments were carried out at various operational sites, including a first-time assessment at 1 solar power plant in China, and the re-assessment at all mines and offices in Australia.

Referring to the re-assessment in Australia, the results demonstrated the progress in cultivating a stronger safety culture as improved performance across all elements, compared to the results from three years prior. At the end of 2022, the number of operations assessed has increased to 14 across 3 countries: China, Australia, and Indonesia. The Company commits to expand the assessment coverage as well as raise the maturity level to maintain a high level of safety awareness and prevent incidents or accidents in the future.

Business	No. of business unit		No. of business unit in each maturity level				
	Total	Assessed	Emerging	Managing	Involving	Cooperating	Continually improving
Mining-Indonesia	5	3			3		
Mining-Australia	5	5				5	
Thermal power-China	3	3				3	
Renewable power-China	7	3			3		
Renewable power-Japan	15	0					
Renewable power-Vietnam	4	0					
Renewable power-Australia	2	0					

HUMAN RIGHTS

Significance & Commitment

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.

Management Approach

Performance Overview		2022	Target 2022	Target 2025
Coverage of business units assessed for human rights risks*	✅	84%	>70%	100%
Number of significant human rights issues	✅	0	0	0

* Assessment conducted at least once in every 3 years

Management Approach

The Company is committed to operating business strictly adhering to international guidelines, such as the Universal Declaration of Human Rights (UDHR), the UN Guiding Principles on Business and Human Rights (UNGPs), ILO Declaration on Fundamental Principles and Rights at Work, the United Nations Global Compact (UNGC) as well as the local labor laws of countries in which the Company operates. The Company respects freedom, equality and human dignity without discrimination against gender, race, religion or skin color in order to prevent and avoid human rights violations among employees, suppliers, customers, contractors, communities and vulnerable groups, namely children, women, the disabled, indigenous people, migrant workers and the elderly.

Human Rights Due Diligence Manual

Human Rights Policy

Human Rights Due Diligence

Commitment — Announce Human Rights policy to explain how the Company respects human rights

Risk and impact Identification — Identify actual and potential risk and assess impacts

Integrating and acting on identified risk — Integrate findings to activities and ensure effective implementation

Grievance mechanisms & remediation — Set up contact points for receiving report and develop process to investigate

Reporting — Disclose performance with external stakeholder regarding how we handle impacts

Tracking performance — Track effectiveness of the response

The Company has announced the human rights due diligence manual as a framework for assessing human rights risks, covering all major human rights risks across the business supply chain. The Company also has in place a grievance mechanism, comprising various channels for different types of complaints and stakeholders.

Year in Review

In 2022, the human rights due diligence workshops were arranged at the mining business in Indonesia and solar rooftop business in Thailand. During the workshop, human rights case studies related to the business were brought up to discuss for all participants to better understand human rights issues as well as improve preventive measures. The assessment result indicated no significant human rights risk. Moving towards 100% coverage by 2025, the Company plans to expand the scope of the human rights risk assessment for renewable power business in Vietnam in 2023.

Human Rights Promotion & Preventive Measures

The Company has proactively promoted human rights, including policy, practice, and prevention of human rights violations in the workplace, to all employees and management through a monthly e-newsletter "Sustainability Insights". Moreover, the Company has implemented various measures to prevent potential human rights issues.

Potential human rights issue	Stakeholder	Preventive measure
Occupational health and safety in workplace	• Employee • Contractor	• Provide safety orientation and annual safety training • Conduct annual emergency evacuation and fire drills • Communicate through various channels, such as an e-newsletter • Arrange monthly meetings of the health and safety committee
Child and forced labor	• Employee • Contractor • Child	• Follow the policy not to employ a child and not encourage forced labor by complying with related laws and regulations and providing contract agreements for all employment
Freedom of association and collective bargaining	• Employee	• Establish the welfare committee with employee representatives to discuss on welfare & benefits • Respect employees' right to freely and voluntarily form or join unions or similar bodies without interference as stated in the Employee Relations Policy
Discrimination	• Employee • Local community	• Provide a compliant channel for employees and local community • Develop a whistleblowing policy
Remuneration	• Employee	• Implement compensation policy by applying the international standard of the compensation management system

Modern Slavery Statement

Banpu Australia and Centennial, the Company's subsidiary in Australia, announced the second Modern Slavery Statement in 2022, which represents a reaffirmation of its commitment to prevent the insidious practice from encroaching on the business, both directly and indirectly. The Company conducted a risk assessment of its labor hire arrangements to determine if any modern slavery issues were present or had the potential to arise. The highest level of risk identified was moderate. Moreover, the Company analyzed 23 Tier-1 suppliers to determine if any vendors were at high risk of modern slavery through the use of a modern slavery questionnaire. The results of this survey indicated low risk in modern slavery. Going forward, the Company developed a three-year modern slavery roadmap to ensure awareness of the threat presented by modern slavery and develop its approach to modern slavery through further stakeholder engagement to raise awareness, training, and grievance mechanisms, all aligned with the roadmap and long-term goals.

2021 MODERN SLAVERY STATEMENT

BPA
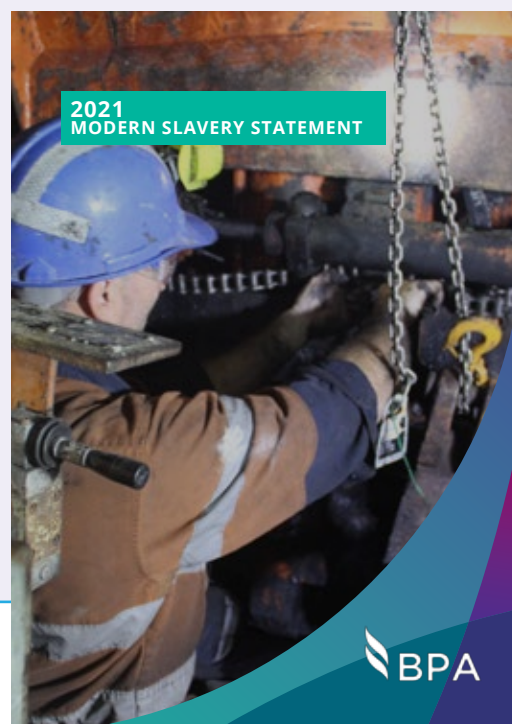
Community Engagement

Significance & Commitment

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.

Management Approach

Performance Overview		2022	Target 2022	Target 2025
Number of significant community complaints	❌	97	0	0
Number of significant community complaint issues		3	-	-
Proportion of business units with social impact assessment	✅	67%	>40%	>90%
Proportion of business units with community perception surveys	✅	48%	>20%	>80%

Management Approach

The environmental and social impact assessment (ESIA) has been conducted since the inception of project development and when there is a significant change during the project implementation. 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 community as well as vulnerable groups, government, and company representatives, has been established. The Company has set up the community engagement function in each business unit to ensure that local communities have truly engaged with the Company and all development programs will genuinely benefit the communities. In practice, the community engagement approach in each country varies according to local business characteristics and community contexts.

Community Engagement Policy

Year in Review

In 2022, the Company convened 26 community advisory committee meetings with all villages in Indonesia and 18 mining group-level subcommittee meetings in Australia. It was found from those meetings that most communities in Indonesia wanted to improve their quality of life in the areas of health and economy, while communities in Australia were concerned about groundwater, ongoing employment, and energy security.

This year, the Company has recorded 97 significant complaints from communities in Australia and Vietnam. For Australia, there were 95 significant complaints related to 2 main issues: noise (87 complaints) and surface cracking (8 complaints). For the cracking issue, the complaints have been resolved and closed. On the other hand, the noise issue is now the subject of engineering work, which is expected to be completed by 2023. For Vietnam, the complaint is about oil leakage from wind turbines into shrimp farms. At present, the engineering work is currently being completed while compensation is negotiated. The Company has kept complainants informed of its progress and communicated through community CCC and reported the results to the appropriate state authorities.

Social Impact Assessment

The Company gives great importance to the impact that will occur on the community and, therefore, has established a social impact assessment (SIA) in all business units prior to the commencement of the project. The information obtained from the assessment will be used to design activities that respond to community needs by mainly reducing or avoiding their impact on the community, including comparing the relief from the impact before leaving the operating area at the end of the concession. Furthermore, if project specifics change during the process, the Company has scheduled a new social impact assessment to align with the modified production activities.

Business	Operational status	No. of business unit		
		Total	SIA conducted	SIA communicated
Mining-Indonesia	Operating	5	5	5
	Project Development	3	3	-
Mining-Australia	Operating	5	5	5
	Project Development	2	2	2
Renewable power-China	Operating	7	-	-
	Project Development	-	-	-
Renewable power-Australia	Operating	2	2	2
	Project Development	-	-	-
Renewable power-Vietnam	Operating	2	2	-
	Project Development	3	-	-

Resettlement Management

The resettlement management standard is developed with respect to human rights as an integral part of the Company's sustainability. It is developed in line with international guidelines such as those of the International Finance Corporation (IFC) and the International Council on Mining & Metals (ICMM), which is clearly stated that unnecessary resettlement should be avoided. However, where resettlement is unavoidable, the Company puts more attention into planning resettlement appropriately with well-managed engagement of relevant stakeholders to ensure their standard of living, which creates trust in local communities as well as obtaining social license-to-operate. The management strictly follows the standard, which comprises 6 key measures to minimize potential impacts: mutual agreement setting, strategy formulation, expert consultation, stakeholder consultation, resettlement planning, and monitoring & evaluation.

Resettlement
Management

Community Compliant Management in Australia

In alignment with the corporate standard, Centennial's complaint management advertises community complaints and provides a hotline number to the public. The environmental and community coordinator is responsible for recording, investigating, and responding to complaints; developing corrective or preventative actions as appropriate; and, in accordance with the incident reporting standard, recording the complaint in the system as well as maintaining a community complaints register, which is published on the Centennial's website monthly.

Indigenous Peoples Management

It might be an opportunity for the Company to involve indigenous peoples during project development as well as operation. Therefore, the Company commits to building a meaningful relationship with indigenous peoples and communities based on honesty, integrity, and respect through the establishment of an indigenous peoples engagement guideline and implemented it across business units. The standard begins with a 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. During the interaction, there may be an opportunity to create an impact on indigenous peoples. Thus, the Company will deal with the inquiries based on the grievance mechanism and community complaint management standard. And if it includes resettlement of the indigenous peoples, the Company would do so on the basis of resettlement management standard, which applies across business units. Moreover, the cultural heritage management plan is also developed for each specific site to ensure that the cultural heritage is respected and preserved as well as to avoid any violation risk against their rights.

Indigenous Peoples Management

Community Complaint Management

The Company has devised a community complaint management system to enable systematic management of community complaints across the business. This approach covers indigenous peoples management and local community restoration under resettlement management in the event of inevitable project-related displacement. Also, the Company has specified that the outcomes of community complaint management be reported regularly to the ESG and the Sustainability Committee.

Complaint Issue - Surface Cracking in Australia

In early 2022, Centennial, a subsidiary in Australia, received 8 community-initiated inquiries and complaints in relation to this issue. The complaints were managed in accordance with the Centennial's environmental management system meaning all contact was recorded and the Airly Community Consultative Committee advised of the nature of the complaints and subsequent response. All complaints were published on the website. Centennial has worked in collaboration with the government, National Parks and Wildlife Service (NPWS) and other stakeholders to develop a response to the issue which has included a change to the mine design and remediation strategies for the surface impacts. The outcomes of this management have also been reported to the Sustainability Committee and the ESG Committee.

> We sincerely thank you for your valuable support. Banpu Vietnam and the hospital have joined hands in the prevention of acute pneumonia caused by COVID-19. The support of medical supplies from Banpu Vietnam at this time is very meaningful as we can assist the hospital's professionals to improve treatment efficiency. We look forward to collaborating with you in improving local well-being.

Le Thi Minh Hong
Deputy Director of Children's hospital 2

MINE CLOSURE

Significance & Commitment

It is a normal characteristic of the mining business that the mineral reserves will finally be depleted in every mining operation. The Company therefore places an emphasis upon the need to prepare for mine closure at the beginning of the project and carries on throughout the asset life until closure stage. This ensures the Company's commitment to responsible mining practices with the acceptance of related stakeholders.

Management Approach

Performance Overview		2022	Target 2022	Target 2025
Proportion of mines with mine closure plan	✓	100%	100%	100%
Progress of revegetation against plan[a]	✓	98%	≥90%	≥90%
Progress of mine closure activity against plan[b]	✓	100%	≥90%	≥90%

[a] For open-pit mine only
[b] For underground mine only

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 environmental and social 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.

Furthermore, the Company conducts a social impact assessment prior to the commencement of the project. This assessment helps identify the potential social impacts on local communities and design activities that respond to community needs and avoid negative impacts. If there are any changes to the project specifics, a new social impact assessment is scheduled to align with modified production activities. The Company's mine closure is aimed at ensuring that surrounding communities can continue their sustainable livelihoods even after the mine ceases operation. Throughout the mine closure process, the Company closely monitors progress associated with the mine closure plan.

Year in Review

In Indonesia, Embalut mine has entered the closure phase after operating since 2009. The mine is located in East Kalimantan province, with a total area of 2,973 hectares. In 2022, the Company strived to support 8 community development projects in 3 key areas: education, health, and economic development. These areas were identified from the needs of the local communities. Every project has proceeded as per targets, with a total budget of IDR 2 billion and 4,600 beneficiaries.

Regarding other mines, the mine closure activities have been carried out as planned and the progress is regularly updated to the management on a quarterly basis. In addition, the Company has studied and implemented various initiatives, for example, the acid drilling project for disposal management plan and application of utilizing AI technology for reclamation activities.

Community Development

Significance & Commitment

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.

Management Approach

Performance Overview		2022	Target 2022	Target 2025
Coverage of annual stakeholder satisfaction survey on community development projects	✓	100%	>60%	>80%
Average stakeholder satisfaction level on community development projects	✓	85%	>73%	>75%

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 authority, 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. In addition, the Company developed a data management system called Community Engagement Data Management System (CEMS) to manage the social impact data of all business units. Furthermore, the Company adopts the Social Return on Investment (SROI) framework as a tool to measure the social impact of community development projects to reflect its effectiveness and to use the assessment results to improve operational efficiency to achieve its sustainability goals.

Community Development Policy

ECONOMIC DEVELOPMENT & INCOME GENERATION

EDUCATION DEVELOPMENT

INFRASTRUCTURE DEVELOPMENT

SUSTAINABLE COMMUNITY DEVELOPMENT

SOCIAL & CULTURE PROMOTION

HEALTH & SANITATION DEVELOPMENT

ENVIRONMENTAL CONSERVATION

Year in Review

In 2022, the Company conducted community satisfaction surveys in Indonesia. Moreover, community perception surveys were conducted in Indonesia and Australia to measure community acceptance. In Indonesia, a community perception survey was conducted at the communities surrounding Embalut mine, with the average score at the "Satisfactory" level. The Company is also planning to expand the scope of community perception surveys at other mines next year. In Australia, the survey has been conducted at mining group-level subcommittee meetings, and in 2022, strategies to improve were reviewed and applied to the implementation in order to secure the local perception at the "Satisfactory" level.

Stakeholder Satisfaction Survey

In 2022, the Company conducted community satisfaction surveys covering 17 community development programs of 4 Indonesian mines. The average satisfaction rating was 85% or at the "Satisfactory" level.

Average Stakeholder Satisfaction Level

Year	Level
2017	67%
2018	68%
2019	71%
2020	78%
2021	76%
2022	85%
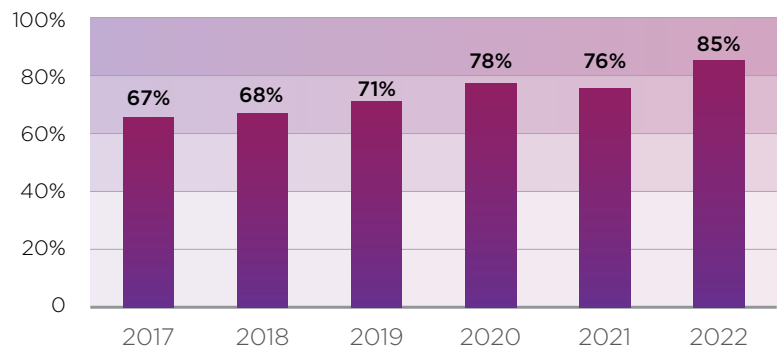
Economic Development Program at Solar Power Plant in China

The community development program has been formulated to ensure better living conditions and the sustainability of the local community members. The program has helped enhance the collaboration between the Company and the community. According to the community consultation, the development of local employment opportunities has been indicated as a way to increase family income. Thus, the solar power plant designed a program to boost the local economy by employing local people to perform work on the Company's site. The work includes weeding, solar panel cleaning and bolt tightening. In addition, all workers will be equipped with the necessary skills, especially focusing on safety prior to performing job duties.

Budget	USD 80,685
Number of beneficiaries	45 persons
Community benefits	• Increased local job opportunity and family income • Enhanced skill sets to local peoples • Improved better relationship with local community

> Jorong mine is one of the companies that provides assistance to the Simpang Empat Sungai Baru village. It has collaborated with the village administration through community development programs. The program is indeed beneficial and has had a significant influence on the community in terms of health, education, empowerment, and human resource development. Examples of regular activities include supplemental food supplies for health clinics and scholarships. Jorong mine also funded goat farming to promote income generation through village-owned business. Therefore, I would like to express my sincere appreciation for the support given to the villagers. We want to continue collaborating with you and work together for community sustainability.

Heriyanto
Village Head of Simpang Empat Sungai Baru
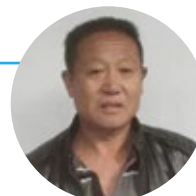
> I would like to thank you for your support. The community development initiatives have provided me with meaningful work possibilities, and I have significantly improved my quality of life in regard to personal income increase, technical and safety skills improvement as well as social respect.

Li Chun Jiang
Villager of Da Bu Gou

Community Cooperative Establishment in Indonesia

The Bharinto mine in Indonesia supported the cooperative to improve the community's economy. The cooperative manages 8 hectares of land for hybrid maize cultivation and is going to expand to 10 hectares of land to develop more products from its farming business. This hybrid maize cultivation project involved 22 people. The Company equipped the members with cooperative management training and assisted them in providing business capital and supporting facilities. At present, there are 74 people who have registered as cooperative members. The cooperative received a silver category award in the CSR and Sustainable Rural Development Award in Indonesia.

Budget	USD 30,757
Number of beneficiaries	74 persons
Community benefits	• Improved the community's economy through cooperatives • Increased income generation • Supported women empowerment through a housewife business group

Computer Training Center in Indonesia

The Turbaindo mine in Indonesia assists local people and students by improving their computer literacy. The Company established the Computer Training Center called LPK Media Citra Mandiri, which became a place to learn about computer skills. This project has been established since 2016. At present, the total number of graduated students is 390, from various occupations such as teachers, students, workers, and village government officers. It is clearly seen that the program benefits the local members by supporting their job opportunities in computer literacy. The Computer Training Center project received a silver category award in the CSR and Sustainable Rural Development (SRD) Award, organized by the Ministry of Villages, Development of Disadvantaged Regions, and Transmigration, Indonesia.

Budget	USD 20,170
Number of beneficiaries	390 persons
Community benefits	• Improved the quality of education • Increased computer literacy for local students • Increased career opportunities for 26 workers

Cattle Farm Project in Indonesia

The Kitadin Embalut mine assisted the cattle farm program in 4 foster villages. Currently, the number of cattle breeder groups has reached 7 groups, with a cow population of 300 heads. This cattle farm program, which was initiated in 2009, is being implemented in line with the East Kalimantan Province's development strategy by producing 2 million head of cattle. This program creates a one-stop cattle herd system that facilitates supervision. Cow dung is turned into fertilizer, which helps to restore the condition of the former mining soil so that it becomes fertile quickly for planting agricultural crops.

Budget	USD 6,662
Number of beneficiaries	45 persons
Community benefits	• Increased local income • Decreased unemployment rate while increasing job opportunity • Improved the quality of agricultural land
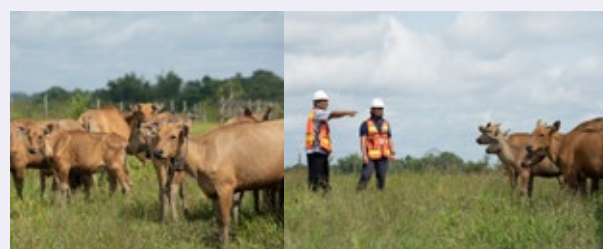
Mangrove Rehabilitation Program in Indonesia

Indominco mine is aware of the natural protections, one of which is carried out through the Mangrove Rehabilitation Program. From 2012 to 2022, Indominco planted a total of 130,000 mangrove trees in a 72 hectares area, contributing to the 14th SDGs Goal - Ocean Ecosystem. The activities consisted of mangrove planting, the construction of mangrove monitoring shelters, and community involvement in the supply of mangrove seedlings and tree planting movements. To date, planting has benefited 2,618 local community members. This program has received various recognitions from the government and media, namely the Local Propernas (green award), the GKPM silver award from the Cooperation Ministry of Indonesia, and the Gold Award from the Indonesian Sustainability Development Goals Award (ISDA).

Budget	USD 89,368
Number of beneficiaries	2,618 persons
Community benefits	• Improved quality of life for local community • Increased natural buffer zone to reduce risk from disaster • Raised public awareness of mangrove rehabilitation and preservation

Organic Fertilizer Development Program in Indonesia

In realizing the waste problem of Karangrejo Village, Jorong in collaboration with the community consultative committee, initiated this program with the aim of producing organic fertilizer. Jorong provided support in the form of training, workshops, production facilities, and relevant equipment. Since 2017, the group has produced 1,065 tons of organic fertilizer, with a total gross income of IDR 1,683,425,000. The organic fertilizer development program is managed by a farmer group. This program has a wide range of effects on the community, including raising public awareness about waste management. This helped the local community generate income while also saving the Company's budget on rehabilitation.

Total budget	11,712 USD
Beneficiaries	52 persons
Community benefits	• Increased local income • Improve soil quality for agriculture • Raised environmental awareness
SROI	1 : 2.67

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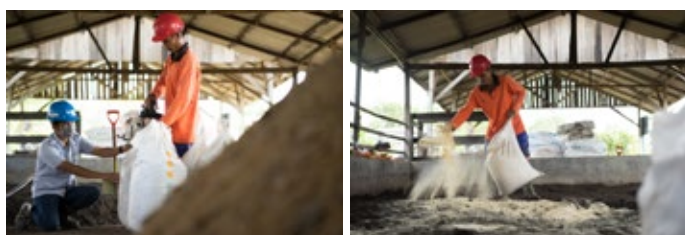
Your company is the only one private company in our village which actively assists the local community in achieving sustainable development, improving community development relationships, and obtaining mutual benefits. My family has greatly benefited from participating in your community development efforts. It not only takes care of children but also increases family income. Moreover, the efforts provide safety and environmental education as well as employment opportunities. Thank you for your thoughtfulness and assistance. I will undoubtedly support your community initiatives and actively promote your company. "

Wang Chun Qin
Villager of Long Wang Miao

LIST OF BUSINESS

As of 31 December 2022

Energy Resources

Mining Business

Country	Name	Type	Status	Production volume 100% basis	Production volume Equity-based	Ownership
Indonesia	Indominco	open-pit coal mine	operating	6.8 Mt	4.4 Mt	65.14%
	Trubaindo	open-pit coal mine	operating	3.0 Mt	2.0 Mt	65.14%
	Bharinto	open-pit coal mine	operating	5.7 Mt	3.7 Mt	65.14%
	Jorong	open-pit coal mine	operating	0.9 Mt	0.6 Mt	65.14%
	Kitadin-Embalut	open-pit coal mine	post mining	0.2 Mt	0.1 Mt	65.14%
	Graha Panca Karsa (GPK)	open-pit coal mine	operating	-	-	65.14%
	Tepian Indah Sukses	open-pit coal mine	project development	-	-	65.14%
	Nusa Persana Resources	open-pit coal mine	project development	-	-	65.14%
China	Gaohe	underground coal mine	operating	9.4 Mt	4.2 Mt	45%
	Hebi	underground coal mine	operating	0.8 Mt	0.3 Mt	40%
Australia	Airly	underground coal mine	operating	1.2 Mt	1.2 Mt	100%
	Clarence	underground coal mine	operating	1.6 Mt	1.3 Mt	85%
	Mandalong	underground coal mine	operating	2.8 Mt	2.8 Mt	100%
	Myuna	underground coal mine	operating	1.1 Mt	1.1 Mt	100%
	Springvale	underground coal mine	operating	2.3 Mt	2.3 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	Unst Khudag	coal mine	project development	-	-	100%
	Tsant Uul	coal mine	project development	-	-	100%

Gas Business

Country	Name	Type	Status	Production capacity 100% basis	Production capacity Equity-based	Ownership
The U.S.	Marcellus	shale gas production	operating	133 MMcfed	128 MMcfed	96.11%
	Barnett	shale gas production	operating	731 MMcfed	703 MMcfed	96.11%

Energy Generation

Thermal Power Business

Country	Name	Type	Status	Production capacity 100% basis	Production capacity Equity-based	Ownership
Thailand	BLCP	coal-fired power plant	operating	1,434 MW	717 MW	50%[a]
Lao PDR	HPC	coal-fired power plant	operating	1,878 MW	751 MW	40%[a]
China	Zhengding	combined heat & power plant	operating	139 MW	139 MW	100%[a]
	Luannan	combined heat & power plant	operating	246 MW	246 MW	100%[a]
	Zouping	combined heat & power plant	operating	233 MW	163 MW	70%[a]
	SLG	coal-fired power plant	operating	1,320 MW	396 MW	30%[a]
Japan	Nakoso	integrated gasification combined cycle power plant	operating	543 MW	73 MW	13.4%[a]
The U.S.	Temple I	gas-fired power plant	operating	768 MW	768 MW	100%

[a] Banpu Power's ownership (78.66% share is held by Banpu)

Renewable Power Business

Country	Name	Type	Status	Production capacity 100% basis	Production capacity Equity-based	Ownership
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%
	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%
Vietnam	El Wind Mui Dinh	wind power plant	operating	37.60 MW	37.60 MW	100%
	Ha Tinh	solar power plant	operating	50.00 MW	50.00 MW	100%
	Chu Ngoc	solar power plant	operating	15.00 MW	15.00 MW	100%
	Nhon Hai	solar power plant	operating	35.00 MW	35.00 MW	100%
	Vinh Chau	wind power plant	project development	80.00 MW	80.00 MW	100%

Renewable Power Business

Country	Name	Type	Status	Production capacity		Ownership
				100% basis	Equity-based	
Japan	Olympia - Hitachi Omiya	solar power plant	operating	2.00 MW	0.80 MW	40%
	Olympia - Hitachi Omiya 2	solar power plant	operating	2.00 MW	0.80 MW	40%
	Olympia - Ozeno Sato Katechina	solar power plant	operating	2.00 MW	0.80 MW	40%
	Olympia - Sakura 1	solar power plant	operating	2.00 MW	0.80 MW	40%
	Olympia - Sakura 2	solar power plant	operating	2.00 MW	0.80 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	20.46 MW	100%
	Mukawa	solar power plant	operating	17.00 MW	15.70 MW	93%
	Kurokawa	solar power plant	operating	18.90 MW	18.90 MW	100%
	Tenzan	solar power plant	operating	1.96 MW	1.96 MW	100%
	Muroran1	solar power plant	operating	1.73 MW	1.73 MW	100%
	Muroran2	solar power plant	operating	1.63 MW	1.63 MW	100%
	Takeo II	solar power plant	operating	1.00 MW	1.00 MW	100%
	Yamagata	solar power plant	operating	20.00 MW	20.00 MW	100%
	Yabuki	solar power plant	operating	7.00 MW	5.25 MW	75%
	Shirakawa	solar power plant	operating	10.00 MW	10.00 MW	100%
	Kesennuma	solar power plant	operating	20.00 MW	20.00 MW	100%
	Nihonmatsu	solar power plant	operating	12.00 MW	12.00 MW	100%
	Yamagata Iide	solar power plant	project development	200.00 MW	102.00 MW	51%
Australia	Beryl	solar power plant	operating	110.90 MW	110.90 MW	100%
	Manildra	solar power plant	operating	55.90 MW	55.90 MW	100%

Energy Technology

Solar Rooftop & Floating Business

Country	Name	Type	Status	Production capacity		Ownership
				100% basis	Equity-based	
Thailand	Banpu NEXT	solar rooftop	operating	22.00 MW	22.00 MW	100%
	Banpu NEXT	solar floating	project development	48.00 MW	48.00 MW	100%
Vietnam	Solar Esco	solar rooftop	operating	27.00 MW	13.23 MW	49.01%
Indonesia	IBP	solar rooftop	operating	7.30 MW	7.30 MW	100%
Japan	Tenguyama Solar Park	solar rooftop	operating	0.70 MW	0.70 MW	100%
China	Shijiazhuang Chengfeng New Energy	solar rooftop	operating	3.34 MW	3.34 MW	100%

Energy Storage System

Country	Name	Type	Status	Production capacity		Ownership
				100% basis	Equity-based	
China	Durapower	energy storage	operating	1.0 GWh	0.5 GWh	47.68%
Thailand	BCD Energies	energy storage	project development	-	-	30%

Smart Cities & Energy Management

Country	Name	Type	Status	Project		Ownership
				100% basis	Equity-based	
Thailand	Banpu NEXT	smart community	project development	20 projects	20 projects	100%

E-Mobility

Country	Name	Type	Status	Service capacity		Ownership
				100% basis	Equity-based	
Thailand	Banpu NEXT	e-Ferry	operating	1 Unit	1 Unit	100%
	Urban Mobility Tech	electric vehicle fleet	operating	5,800 passengers/day on 334 cars	2,300 passengers/day on 133 cars	39.74%
	Evolt	charging station	operating	326 stations	65 stations	20%
	Banpu NEXT	car sharing	operating	100 vehicles	100 vehicles	100%

Energy Trading

Country	Name	Type	Status	Trading capacity		Ownership
				100% basis	Equity-based	
Japan	Banpu Power Trading G.K.	energy trading	operating	1,719 GWh	1,719 GWh	100%

STAKEHOLDER ENGAGEMENT

Stakeholder	Engagement Channel	Stakeholder's Issue	Banpu's Sustainability Topic
Employee	• Internal communication by human resources • Employee involvement in various committees • Whistleblower channel • Survey on the level of alignment between employee behavior and the corporate culture • Employee engagement survey • Townhall meeting	• Business direction	• Our Business
		• Business ethics and responsible business practices	• Business Ethics
		• Happiness in the workplace • Fair compensation, welfare, and benefits • Career opportunities	• Employee Engagement
		• Capability development	• Human Capital Development
		• Safety in the workplace	• Occupational Health & Safety
Community	• Community consultative committee • Community satisfaction survey • Whistleblower channel • Community development officers • Public information on the website	• Social and environmental impact from operational activities	• Community Engagement • Air Emissions & Waste
		• Community safety and residential safety	• Community Engagement
		• Respect for community rights	• Human Rights • Community Engagement
		• Community well-being and economic distribution	• Economic Distribution • Community Development
Customer	• Customer satisfaction survey • Whistleblower channel • Customer visit • Response to request for data disclosure • Report on annual maintenance plan and emergency drill	• Quality and price of product • On-time product delivery	• Customer Management
		• Social and environmental impact from the use of product	• Customer Management • GHG Emissions
		• Availability of products and services	• Reliability of Power Plants
		• Personal data breaches • Use of customer data	• Data Privacy & Cybersecurity
Government & Regulator	• Occasional government visit • Support governmental initiatives and activities • Response to request for data disclosure • Publication of annual report and sustainability report • Public information on the website	• Value creation for economy and society	• Sustainability Governance • Economic Distribution
		• Business ethics • Data transparency and disclosure	• Business Ethics
		• Regulatory compliance	• Compliance
		• Responsible consumption of natural resources	• Energy & Water
		• Supply chain management	• Supplier Management • Customer Management
		• Social and environmental impact from operational activities	• GHG Emissions • Water, Air Emissions & Waste • Biodiversity • Mine Closure
		• Driving SDGs into practices	• Banpu and SDGs

Stakeholder	Engagement Channel	Stakeholder's Issue	Banpu's Sustainability Topic
Supplier	• Occasional supplier meeting	• Transparent procurement process and fair compensation	• Business Ethics
		• Future business opportunity	• Supplier Management
		• Personal data breaches	• Data Privacy & Cybersecurity
Contractor	• Occasional contractor meeting • Annual contractor meeting	• Transparent procurement process and fair compensation	• Business Ethics
		• Safety in the workplace	• Occupational Health and Safety
		• Energy consumption reduction	• Energy
		• Future business opportunity	• Supplier Management
Financial Institution	• Analyst meeting • Publication of annual report and sustainability report	• Business transparency	• Business Ethics
		• Operational performance and business growth	• Year in Review
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
		• Operational performance and business growth	• Year in Review
		• Business continuity	• Reliability of Power Plants • Business Continuity
Shareholder	• Annual general meeting of shareholders • Publication of annual report and sustainability report • Whistleblower channel • Public information on the website	• Qualification of Board of Directors and managements	• Management Structure • Sustainability Governance
		• Business transparency	• Business Ethics
		• Risk & opportunity management	• Risk Management • Business Continuity
		• Research & development for competitive advantage	• Digital Transformation
		• Operational performance and business growth	• Year in Review
Investor	• Investor roadshow • Opportunity Day organized by the 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 & opportunity management	• Risk Management • Business Continuity
		• Operational performance and business growth	• Year in Review
Media and NGOs	• Response to request for data disclosure • Fact sheet summary • Public information on the website • Media activity and event	• Value creation for economy and society	• Sustainability Governance
		• Business transparency	• Business Ethics
		• Transparency and disclosure of data	• Performance Data
		• Regulatory compliance	• Compliance
		• Social and environmental impact from operational activities	• GHG Emissions • Water, Air Emissions & Waste • Community Engagement

REPORTING BOUNDARY

Sustainability Topic	Mining business			Thermal power business	Renewable power business				Solar rooftop & floating business	Smart cities & energy management	Head office
	Indonesia	Australia	Mongolia	China	China	Japan	Vietnam	Australia	Thailand	Thailand	Thailand
Sustainability Governance	●	●	●	●	●	●	●	●	●	●	●
Business Ethics	●	●	●	●	●	●	●	●	●	●	●
Digital Transformation	●	●	NR	●	●	●	●	●	●	●	●
Supplier Management	●	●	NR	●	○	○	○	○	○	○	◐
Customer Management	●	●	NR	●	●	●	○	○	●	○	NR
Economic Distribution	●	●	●	●	●	●	●	●	●	●	●
Reliability of Power Plants	NR	NR	NR	●	NR	NR	NR	NR	NR	NR	NR
Business Continuity	●	●	NR	●	●	◐	◐	●	●	○	●
Compliance	●	●	●	●	●	●	●	●	●	○	●
Risk Management	●	●	●	●	●	●	●	●	●	○	●
Data Privacy & Cybersecurity	●	●	NR	●	●	○	○	○	●	○	●
GHG Emissions	●	●	NR	●	●	●	●	●	●	●	●
Energy	●	●	NR	●	●	●	●	●	●	●	●
Air Emissions	●	●	NR	●	NR	NR	NR	NR	NR	●	NR
Waste	●	●	NR	●	●	○	●	●	●	●	NR
Biodiversity	●	●	NR	●	●	●	●	●	NR	NR	NR
Water	●	●	NR	●	●	●	●	●	NR	NR	NR
Mine Subsidence	NR	●	NR	NR	NR	NR	NR	NR	NR	NR	NR
Employee Engagement	●	●	●	●	●	●	◐	●	●	●	●
Human Capital Development	●	●	●	●	●	●	●	●	●	●	●
Occupational Health & Safety	●	●	●	●	●	◐	●	●	●	●	●
Human Rights	●	●	○	●	●	●	●	●	●	●	●
Community Engagement	●	●	NR	NR	●	NR	○	○	NR	NR	NR
Mine Closure	●	●	NR	NR	NR	NR	NR	NR	NR	NR	NR
Community Development	●	NR	NR	NR	●	NR	○	NR	NR	NR	NR

●●●●● Covers both management approach and performance data
●●●●● Covers management approach but partially covers performance data
○○○○○ Covers only management approach
NR   Not significant or not relevant to such business

Remark: 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, Lao PDR and Japan
- Solar rooftop & floating business in Vietnam
- Energy storage system business in China and Thailand
- E-Mobility 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 system is under standardization.
- Thermal power business in the U.S.
- Solar rooftop & floating business in Indonesia, Japan and China
- Smart cities business in Thailand
- Energy trading business in Japan
- Gas business in the U.S.

PERFORMANCE DATA

Economic Performance

	2019	2020	2021	2022
Revenues (USD million)	2,759	2,283	4,124	7,693
EBITDA[a] (USD million)	701	563	1,778	3,916
Net profit (USD million)	(20)	(56)	304	1,162
Gross profit margin	26%	20%	42%	53%
Interest coverage ratio	2.4	2.5	5.8	9.4
Net debt to equity ratio	1.23	1.47	1.31	0.74

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

Tax Payment – by Country

	2019	2020	2021	2022
Indonesia				
• Net profit before tax (USD million)	186	725	621	1,545
• Income tax (USD million)	(59)	(35)	(146)	(345)
• Income tax paid (USD million)	(111)	(63)	(61)	(213)
• Income tax rate	25%	22%	25%	25%
China				
• Net profit before tax (RMB million)	162	339	51	205
• Income tax (RMB million)	(46)	(74)	(19)	1
• Income tax paid (RMB million)	(41)	(60)	(42)	(2)
• Income tax rate	25%	25%	0%-25%	0%-25%
Australia				
• Net profit before tax (AUD million)	30	(157)	(290)	246
• Income tax (AUD million)	(5)	-	-	(78)
• Income tax paid (AUD million)	-	-	-	-
• Income tax rate	30%	30%	30%	30%
The U.S.				
• Net profit before tax (USD million)	-	-	-	433
• Income tax (USD million)	-	-	-	(53)
• Income tax paid (USD million)	-	-	-	(7)
• Income tax rate	-	-	-	30%
Banpu[a]				
• Net profit before tax (USD million)	125	(8)	690	2,144
• Income tax (USD million)	(78)	(9)	(198)	(521)
• Income tax paid (USD million)	(140)	(78)	(84)	(260)
• Income tax rate	20-25%	20-25%	0%-30%	0%-30%

[a] Consolidated

Contributions to External Organizations & Associations

	2019	2020	2021	2022
Lobbying or interest representation (USD million)	0	0	0	0
Political party or political interest (USD million)	0	0	0	0
Trade association or tax-exempt groups (USD million)	0.53	1.04	0.63	0.44
Other contribution (USD million)	0	0	0	0

Management Structure

	2019	2020	2021	2022
Board of Directors	13	13	13	13
• Independent Director	5	5	5	5
• Non-executive Director	7	7	7	7
• Executive Director	1	1	1	1
Board of Directors – by gender				
• Male	12	12	12	12
• Female	1	1	1	1
Board of Directors - by tenures				
• >10 years	3	3	3	4
• 3-10 years	9	7	7	7
• <3 years	1	3	3	2
Average tenures of Board of Directors	12.5	12.3	13.3	13.6
Number of meetings				
• Board of Directors	12	13	13	12
• Corporate governance and nomination committee	4	4	9	11
• Audit committee	9	9	9	9
• Compensation committee	6	8	5	6
• ESG committee	-	-	3	4
Meeting attendance				
• Board of Directors	97%	98%	99%	99%
• Corporate governance and nomination committee	94%	94%	100%	100%
• Audit committee	100%	100%	100%	100%
• Compensation committee	94%	100%	100%	100%
• ESG committee	-	-	100%	100%
Performance assessment[a]				
• Group	4.76	4.74	4.85	4.91
• Individual (average)	4.51	4.56	4.67	4.76
• Corporate governance and nomination committee	4.95	4.95	4.99	4.84
• Audit committee	4.90	4.45	4.90	4.75
• Compensation committee	4.83	4.61	4.70	4.70
• ESG committee	-	-	4.60	4.33

[a] In the range of 0 to 5

Business Ethics

	2019	2020	2021	2022
Number of significant corporate governance complaints	10	9	2	0
• Corruption and bribery	2	0	0	0
• Fraud, embezzlement, theft	2	1	0	0
• Dishonesty for own and other benefit	1	4	0	0
• Dangers to health and safety or the environment	1	0	0	0
• Intentional act causing harm or loss to the Company	2	1	0	0
• Significant breaches of the Code of Conduct	2	0	2	0
• Assistance in wrongdoing[a]	0	0	0	0
• Others[b]	0	3	0	0
Proportion of significant corporate governance complaints resolved through a dispute mechanism	100%	100%	100%	NA[c]
Fines related antitrust/anti-competitive practices				
• Number of fines	0	0	0	0
• Total amount of fines (USD)	0	0	0	0

[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] Discrimination and harassment

[c] No significant complaints

Sustainability Governance

	2019	2020	2021	2022
Coverage of ESG risks considered by Audit committee	100%	100%	100%	100%
Coverage of ESG topics considered by ESG committee	100%	100%	100%	100%
Coverage of material ESG topics in corporate targets	100%	100%	100%	100%
Coverage of material ESG topics embedded in CEO's KPI and deployed to senior management	100%	100%	100%	86%

Risk Management

	2019	2020	2021	2022
Coverage of ESG risk management	-	87%	94%	95%

Customer Management

	2019	2020	2021	2022
Number of complaints				
• Customer privacy	0	0	0	0
• Safety and environmental issues from the use of products	0	0	0	0
• product and service information & labeling and marketing communications	-	-	0	0
Proportion of customer complaints resolved in a timely manner	NA[a]	NA[a]	NA[a]	NA[a]
Customer satisfaction				
• Customer satisfaction rate	-	-	100%[b]	100%[b]
• Coverage of customers surveyed	-	-	89%[b]	100%[b]

[a] No complaints

[b] Includes data of thermal power business in China only

Supplier Management

	2019	2020	2021[e]	2022[f]
Number of suppliers				
• All suppliers	4,037	3,197	1,978	909
• Critical suppliers	195[b]	2,389	733	462
Proportion of suppliers assessed for ESG risks				
• All critical tier-1 suppliers	69%[b]	3%	6%	64%
• New critical tier-1 suppliers	23%[c]	-[d]	-[d]	-[d]
Proportion of spending on local suppliers[a]	66%	38%	52%	99%
Proportion of contracts that include ESG clauses	28%[c]	15%	-[d]	9%

[a] Supplier that operates in the areas of business operations

[b] Includes data of mining business in Indonesia and thermal power business in China only

[c] Includes data of thermal power business in China only

[d] Data collection system under standardization

[e] Includes data of mining business in Indonesia and Australia and solar rooftop business in Thailand only

[f] Includes data of mining business in Indonesia only

Data Privacy & Cybersecurity

	2019	2020	2021	2022
Number of cybersecurity breaches	-	1	0	1
Number of IT infrastructure incidents	-	1	1	1
% of IT and IoT assets securely managed by security operation center (SOC)	-	-	30%	60%
Cybersecurity & privacy maturity score[a]	-	-	2.0	3.0

[a] In the range of 1 to 5

Digital Transformation

	2019	2020	2021	2022
Number of use-cases & initiatives	199	13	102	130
Amount of business impact value (USD million)	84	43	71	118
Number of digital capability centers	1	2	4	8
Number of tech ecosystem partners	30	12	15	9

Economic Distributions

	2019	2020	2021	2022
Ratio of the dividend payout to net profits	NA[g]	NA[g]	27%	21%
Economic value generated (USD million)				
• Sales	2,652	2,219	4,033	7,059
• Other revenues	352	228	274	576
Economic value distributed (USD million)				
• Shareholder[a]	116	63	56	135
• Supplier and contractor[b]	1,164	1,173	1,362	1,679
• Employee[c]	287	308	380	400
• Financial Institution[d]	174	166	167	265
• Government[e]	356	246	496	1,177
• Community[f]	6	3	5	9
Economic value retained (USD million)	901	485	1,840	3,969
Community & social investment - by objective				
• Donations to charity	33%	46%	34%	26%
• Community investments	28%	44%	59%	68%
• Commercial initiatives	39%	10%	7%	6%
Community & social investment - by type				
• Cash contribution	93%	70%	87%	75%
• Time provided by volunteer staff	4%	22%	1%	4%
• Management overhead	2%	7%	11%	18%
• In-kind giving	1%	1%	1%	3%
Community investment – by dimension				
• Economic development & income generation	32%	32%	15%	24%
• Social & cultural promotion	17%	23%	14%	32%
• Infrastructure development	14%	17%	13%	7%
• Education development	20%	15%	9%	18%
• Health and sanitation development	14%	9%	47%	17%
• Environmental conservation	3%	4%	2%	2%

[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

Compliance

	2019	2020	2021	2022
Significant socioeconomic non-compliance	0	0	0	0
• Number of significant fines[b]	0	0	0	0
• Number of significant non-monetary sanctions	0	0	0	0
Significant environmental non-compliance	0	0	0	0
• Number of significant fines[b]	0	0	0	0
• Number of significant non-monetary sanctions	0	0	0	0
Fines paid – for instance occurred in reporting year				
• Number of fines[b]	0	0	0	0
• Amount of fines (USD)	0	0	0	0
Fines paid – for instance occurred in previous reporting years				
• Number of fines[b]	0	0	0	0
• Amount of fines (USD)	0	0	0	0
Total amount of significant fines[b] (USD)	0	0	0	0
Number of significant environmental incidents[a]	0	0	1	1
• Effluent discharge limits	0	0	0	0
• Air emissions standards	0	0	0	0
• Others	0	0	1	1
Cases brought through dispute mechanisms	0	0	0	0
Spills[c]				
• 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

[c] Significant spills include spill(s) that leads to environmental incidents in moderate to high level (referring to internal definition)

Business Continuity

	2019	2020	2021	2022
Coverage of CMT/IMT exercise	25%	100%[a]	100%[a]	42%
Coverage of BCP exercise for critical business functions	-	-	7%[b]	11%

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

[b] The real execution of BCP for critical business functions considered as a BCP exercise

Reliability of Power Plants[a]

	2019	2020	2021	2022
Efficiency rate				
• Electricity generation (g/KWh)	279	247	203	184
• Steam production (kg/GJ)	37.94	37.75	37.96	37.23
Availability factor	94.07%	97.72%	95.05%	94.00%
Overall efficiency	65.07%	74.70%	77.47%	79.78%
Planned outage				
• Frequency (case)	26	15	20	14
• Duration (hour/case)	241	174	229	427
Unplanned outage				
• Frequency (case)	1	0	4	1
• Duration (hour/case)	457	NA[b]	427	72
Unplanned outage factor	5.20%	0%	0.05%	0.82%

[a] Includes 3 combined heat and power plants in China only

[b] No unplanned outage

Product

	2019	2020	2021	2022
Finished coal (tonnes)	33,427,638	31,500,685	27,803,045	25,270,108
Electricity sold (MWh)				
• Renewable	288,275	338,870	539,641	752,763
• Conventional fuel	1,495,640	1,563,091	1,178,967	1,089,332
Steam sold (MWh)	3,328,603	3,564,832	3,529,044	3,406,515
Heat sold (MWh)	824,264	1,346,803	1,325,845	1,366,146

Air Emissions

	2019	2020	2021	2022[d]
Air emissions load (tonnes)				
• SO_2	339	862	977	947
◦ Non-point source	0	698	683	645
◦ Point source	339	164	294	302
• NO_x[a]	2,352	1,507	1,644	910
• PM_{10}[a][b]	316	250	255	331
• TSP[a]	143	33	112	84
• Mercury[c]	0.0034	0.0085	0.0091	0.0079
Air emissions intensity – mining business (g/tonne finished coal)				
• SO_2	5.5	22.1	29.6	32.4
◦ Non-point source	0	22.1	24.5	25.5
◦ Point source	5.5	0	5.1	6.9
• NO_x[a]	63.0	39.2	49.5	27.2
• PM_{10}[a]	9.4	7.9	9.2	13.1
• TSP[a]	3.7	0.5	3.4	2.7
Air emissions intensity – thermal power business (g/MWh)				
• SO_2	27.1	25.4	25.4	21.8
◦ Non-point source	0	0	0	0
◦ Point source	27.1	25.4	25.4	21.8
• NO_x[a]	43.6	41.9	44.5	37.9
• TSP[a]	3.1	2.7	3.1	2.6
• Mercury	0.0006	0.0013	0.0015	0.0014
Ozone-depleting substances (Kg CFC-11e)				
• ODS consumption	69	181	108	9
• ODS imported	0	0	0	0
• ODS exported	0	0	0	0

[a] Point source only

[b] Mining business only

[c] Thermal power business only

[d] Excludes coal logistics activity, 2 offices and 2 coal projects in Indonesia

GHG Emissions

	2019	2020	2021	2022[d]
GHG emissions[b] (tonnes CO_2e) – included biogenic CO_2	8,030,832	8,015,832	7,591,449	7,280,401
GHG emissions[b] (tonnes CO_2e) - excluded biogenic CO_2	7,803,803	7,654,367	7,239,161	7,033,159
• Scope 1	7,550,472	7,401,161	6,990,528	6,763,823
• Scope 1 (Biogenic CO_2)	227,030	361,466	352,288	247,241
• Scope 2	253,331	253,206	248,633	269,336
• Scope 3[a]	68,659,848	65,656,827	57,714,468	51,806,516
GHG emissions intensity[b] - included biogenic CO_2				
• Mining business (tonnes CO_2e/tonne finished coal)	0.126	0.127	0.142	0.146
• Power business (tonnes CO_2e/MWh)	0.644	0.591	0.555	0.542
• Solar rooftop business (tonnes CO_2e/MWh)	0.012	0.003	0.002	0.001
GHG emissions intensity[b] - excluded biogenic CO_2				
• Mining business (tonnes CO_2e/tonne finished coal)	0.119	0.115	0.129	0.136
• Power business (tonnes CO_2e/MWh)	0.644	0.591	0.555	0.542
• Solar rooftop business (tonnes CO_2e/MWh)	0.012	0.003	0.002	0.001
GHG emissions intensity[b] (tonnes CO_2e/MWh)				
• Electricity generation	0.173	0.151	0.132	0.149
• Steam & heat generation	0.495	0.462	0.460	0.442
SF_6 emissions (tonnes CO_2e)	1,120	548	275	865
Proportion of electricity generated[c]				
• Conventional fuel	98%	98%	96%	94%
• Renewable energy	2%	2%	4%	6%

[a] Use of products sold for mining business only

[b] Scope 1 & 2

[c] Includes thermal power business and renewable power business

[d] Excludes 2 coal projects in Indonesia

Energy

	2019	2020	2021	2022[b]
Total energy consumption (TJ)	26,204	23,311	19,597	19,508
Renewable energy consumption (TJ)				
• Renewable fuel	2,203	2,843	2,750	2,534
• Electricity purchased	0	0	0	0
• Electricity self-generated	1,045	1,239	1,987	2,779
Non-renewable energy consumption (TJ)				
• Non-renewable fuel	43,216	42,641	37,412	34,778
• Electricity purchased	1,112	1,117	1,112	1,274
• Steam, heat and cooling	0	0	0	0
Energy consumption – by source (TJ)				
• Coal	30,308	31,391	27,491	24,796
• Diesel	9,110	6,900	6,748	6,993
• Methane	71	183	503	0
• Waste gas	3,652	4,102	2,613	2,836
• Natural gas	0	2	0	0
• Palm oil	2,203	2,843	2,750	2,534
• Electricity (non-renew)	1,112	1,117	1,112	1,274
• Solar	1,045	1,239	1,832	2,497
• Wind	0	0	155	282
• Others[a]	75	61	57	152
Renewable energy sold (TJ)				
• Electricity	1,038	1,220	1,943	753
Non-renewable energy sold (TJ)				
• Electricity	5,384	5,627	4,244	3,922
• Steam	11,983	12,833	12,705	12,263
• Heat	2,967	4,848	4,773	4,918
Energy consumption intensity				
• Mining business (GJ/tonne finished coal)	0.45	0.42	0.44	0.47
• Thermal power business (GJ/MWh)	1.96	1.53	1.19	0.95
• Renewable power business (GJ/MWh)	0.07	0.07	0.07	0.10
• Solar rooftop business (GJ/MWh)	0.16	0.05	0.02	0.02

[a] Includes gasoline, petroleum-based oil, petroleum-based grease, LPG, activated carbon, and ethanol

[b] Excludes 2 coal projects in Indonesia

Water

	2019		2020		2021		2022[a]	
	Freshwater	Other water	Freshwater	Other water	Freshwater	Other water	Freshwater	Other water
Water withdrawal (ML)								
• from all areas	161,602	0	1,387,991	1,184	1,218,394	1,260	255,232	3,051
• from water stress area	6,761	0	7,615	0	6,908	0	24,486	1,856
Water withdrawal – from all areas (ML)								
• Surface water	138,579	0	1,366,286	0	1,187,140	0	223,222	3
• Groundwater	16,852	0	15,759	0	26,486	0	28,640	0
• Seawater	1,324	0	0	1,184	0	1,260	0	1,191
• Produced water	0	0	0	0	0	0	0	0
• Third-party water	4,847	0	5,946	0	4,768	0	3,370	1,857
Water withdrawal – from water stress area (ML)								
• Surface water	0	0	0	0	17	0	797	0
• Groundwater	2,497	0	2,234	0	2,711	0	21,287	0
• Seawater	0	0	0	0	0	0	0	0
• Produced water	0	0	0	0	0	0	0	0
• Third-party water	4,265	0	5,381	0	4,180	0	2,402	1,856
Third-party water withdrawal – from water stress area (ML)								
• Surface water	3,897	0	4,117	0	3,182	0	2,402	1,599
• Groundwater	0	0	0	0	1	0	1	0
• Seawater	0	0	0	0	0	0	0	0
• Produced water	0	0	0	0	0	0	0	0
• Reclaimed water[c]	367	0	1,263	0	997	0	0	258
Water discharge (ML)								
• to all areas	151,544	0	1,374,946	931	1,206,532	1,037	265,343	37,209
• to water stress area	1,855	0	1,779	0	1,606	0	19,516	1,230
Water discharge – to all areas (ML)								
• Surface water	148,635	0	1,373,166	0	1,194,438	0	252,525	34,224
• Groundwater	0	0	0	0	0	0	0	0
• Seawater	1,054	0	0	931	0	1,037	0	2,407
• Third-party water	1,855	0	1,780	0	12,094	0	12,818	579
Pollutant load – to surface water (tonnes)								
• COD	-	-	-	-	11[d]	0[d]	4	15
• TDS	-	-	-	-	0[d]	0[d]	139	791
• TSS	-	-	-	-	13[d]	0[d]	9,374	1,812
• Oil & Grease	-	-	-	-	0[d]	0[d]	0	1
• Fe	-	-	-	-	0[d]	0[d]	99	40
Pollutant load – to seawater (tonnes)								
• COD	-	-	-	-	0[d]	0[d]	0	0
• TDS	-	-	-	-	0[d]	0[d]	0	0
• TSS	-	-	-	-	0[d]	0[d]	1	1
• Oil & Grease	-	-	-	-	0[d]	0[d]	0	0
• Fe	-	-	-	-	0[d]	0[d]	0	0
Pollutant load – to third-party water (tonnes)								
• COD	-	-	-	-	0[d]	54[d]	5	32
• TDS	-	-	-	-	0[d]	1,556[d]	114	1,374
• TSS	-	-	-	-	0[d]	33[d]	1	19
• Oil & Grease	-	-	-	-	0[d]	0[d]	0	0
• Fe	-	-	-	-	0[d]	0[d]	0	0
Change in water storage (ML)								
• All areas	-[b]		-[b]		-[b]		-80,968	
• Water stress area	-[b]		-[b]		-[b]		-80,968	
Water consumption (ML)								
• All areas	10,058		13,298		12,085		36,698	
• Water stress area	4,906		5,836		5,302		5,596	
Water consumption intensity								
• Mining business (m³/tonne finished coal)	0.154		0.237		0.243		1.26	
• Thermal power business (m³/MWh)	0.868		0.901		0.877		0.818	
• Renewable power business (m³/MWh)	0.019		0.013		0.044		0.1	

[a] Excludes coal logistics activity, 2 offices and 2 coal projects in Indonesia

[b] Data collection system under standardization

[c] From wastewater treatment plant of the third-party

[d] Data of Jun-Dec 2021 from thermal power business only

Waste

	2019			2020			2021			2022(a)		
	Onsite	Offsite	Total	Onsite	Offsite	Total	Onsite	Offsite	Total	Onsite	Offsite	Total
Waste generated (tonnes)			750,244			763,366			790,559			806,522
• Hazardous waste			20			103			2,585			2,642
• Non-hazardous waste			750,223			763,263			787,974			803,880
Waste diverted from disposal (tonnes)			759,783			770,827			780,678			802,394
• Hazardous waste	887	8,113	9,000	503	5,876	6,379	578	1,686	2,263	629	1,748	2,377
◦ Preparation for reuse	887	950	1,838	0	255	255	0	270	270	0	221	221
◦ Recycling	0	7,163	7,163	503	5,621	6,124	578	1,416	1,994	629	1,527	2,156
◦ Other recovery operations	0	0	0	0	0	0	0	0	0	0	0	0
• Non-hazardous waste	78	750,705	750,783	400	764,048	764,448	290	778,125	778,415	421	799,596	800,017
◦ Preparation for reuse	14	3	17	372	335,091	335,463	227	418,597	418,824	333	137	470
◦ Recycling	64	750,702	750,766	29	428,957	428,985	63	359,528	359,591	88	799,458	799,547
◦ Other recovery operations	0	0	0	0	0	0	0	0	0	0	0	0
Waste directed to disposal (tonnes)			4,256			5,371			5,653			7,164
• Hazardous waste	0	129	129	0	322	322	0	333	333	0	268	268
◦ Incineration (with energy recovery)	0	0	0	0	0	0	0	1	1	0	2	2
◦ Incineration (without energy recovery)	0	77	77	0	282	282	0	179	179	0	188	188
◦ Landfilling	0	0	0	0	1	1	0	153	153	0	78	78
◦ Other disposal	0	52	52	0	40	40	0	0	0	0	0	0
• Non-hazardous waste	346	3,781	4,127	1,720	3,329	5,049	1,759	3,562	5,321	1,543	5,353	6,896
◦ Incineration (with energy recovery)	0	0	0	0	0	0	0	72	72	0	228	228
◦ Incineration (without energy recovery)	0	0	0	0	0	0	0	0	0	0	0	0
◦ Landfilling	346	3,621	3,967	1,720	3,238	4,958	1,759	3,490	5,249	1,543	5,125	6,668
◦ Other disposal	0	160	160	0	91	91	0	0	0	0	0	0
Hazardous waste directed to disposal intensity												
• Mining business (kg/tonne finished coal)		0.004			0.010			0.012			0.010	
• Thermal power business (kg/MWh)		0.001			0.001			0			0.004	
• Renewable power business (kg/MWh)		0			0			0			0.001	
Non-hazardous waste directed to disposal intensity												
• Mining business (kg/tonne finished coal)		0.096			0.139			0.162			0.244	
• Thermal power business (kg/MWh)		0.162			0.101			0.131			0.120	
• Renewable power business (kg/MWh)		0.042			0.025			0.022			0.039	
Proportion of hazardous waste reused & recycled		99%			95%			87%			90%	
Proportion of non-hazardous waste reused & recycled		99%			99%			99%			99%	

(a) Excludes 2 offices and 2 coal projects in Indonesia

Mineral Waste

	2019	2020	2021	2022
Overburden(a) (million BCM)	253	182	176	179
Proportion of in-pit backfilled(a)	93%	91%	81%	92%
Tailings (dry tonnes)	410,697	388,658	598,071	591,091
Progress of in-pit backfilling against plan(a)	93%	94%	100%	94%
Proportion of mines with acid mine drainage management plan(b)	100%	100%	100%	100%
Number of tailings facilities				
• Active	3	3	3	3
• Closed	2	2	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

Biodiversity

	2019		2020		2021		2022	
	Operating[a]	Project[b]	Operating[a]	Project[b]	Operating[a]	Project[b]	Operating[a]	Project[b]
Business unit(s) in relation to protected area	4	2	4	3	4	2	4	3
• In the area	0	0	0	0	1	0	1	0
• Adjacent to	1	1	1	1	1	1	1	1
• Containing portions	3	1	3	2	2	1	2	2
Business unit(s) in relation to high biodiversity wilderness area	3	1	3	0	3	2	3	1
• In the area	3	1	3	0	3	1	3	1
• Adjacent to	0	0	0	0	0	1	0	0
• Containing portions	0	0	0	0	0	0	0	0
Number of business units								
• Assessed for potential biodiversity impact	10	3	10	6	10	8	43	7
• Identified as high potential of impact	7	3	7	3	7	4	7	1
• Assessed for biodiversity value	7	3	7	0	7	0	7	0
• Required biodiversity management plan[c]	7	3	7	3	7	0	7	1
• Implemented biodiversity management plan[c]	7	NA[d]	7	NA[d]	7	NA[d]	7	NA[d]
Area (hectares)								
• Assessed for potential biodiversity impact	67,279	434	51,686	4,272	46,031	34,436	46,031	200
• Assessed for biodiversity value	67,279	434	51,686	0	46,031	200	46,031	200
• With biodiversity management plan	67,279	NA[d]	51,686	NA[d]	46,031	NA[d]	46,031	NA[d]
• Biodiversity offset area	8,751	NA[d]	7,105	NA[d]	14,947	NA[d]	5,623	NA[d]
Proportion of business units								
• Assessed for potential biodiversity impact	100%	50%	100%	100%	100%	80%	88%	88%
• Assessed for biodiversity value	100%	100%	100%	0%	100%	0%	100%	0%
• With biodiversity management plan[c]	100%	NA[d]	100%	NA[d]	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

Mine Subsidence[a]

	2019	2020	2021	2022
Number of mines				
• Required subsidence management plan	5	5	5	5
• Implemented subsidence management plan	5	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%	100%	100%

[a] For underground mine only

Employee

	2019	2020	2021	2022
Total employee	5,359	5,482	5,488	5,538
Employee – by country				
• Thailand	7.9%	9.0%	8.5%	10.2%
• Indonesia	41.0%	43.0%	43.5%	42.9%
• China	17.2%	17.0%	17.2%	16.8%
• Australia	31.3%	28.6%	28.4%	28.1%
• Mongolia	1.8%	1.6%	1.6%	1.2%
• Singapore	0.3%	0.2%	0.2%	-
• Japan	0.4%	0.4%	0.3%	0.4%
• Vietnam	0.1%	0.2%	0.3%	0.3%
• The U.S.[b]	-	-	0.02%	0.1%
Employee – by gender				
• Male	85.8%	85.0%	85.2%	85.5%
• Female	14.2%	15.0%	14.8%	14.5%
Employee – by nationality				
• Thai	9.3%	9.6%	10.1%	11.5%
• Indonesian	40.1%	42.8%	42.5%	42.0%
• Chinese	17.0%	16.9%	17.1%	16.7%
• Australian	31.3%	28.6%	28.3%	28.0%
• Mongolian	1.6%	1.5%	1.4%	1.2%
• Singaporean	0.1%	0.1%	0.1%	0.1%
• Japanese	0.2%	0.2%	0.2%	0.3%
• Vietnamese	0.1%	0.2%	0.2%	0.2%
• The U.S.[b]	-	-	0.1%	0.1%
• Others	0.2%	0.2%	0.1%	0.1%
Employee – by age				
• Under 30	10.5%	11.6%	9.5%	11.3%
• 30-39	37.3%	37.0%	35.0%	33.9%
• 40-49	34.1%	33.3%	34.6%	34.8%
• Over 50	18.1%	18.2%	20.8%	20.0%
Employee – by type				
• Permanent	98.9%	93.2%	83.4%	71.4%
• Temporary	1.1%	6.8%	16.6%	28.6%
Employee – by level				
• Senior management	0.9%	0.9%	1.1%	2.2%
• Middle management	8.1%	8.5%	9.3%	10.7%
• Junior management	11.5%	11.7%	11.9%	22.4%
• Staff and supervisor	79.5%	78.9%	77.6%	64.7%
Management[a] – by age				
• Under 30	-	-	-	0.8%
• 30-39	-	-	-	19.0%
• 40-49	-	-	-	45.7%
• Over 50	-	-	-	34.5%

[a] Includes middle and senior managements

[b] Includes thermal power business only

New Employee

	2019	2020	2021	2022
New employee – total	582	168	299	1,020
New employee – by country				
• Thailand	87	53	52	164
• Indonesia	278	9	56	613
• China	56	62	44	70
• Australia	138	33	135	155
• Mongolia	7	2	2	0
• Singapore	3	0	0	0
• Japan	8	4	6	9
• Vietnam	5	5	3	7
• The U.S.[a]	-	-	1	2
New employee – by gender				
• Male	472	115	249	871
• Female	110	53	50	149

[a] Includes thermal power business only

Female Employee

%Female – by business	2019	2020	2021	2022
• All business	-	-	14.8%	14.5%
• Revenue-generating business				
◦ Mining business	-	-	17.0%	4.4%
◦ Gas business	-	-	0%	0%
◦ Thermal power business	-	-	13.6%	13.9%
◦ Renewable power business	-	-	3.8%	26.3%
◦ Energy technology business	-	-	0.2%	9.6%
• Enabling functions	-	-	65.4%	36.7%
• STEM-related positions[a]	-	-	-	-
%Female – by level				
• Total management[b]	10.1%	27.2%	26.2%	28.1%
• Senior management	-	-	-	16.1%
• Middle management	-	-	-	30.6%
• Junior management	-	-	-	24.6%
• Staff and supervisor	-	-	-	8.3%

[a] Science, technology, engineering and mathematics

[b] Includes middle and senior managements

Remuneration

	2019	2020	2021	2022
Female to male remuneration ratio	-	-	0.94	0.69
Female to male remuneration ratio – by level				
• Senior management	-	-	1.14	1.15[a]
• Middle management	-	-	0.93	0.89[a]
• Junior management	-	-	0.93	0.89[a]
• Staff and supervisor	-	-	0.85	1.10[a]

[a] Includes salary for employee based in Thailand and Thai expat in each country only

Employee Turnover

	2019	2020	2021	2022
Total turnover rate	5.3%	13.9%	7.3%	5.7%
Voluntary turnover rate	3.0%	5.8%	4.3%	4.0%
Turnover rate – by country				
• Thailand	6.4%	8.1%	8.7%	11.5%
• Indonesia	17.6%	21.1%	5.3%	1.2%
• China	6.7%	5.3%	6.6%	5.2%
• Australia	6.7%	10.5%	9.2%	10.0%
• Mongolia	9.5%	5.6%	8.1%	15.0%
• Japan	0%	9.1%	55.6%	13.5%
• Vietnam	0%	0%	33.3%	36.1%
• The U.S.[a]	-	-	-	0%
Turnover rate – by age				
• Under 30	-	-	-	0.8%
• 30-39	-	-	-	2.0%
• 40-49	-	-	-	0.9%
• Over 50	-	-	-	1.9%
Turnover rate – by gender				
• Male	-	-	-	4.6%
• Female	-	-	-	1.1%
Turnover rate – by level				
• Senior management	-	-	-	0.2%
• Middle management	-	-	-	0.8%
• Junior management	-	-	-	0.9%
• Staff and supervisor	-	-	-	3.7%

[a] Includes thermal power business only

Collective Bargaining Agreements

	2019	2020	2021	2022
Employees covered by collective bargaining agreements[a]	62%	58%	72%	65%
• Thailand	0%	0%	0%	0%
• Indonesia	76%	76%	69%	66%
• China	0%	0%	0%	87%
• Australia	75%	76%	78%	77%
• Mongolia	0%	0%	0%	0%
• Japan	0%	0%	0%	0%
• Lao PDR	0%	0%	0%	0%
• Vietnam	0%	0%	0%	0%
• The U.S.[b]	-	-	-	-

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

[b] Includes thermal power business only

Local Employment[a]

	2019	2020	2021	2022
Local employment (all levels) – by country				
• Thailand	-	-	98.7%	97.9%
• Indonesia	-	-	97.7%	97.7%
• China	-	-	99.0%	99.4%
• Australia	-	-	99.8%	99.5%
• Mongolia	-	-	90.7%	92.6%
• Japan	-	-	77.8%	66.7%
• Vietnam	-	-	66.7%	78.6%
• The U.S.[b]	-	-	0%	20.0%
Local employment (senior management level) – by country				
• Thailand	-	-	94.1%	91.8%
• Indonesia	-	-	100%	59.1%
• China	-	-	25.0%	57.1%
• Australia	-	-	80.0%	90.0%
• Mongolia	-	-	0%	33.3%
• Japan	-	-	100%	80.0%
• Vietnam	-	-	0%	50.0%
• The U.S.[b]	-	-	100%	0%

[a] Born and live in that particular country

[b] Includes thermal power business only

Corporate Culture

	2019	2020	2021	2022
Level of alignment between employee behavior and the corporate culture "Banpu Heart"	77%	75%	78%	79%
• Thailand	69%	72%	73%	78%
• Indonesia	71%	71%	73%	75%
• China	95%	94%	95%	92%
• Australia	70%	66%	72%	75%
• Mongolia	83%	78%	75%	69%
• Japan	79%	56%	57%	72%
• Vietnam	-	-	-	67%

Employee Engagement

	2019	2020	2021	2022
Employee engagement level	78%	76%	74%	79%
• Thailand	68%	69%	69%	72%
• Indonesia	73%	73%	73%	79%
• China	94%	92%	93%	96%
• Australia	-	-	40%	49%
• Mongolia	76%	52%	50%	52%
• Japan	50%	38%	31%	47%
• Vietnam	-	-	-	82%

Employee Management

	2019	2020	2021	2022
Employees that take parental leave				
• Thailand	3	4	15	7
• Indonesia	167	119	113	34
• China	9	4	2	6
• Australia	23	19	10	6
• Mongolia	6	0	3	4
• Japan	0	0	0	1
• Vietnam	0	0	0	0
• The U.S.[b]	-	-	-	0
Return to work after parental leave				
• Thailand	100%	100%	100%	86%
• Indonesia	100%	100%	100%	100%
• China	22%	100%	100%	67%
• Australia	91%	100%	100%	100%
• Mongolia	100%	NA[a]	100%	100%
• Japan	NA[a]	NA[a]	NA[a]	100%
• Vietnam	NA[a]	NA[a]	NA[a]	NA[a]
• The U.S.[b]	-	-	-	NA[a]
Major layoff – by country				
• Thailand	-	0	0	0
• Indonesia	-	0	0	142
• China	-	0	0	0
• Australia	-	0	0	0
• Mongolia	-	0	0	14
• Japan	-	0	0	2
• Vietnam	-	0	0	0
• The U.S.[b]	-	-	-	0

[a] No parental leaves

[b] Includes thermal power business only

Training

	2019	2020	2021	2022
Average cost of training – by nationality (USD)	-	-	-	568
• Thai	1,554	1,115	850	940
• Indonesian	239	47	115	194
• Chinese	276	271	227	209
• Australian	1,668	1,865	1,100	1,157
• Mongolian	120	5	111	100
• American	-	-	-	-
• Others[a]	-	-	-	-
Average cost of training – by level (USD)				
• Senior management	2,226	2,402	620	2,092
• Middle management	948	771	735	871
• Junior management	724	643	629	546
• Staff and supervisor	840	951	458	568
Average cost of training – by program (USD)				
• Technical/functional	-	-	-	414
• Leadership	-	-	-	154
Average hours of training – by nationality	-	-	-	22.9
• Thai	19.2	21.0	29.7	24.3
• Indonesian	18.3	7.5	9.4	14.1
• Chinese	29.0	35.0	28.5	36.9
• Australian	24.5	27.0	25.0	25.4
• Mongolian	42.0	4.6	14.0	12.0
• American	-	-	-	-
• Others[a]	-	-	-	-
Average hours of training – by level				
• Senior management	25.2	27.2	11.6	22.7
• Middle management	22.2	18.0	19.1	23.4
• Junior management	27.2	24.1	20.6	19.7
• Staff and supervisor	22.0	24.9	21.1	23.7
Average hours of training – by program				
• Technical/functional	-	-	-	18.0
• Leadership	-	-	-	4.9

[a] Include Singapore, Japan and Lao PDR

Human Capital Development

	2019	2020	2021	2022
Proportion of open positions filled by internal candidates	-	-	29%	26%
Proportion of high critical positions with successor identified	100%	63%	79%	57%
Proportion of employee with individual development plan	62%	57%	56%	70%
Employee attending leadership development programs (cumulative)	693	763	817	919
Employee attending leadership development programs (annual)				
• Strategic leader	20	0	0	0
• Business leader	27	0	0	28
• First line leader	25	26	26	28
• Future leader[a]	27	27	28	29
• Engaging leader[a]	40	17	0	17
Success of leadership development programs[b]				
• Strategic leader	78%	78%	78%	78%
• Business leader	87%	87%	87%	92%
• First Line leader	88%	82%	84%	86%
• Future leader[a]	92%	94%	82%	86%
• Engaging leader[a]	90%	90%	90%	90%

[a] Data covers only employee in Thailand

[b] % Applied learning according to the program evaluation

Occupational Health & Safety

	2019[a]		2020[a]		2021[a]		2022[d]	
	Employee	Contractor	Employee	Contractor	Employee	Contractor	Employee	Contractor
Total number of workers		-		18,478		21,841		31,949
	-	-	5,028	13,450	4,781	17,060	5,238	16,483
Number of hours worked		64,982,265		56,995,326		54,207,231		52,144,381
	10,277,992	54,704,273	9,696,278	47,299,048	9,080,183	45,127,048	9,562,762	42,581,619
Workers covered by OHS management system		-		18,439		21,841		21,731
	-	-	4,989	13,450	4,781	17,060	5,238	16,493
Coverage of workers covered by OHS management system		-		100%		100%		68%
	-	-	99%	100%	100%	100%	100%	62%
Workers covered by OHS management system that has been internally audited		-		17,335		20,055		17,746
	-	-	4,045	13,290	4,244	15,811	4,321	13,425
Coverage of workers covered by OHS management system that has been internally audited		-		94%		92%		56%
	-	-	80%	99%	89%	93%	82%	50%
Workers covered by OHS management system that has been audited or certified by third-party		-		13,125		12,359		13,660
	-	-	2,143	10,982	2,043	10,316	2,203	11,457
Coverage of workers covered by OHS management system that has been audited or certified by third-party		-		71%		57%		43%
	-	-	43%	82%	43%	60%	42%	43%
Number of fatalities from work-related injury		0		0		1		1
	0	0	0	0	0	1	1	0
Fatality rate (person/million man-hour)		0.00		0.00		0.02		0.02
	0.00	0.00	0.00	0.00	0.00	0.02	0.10	0.00
Number of recordable work-related injuries		215		201		168		161
	171	44	164	37	145	23	133	28
Total recordable injury frequency rate (TRIFR) (person/million man-hour)		3.31		3.53		3.10		3.09
	16.63	0.80	16.91	0.78	15.97	0.51	13.91	0.66
Number of lost time injury		-		39		22		32
	-	-	29	10	17	5	23	9
Lost time injury frequency rate (LTIFR) (person/million man-hour)		0.66		0.68		0.41		0.61
	2.82	0.26	2.99	0.21	1.87	0.11	2.41	0.21
Number of high-consequence work-related injuries		3		1		2		1
	1	2	0	1	2	0	0	1
High-consequence work-related injury frequency rate (person/million man-hour)		0.05		0.02		0.04		0.02
	0.10	0.04	0.00	0.02	0.22	0.00	0.00	0.02
Tier-1 process safety event[c]		3		2		2		2
Tier-1 process safety event rate[c] (case/million man-hour)		0.05		0.04		0.04		0.04
Number of fatalities as a result of work-related ill health		-		0		0		0
	-	-	0	0	0	0	0	0
Number of total recordable work-related ill health		-		0		0		0
	-	-	0	0	0	0	0	0
Number of lost day		-		1,627		7,055		7,067
	-	-	758	869	948	6,107	6,850	217
Injury severity rate (ISR)[b] (day/million man-hour)		29.27		28.55		130.15		135.53
	145.16	7.49	78.17	18.37	104.40	135.33	716.32	5.10

[a] Excludes employees & contractors of renewable power business in Japan, Vietnam, and Australia

[b] Refers to American National Standards Institute (ANSI) standard

[c] Refers to internal definition with criteria such as fatality, catastrophic damage to ecosystems, or property damage >100,000 USD

[d] Excludes employees & contractors of renewable power business in Japan and Vietnam

Community

	2019		2020		2021		2022	
	Operation	Project	Operation	Project	Operation	Project	Operation	Project
Total number of business units	-	-	-	-	-	-	21	8
Social Impact Assessment (SIA)[a]								
• Proportion of business units with SIA	-	-	-	-	-	-	67%	63%
• Proportion of business units with SIA report publicly disclosed	-	-	-	-	-	-	33%	25%
• Number of business units with significant actual and potential negative impacts	-	-	-	-	-	-	1	0
Community Consultation (CC)								
• Number of operations required CC	-	-	-	-	-	-	17	2
• Proportion of operations required CC	-	-	-	-	-	-	81%	25%
• Proportion of operations with CC committee	-	-	-	-	-	-	48%	38%
• Proportion of operations with CC committee include vulnerable groups	-	-	-	-	-	-	48%	38%
• Number of CC committee meetings	-	-	-	-	-	-	44	0
Community complaints								
• Total number of significant issues	-	-	-	-	-	-	3	-
• Proportion of issues resolved through dispute mechanism	-	-	-	-	-	-	33%	-
• Total number of significant complaints	-	-	-	-	-	-	97	-
• Proportion of complaints resolved through dispute mechanism	50%	-	100%	-	NA[a]	-	92%	-
Community engagement								
• Proportion of operations with stakeholder mapping	-	-	-	-	-	-	81%	-
• Proportion of operations with stakeholder engagement plans	-	-	-	-	-	-	81%	-
• Proportion of operations with community perception surveys	-	-	-	-	-	-	48%	-
• Community perception level	-	-	-	-	-	-	Satisfied	-
• Proportion of operations with formal local community dispute mechanism	-	-	-	-	-	-	100%	-
Community development[b]								
• Proportion of operations with community development programs	-	-	-	-	-	-	100%	-
• Proportion of annual stakeholder satisfaction survey	-	-	-	-	-	-	100%	-
• Average of stakeholder satisfaction level	71%	-	78%	-	76%	-	85%	-

[a] No significant complaints

[b] Includes mining business in Indonesia only

Indigenous Peoples

	2019	2020	2021	2022
Total number of violations	0	0	0	0
Proportion of violations resolved through a dispute mechanism	NA[a]	NA[a]	NA[a]	NA[a]

[a] No violations

Resettlement

	2019	2020	2021	2022
Number of resettlements	0	0	0	0
Number of people physically or economically displaced and compensation	-	-	-	-
Number of significant resettlement complaints	0	0	0	0
Proportion of significant resettlement complaints resolved through a dispute mechanism	NA[a]	NA[a]	NA[a]	NA[a]

[a] No significant complaints

Mine Closure

	2019	2020	2021	2022
Number of mines				
• Mining phase	12[a]	12	12	9[a]
• Care & maintenance status	-	-	-	2
• Mine closure phase	10	8	7	14
• Post closure phase	-	-	-	-
Mine closure plan				
• Number of mines with mine closure plan	22	20	19	19
• Proportion of mines with mine closure plan	100%	100%	100%	100%
Progress of revegetation against plan[b]	94%	91%	100%	98%
Progress of mine closure activity against plan[c]	100%	100%	100%	96%
Disturbed area (hectare)				
• Total land own at year end	93,036	92,775	92,775	93,106
• Total disturbed area at year end	25,580	20,748	25,283	23,946
• Newly disturbed area during the year	859	1,154	557	680
Rehabilitated area (hectare)				
• Total rehabilitated area at year end	12,997	13,189	14,841	14,272
• Newly rehabilitated area during the year	840	733	825	699
• Total area disturbed and not yet rehabilitated	12,583	7,559	10,443	9,674
Progress of land management				
• Total disturbed area to total land own	27%	22%	27%	26%
• Total rehabilitated area to total disturbed area	51%	64%	59%	60%

[a] Includes mine(s) in care & maintenance status

[b] For open-pit mine only

[c] For underground mine only

Human Rights

	2019	2020	2021	2022
Coverage of business units assessed for human rights risks[a]	-[f]	92%	86%	84%
Number of operations assessed for human rights risks[a]				
• Thailand	-	1	1	1
• Indonesia	-	5	5	5
• China	-	10	10	10
• Australia	-	5	5	5
• Japan	-	12	15	15
• Vietnam	-	0	0	0
• The U.S.	-	0	0	0
Coverage of operations assessed for human rights risks[a]				
• Thailand	-	100%	100%	100%
• Indonesia	-	100%	100%	100%
• China	-	100%	100%	100%
• Australia	-	100%	100%	100%
• Japan	-	100%	100%	100%
• Vietnam	-	0%	0%	0%
• The U.S.	-	0%	0%	0%
Coverage of business units with risk management plans[b]	-[f]	N/A[c]	N/A[c]	N/A[c]
Number of significant human rights issues	0	0	0	0
Proportion of significant human rights issues resolved through a dispute mechanism	N/A[d]	N/A[d]	N/A[d]	N/A[d]
Discrimination and harassment				
• Number of discrimination and harassment incidents	0	0	0	0
• Proportion of discrimination and harassment incidents resolved through a dispute mechanism	N/A[e]	N/A[e]	N/A[e]	N/A[e]

[a] Only operating site

[b] For business unit(s) identified as high human rights risks only

[c] No business units with high human rights risks

[d] No significant issues

[e] No incidents

[f] Assessment process under standardization

GRI INDEX

Statement of use	Banpu has reported reference with GRI standards for the period January 1st to December 31st 2022
GRI 1 used	GRI 1: Foundation 2021
Applicable GRI Sector Standard (s)	Coal Sector

NA: Not Appicable

IU: Information unavailable/incomplete

GRI Standards		Disclosure	Sector	Page	Omission			External Assurance
					Requirement	Reason	Details	
2: General Disclosure 2021	2-1	Organizational details		1,10-11				
	2-2	Entities included in the organization's sustainability reporting		88				
	2-3	Reporting period, frequency and contact point		1				
	2-4	Restatements of information		1				
	2-5	External assurance		116-118				
	2-6	Activities, value chain and other business relationships		10-11			-	
	2-7	Employees		99			-	
	2-8	Workers who are not employees		-	a,b,c	IU		
	2-9	Governance structure and composition		14-15				
	2-10	Nomination and selection of the highest governance body		15				
	2-11	Chair of the highest governance body		15				
	2-12	Role of the highest governance body in overseeing the management of impacts		14,26-27				
	2-13	Delegation of responsibility for managing impacts		26	b	IU	In process of development and will be disclosed in SD Report 2023	
	2-14	Role of the highest governance body in sustainability reporting		14				
	2-15	Conflicts of interest		31	b	IU		
	2-16	Communication of critical concerns		44-45				
	2-17	Collective knowledge of the highest governance body		28				
	2-18	Evaluation of the performance of the highest governance body		15	a,c	IU	In process of development and will be disclosed in SD Report 2023	
	2-19	Remuneration policies		-	a,b	IU		
	2-20	Process to determine remuneration		14				
	2-21	Annual total compensation ratio		-	a,b,c	IU		
	2-22	Statement on sustainable development strategy		3,5				
	2-23	Policy commitments	12.22.1	-				
	2-24	Embedding policy commitments		26,34				
	2-25	Processes to remediate negative impacts		-	a,b,c,d,e	IU	In process of development and will be disclosed in SD Report 2023	
	2-26	Mechanisms for seeking advice and raising concerns		31			-	
	2-27	Compliance with laws and regulations		93				

GRI Standards	Disclosure		Sector	Page	Omission			External Assurance
					Requirement	Reason	Details	
2: General Disclosure 2021	2-28	Membership associations		-				
	2-29	Approach to stakeholder engagement		16,86-87				
	2-30	Collective bargaining agreements		101				
	EU1	Installed capacity, broken down by primary energy source and by regulatory regime		84-85				
	EU2	Net energy output broken down by primary energy source and by regulatory regime		94			-	
Sustainability Governance								
	3-3	Management of material topics		26-27				
Business Ethics								
205: Anti-corruption 2016	3-3	Management of material topics	12.20.1	30-31				
	205-1	Operations assessed for risks related to corruption	12.20.2 12.20.5 12.20.6	31				
	205-2	Communication and training about anti-corruption policies and procedures	12.20.3	30-31				
	205-3	Confirmed incidents of corruption and actions taken	12.20.4	90				
206: Anti-competitive Behavior 2016	206-1	Legal actions for anti-competitive behavior, anti-trust, and monopoly practices		90				
Digital Transformation								
	3-3	Management of material topics		32-33				
Supplier Management								
204: Procurement Practices 2016	3-3	Management of material topics		34-35				
	204-1	Proportion of spending on local suppliers	12.8.6	91				
308: Supplier Environmental Assessment 2016	308-1	New suppliers that were screened using environmental criteria		-	a	IU		
	308-2	Negative environmental impacts in the supply chain and actions taken		34				
414: Supplier Social Assessment 2016	414-1	New suppliers that were screened using social criteria	12.15.8 12.16.3 12.17.3	-	a	IU		
	414-2	Negative social impacts in the supply chain and actions taken	12.15.9	34				

GRI Standards		Disclosure	Sector	Page	Omission			External Assurance
					Requirement	Reason	Details	
Customer Management								
301: Materials 2016	3-3	Management of material topics		36-37				
	301-1	Materials used by weight or volume		-	a	NA		
	301-2	Recycled input materials used		-	a	NA		
	301-3	Reclaimed products and their packaging materials		-	a,b	NA		
416: Customer Health and Safety 2016	416-1	Assessment of the health and safety impacts of product and service categories		-	a	IU		
	416-2	Incidents of non-compliance concerning the health and safety impacts of products and services		91				
417: Marketing and Labeling 2016	417-1	Requirements for product and service information and labeling		-	a	NA		
	417-2	Incidents of non-compliance concerning product and service information and labeling		-	a	NA		
	417-3	Incidents of non-compliance concerning marketing communications		-	a	NA		
418: Customer Privacy 2016	418-1	Substantiated complaints concerning breaches of customer privacy and losses of customer data		91	b,c	NA		
Economic Distribution								
201: Economic Performance 2016	3-3	Management of material topics	12.8.1 12.21.1	38-39				
	201-1	Direct economic value generated and distributed	12.8.2 12.21.2	38,92				
	201-2	Financial implications and other risks and opportunities due to climate change	12.2.2	51				
	201-3	Defined benefit plan obligations and other retirement plans		64			Information available on website	
	201-4	Financial assistance received from government	12.21.3	-	a	IU		
203: Indirect Economic Impacts 2016	203-1	Infrastructure investments and services supported	12.8.4	39				
	203-2	Significant indirect economic impacts	12.8.5	80-83	a,b	IU		
207: Tax 2019	207-1	Approach to tax	12.21.4	39	a	IU		
	207-2	Tax governance, control, and risk management	12.21.5	-	a	IU		
	207-3	Stakeholder engagement and management of concerns related to tax	12.21.6	-	a	IU		
	207-4	Country-by-country reporting	12.21.7	89	a,b,c	IU		
		Additional sector disclosure	12.21.8	-		IU		
415: Public Policy 2016	415-1	Political contributions	12.22.2	89				

GRI Standards		Disclosure	Sector	Page	Omission			External Assurance
					Requirement	Reason	Details	
Reliability of Power Plants								
Electric Utilities	3-3	Management of material topics		40				
	EU11	Average generation efficiency of thermal plants by energy source and by regulatory regime		93				
	EU30	Average plant availability factor by energy source and by regulatory regime		93				
Business Continuity								
	3-3	Management of material topics		41				
Compliance								
	3-3	Management of material topics		42				
		Additional sector disclosure	12.13.3	93				
Risk Management								
	3-3	Management of material topics		44-45				
Data Privacy & Cybersecurity								
	3-3	Management of material topics		43				
GHG Emissions								
305: Emissions 2016	3-3	Management of material topics	12.2.1	48-51				
	305-1	Direct (Scope 1) GHG emissions	12.1.5	95				
	305-2	Energy indirect (Scope 2) GHG emissions		95	b	NA		
	305-3	Other indirect (Scope 3) GHG emissions		51,95	b,c,d,e	IU		Yes
	305-4	GHG emissions intensity		95				
	305-5	Reduction of GHG emissions	12.2.3 12.2.4	-	a,b,c,d,e	IU		
Energy								
302: Energy 2016	3-3	Management of material topics		52-53				
	302-1	Energy consumption within the organization		95				
	302-2	Energy consumption outside of the organization		-	a,b,c	NA		
	302-3	Energy intensity		95				
	302-4	Reduction of energy consumption		-	a,b,c,d	IU		
	302-5	Reductions in energy requirements of products and services		-	a,b,c	IU		

| GRI Standards | | Disclosure | Sector | Page | Omission | | | External Assurance |
					Requirement	Reason	Details	
Air Emissions								
305: Emissions 2016	3-3	Management of material topics	12.4.1	54-55				
	305-6	Emissions of ozone-depleting substances (ODS)		94				Yes
	305-7	Nitrogen oxides (NOx), sulfur oxides (SOx), and other significant air emissions	12.4.2	94			The NOx and PM emitted from non-point source are excluded and will be disclosed in SD Report 2023. Additional sources of PM from power plants will be disclosed in SD Report 2026.	Yes
Waste								
306: Waste 2020	3-3	Management of material topics		56-57				
	306-1	Waste generation and significant waste-related impacts	12.6.2	-	a	IU	In process of development and will be disclosed in SD Report 2024	
	306-2	Management of significant waste related impacts	12.6.3	56-57				
	306-3	Waste generated	12.6.4	97				Yes
	306-4	Waste diverted from disposal	12.6.5	97				Yes
	306-5	Waste directed to disposal	12.6.6	97	12.6.6	IU		Yes
Mineral Waste								
	3-3	Management of material topics	12.13.1	56-57				
		Additional sector disclosure	12.13.4	97				
Biodiversity								
304: Biodiversity 2016	3-3	Management of material topics	12.5.1	58-59				
	304-1	Operational sites owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas	12.5.2	98				
	304-2	Significant impacts of activities, products and services on biodiversity	12.5.3	-	a,b	IU		
	304-3	Habitats protected or restored	12.5.4	98				
	304-4	IUCN Red List species and national conservation list species with habitats in areas affected by operations	12.5.5	59				
Water								
303: Water and Effluents 2018	3-3	Management of material topics	12.7.1	60				Yes
	303-1	Interactions with water as a shared resource	12.7.2	60	b,c	IU	In process of development and will be disclosed in SD Report 2025	
	303-2	Management of water discharge related impacts	12.7.3	60				
	303-3	Water withdrawal	12.7.4	96				Yes
	303-4	Water discharge	12.7.5	96			Pollutant load for Centennial are not available and will be disclosed in SD Report 2024	Yes
	303-5	Water consumption	12.7.6	96				Yes

GRI Standards		Disclosure	Sector	Page	Omission			External Assurance
					Requirement	Reason	Details	
Mine Subsidence								
	3-3	Management of material topics		61				
Employee Engagement								
202: Market Presence 2016	3-3	Management of material topics	12.15.1	64-66				
	202-1	Ratios of standard entry level wage by gender compared to local minimum wage	12.19.1	-		IU		
	202-2	Proportion of senior management hired from the local community	12.19.2	101		IU		
401: Employment 2016	401-1	New employee hires and employee turnover	12.15.2	99-100				
	401-2	Benefits provided to full-time employees that are not provided to temporary or parttime employees	12.15.3	-		IU		
	401-3	Parental leave	12.15.4 12.19.4	102				
402: Labor/ Management Relations 2016	402-1	Minimum notice periods regarding operational changes	12.3.2 12.15.5	-		IU		
405: Diversity and Equal Opportunity 2016	405-1	Diversity of governance bodies and employees	12.19.6	90,99				
	405-2	Ratio of basic salary and remuneration of women to men	12.9.7	100				
Human Capital Development								
404: Training and Education 2016	3-3	Management of material topics		67-69				
	404-1	Average hours of training per year per employee	12.15.6 12.19.5	103				
	404-2	Programs for upgrading employee skills and transition assistance programs	12.3.3 12.15.7	68-69				
	404-3	Percentage of employees receiving regular performance and career development reviews		-	a	IU		

| GRI Standards | | Disclosure | Sector | Page | Omission | | | External Assurance |
					Requirement	Reason	Details	
Occupational Health & Safety								
403: ccupational Health & Safety 2018	3-3	Management of material topics	12.14.1	70-73				Yes
	403-1	Occupational health and safety management system	12.14.2	70				Yes
	403-2	Hazard identification, risk assessment, and incident investigation	12.14.3	70			Information available on website	Yes
	403-3	Occupational health services	12.14.4	70			Information available on website	Yes
	403-4	Worker participation, consultation, and communication on occupational health and safety	12.14.5	70			Information available on website	Yes
	403-5	Worker training on occupational health and safety	12.14.6	70			Information available on website	Yes
	403-6	Promotion of worker health	12.14.7	70			Information available on website	Yes
	403-7	Prevention and mitigation of occupational health and safety impacts directly linked by business relationships	12.14.8	70			Information available on website	Yes
	403-8	Workers covered by an occupational health and safety management system	12.14.9	104			Information available on website	Yes
	403-9	Work-related injuries	12.14.10	104			The working hours of contractor with less then 5 consecutive working days are included except Indonesia and will be disclosed in SD Report 2024	Yes
	403-10	Work-related ill health	12.14.11	104	c	IU	In process of development and will be disclosed in SD Report 2023	Yes
Human Rights								
406: Non-discrimination 2016	3-3	Management of material topics	12.12.1 12.16.1 12.17.1	74-75				
	406-1	Incidents of discrimination and corrective actions taken	12.19.8	106				
407: Freedom of Association and Collective Bargaining 2016	407-1	Operations and suppliers in which the right to freedom of association and collective bargaining may be at risk	12.18.2	-	a	IU	In process of development and will be disclosed in SD Report 2023	
408: Child Labor 2016	408-1	Operations and suppliers at significant risk for incidents of child labor	12.16.2	-		IU		
409: Forced or Compulsory Labor 2016	409-1	Operations and suppliers at significant risk for incidents of forced or compulsory labor	12.17.2	-	a,b	IU	In process of development and will be disclosed in SD Report 2024	
410: Security Practices 2016	410-1	Security personnel trained in human rights policies or procedures	12.12.2	-	a,b	IU	In process of development and will be disclosed in SD Report 2024	

GRI Standards		Disclosure	Sector	Page	Omission			External Assurance
					Requirement	Reason	Details	
Community Engagement								
413: Local Communities 2016	3-3	Management of material topics	12.9.1 12.10.1	76-78				
	413-1	Operations with local community engagement, impact assessments, and development programs	12.9.2	105				
	413-2	Operations with significant actual and potential negative impacts on local communities	12.9.3 12.9.4	-		IU		
Resettlement								
Electric utilities	3-3	Management of material topics	12.10.2	77-78				
	EU22	Number of people physically or economically displaced and compensation, broken down by type of project		105				
Indigenous Peoples								
411: Rights of Indigenous Peoples 2016	3-3	Management of material topics	12.11.1	77-78				
	411-1	Incidents of violations involving rights of indigenous peoples	12.11.2 12.11.3 12.11.4	105				
Mine Closure								
	3-3	Management of material topics	12.3.1 12.10.1 12.10.2	79				
		Additional sector disclosures	12.3.4 12.3.5 12.3.6	106				
Community Development								
413: Local Communities 2016	3-3	Management of material topics		80-83				
	413-1	Operations with local community engagement, impact assessments, and development programs	12.9.2	105				
	413-2	Operations with significant actual and potential negative impacts on local communities	12.9.3 12.9.4	-		IU		

SDGs CONTRIBUTION MATRIX

Material topic	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Sustainability Governance																● (I)	
Business Ethics																● (I)	
Digital Transformation								● (I)									
Supplier Management								● (D)								● (I)	
Customer Management																● (I)	
Economic Distribution								● (I)									
Reliability of Power Plants								● (I)									
Business Continuity								● (I)									
Compliance																● (I)	
Risk Management																● (I)	
Data Privacy & Cybersecurity																● (I)	
GHG Emissions							● (D)						● (D)				
Energy											● (D)		● (I)				
Air Emissions			● (I)									● (D)					
Waste						● (D)						● (I)					
Biodiversity															● (D)		
Water						● (D)						● (I)					
Mine Subsidence															● (I)		
Employee Engagement								● (I)		● (I)							
Human Capital Development								● (I)									
Occupational Health & Safety								● (D)									
Human Rights								● (D)									
Community Engagement										● (I)	● (I)					● (I)	● (D)
Mine Closure															● (D)		
Community Development		● (I)															● (D)

● Direct Contribution
● Indirect Contribution

LRQA Independent Assurance Statement
Relating to Banpu Public Company Limited's Sustainability Report for the calendar year 2022

This Assurance Statement has been prepared for Banpu Public Company Limited in accordance with our contract but is intended for the readers of this Report.

Terms of engagement
LRQA was commissioned by Banpu Public Company Limited (Banpu) to provide independent assurance on its Sustainability Report 2022 ("the report") against the assurance criteria below to a moderate level of assurance and materiality of the professional judgement of the verifier using Accountability's AA1000AS v3 for type 2 assurance.

Our assurance engagement covered Banpu's global operations and activities and specifically the following requirements:
- Confirming that the report is
  - adhering to the AccountAbility Principles (AA1000AP (2018)) [a]
  - referring to the GRI Standard 2021[b]
  - referring to GRI 12 Coal Sector Standard 2022 and GRI Electric Utilities sector disclosures.
- Evaluating the reliability of data and information for only the selected indicators listed below: [c] , [1]
  - GRI 303-3 Water withdrawal (2018)[2]
  - GRI 303-4 Water discharge (2018)[2]
  - GRI 303-5 Water consumption (2018)[2]
  - GRI 305-3 Other indirect (Scope 3) GHG emissions (2016)[3]
  - GRI 305-7 Nitrogen Oxides (NOx), Sulfur Oxides (SOx) and other significant air emissions (2016)[2]
  - GRI 306-3 Waste generated (2020)[4]
  - GRI 306-4 Waste diverted from disposal (2020)[4]
  - GRI 306-5 Waste directed to disposal (2020)[4]
  - GRI 403-1 to 403-7 management disclosure Occupational Health and Safety (2018)[5]
  - GRI 403-8 Workers covered by an occupational health and safety management system (2018)[5]
  - GRI 403-9 Work-related injuries (2018)[5]
  - Lost time injury frequency rate (LTIFR) and injury severity rate (ISR)[5]
  - Tier-1 Process safety event rate[5]

Note:
1. Banpu's report boundary excludes the business entities that the Company holds less than 50% of shares and does not have management control i.e. Mining business in China, Thermal power business in Thailand, Lao PDR and Japan, Solar rooftop & floating business in Vietnam, Energy storage system business in China and Thailand, E-Mobility business in Thailand Banpu's report boundary also excludes business entities that the Company holds a greater than 50% of shares and has management control, but the data collection system is under standardization i.e. Thermal power business in the U.S., Solar rooftop & floating business in Indonesia, Japan and China, Smart cities community business in Thailand, Energy trading business in Japan and Gas business in the U.S.
2. Our scope of verification engagement of Water and Air emissions data includes mining business in Indonesia and Australia; thermal power business in China; renewable power business in China, Japan, Vietnam and Australia; solar rooftop and floating business in Thailand; and the offices in Thailand, Indonesia, China, Australia, Japan, and Vietnam. However, the water data excludes coal logistics activities and 2 coal projects in Indonesia.
3. Reporting of scope 3 GHG emission is limited to emissions from used of sold product from Mining business only.
4. Our scope of verification engagement of Waste data includes mining business in Indonesia, and Australia; thermal power business in China; renewable power business in China, Vietnam and Australia; solar rooftop and floating business in Thailand; and the offices in Thailand, Indonesia, China, Australia, Japan, and Vietnam. However, the wastes data exclude 2 coal projects in Indonesia.
5. Our scope of verification engagement of Occupational health and safety data includes mining business in Indonesia, Australia and Mongolia; thermal power business in China; renewable power business in China, Vietnam and Australia; solar rooftop and floating business in Thailand; and the offices in Thailand, Indonesia, China, Australia, Japan, and Vietnam.

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[a] https://www.accountability.org/
[b] https://www.globalreporting.org/
[c] GHG quantification is subject to inherent uncertainty.

LRQA's responsibility is only to Banpu. LRQA disclaims any liability or responsibility to others as explained in the end footnote. Banpu's responsibility is for collecting, aggregating, analysing and presenting all the data and information within the report and for maintaining effective internal controls over the systems from which the report is derived. Ultimately, the report has been approved by, and remains the responsibility of Banpu.

LRQA's Opinion

Based on LRQA's approach nothing has come to our attention that would cause us to believe that Banpu has not, in all material respects:

- Met the requirements above, with the exception of some omissions in the reported data. However, these omissions, and the reason for these omissions, are both clearly stated in the GRI content index within the report i.e.
  - Pollutant load of discharged water of Centennial is excluded from GRI 303-4.
  - The NOx and PM emitted from non-point sources are excluded from GRI 305-7 due to unavailable data.
  - The working hours of contractors with less than 5 consecutive working days in Indonesia is excluded.
- Disclosed reliable performance data and information for the selected indicators above.
- Covered all the issues that are important to the stakeholders and readers of this report.

The opinion expressed is formed on the basis of a moderate level of assurance and at the materiality of the professional judgement of the verifier.

Note: The extent of evidence-gathering for a moderate assurance engagement is less than for a high assurance engagement. Moderate assurance engagements focus on aggregated data rather than physically checking source data at sites. Consequently, the level of assurance obtained in a moderate assurance engagement is substantially lower than the assurance that would have been obtained had a high assurance engagement been performed.

LRQA's approach

LRQA's assurance engagements are carried out in accordance with our verification procedure. The following tasks though were undertaken as part of the evidence gathering process for this assurance engagement:

- Assessing Banpu's approach to stakeholder engagement to confirm that issues raised by stakeholders were captured correctly. We did this through interviews with the head of Banpu's Health, Safety, Environmental and Community Engagement Division, who is responsible for identification of stakeholder groups and processes for stakeholders' engagement.
- Reviewing documents and associated records e.g., Stakeholder expectation collected from each relevant business unit, results of employee engagement survey, summary result of community satisfaction survey by each business unit, e.g. ITM.
- Reviewing Banpu's process for identifying and determining material issues to confirm that the right issues were included in their report. We did this by benchmarking reports written by Banpu and its peers to ensure that sector specific issues were included for comparability. We also tested the filters used in determining material issues to evaluate whether Banpu makes informed business decisions that may create opportunities that contribute towards sustainable development.
- Auditing Banpu's data management systems to confirm that there were no significant errors, omissions, or misstatements in the report. We did this by reviewing the effectiveness of data handling procedures, and systems, including those for internal verification. We also spoke with those key people responsible for compiling the data and drafting the report.
- Verifying data and information remotely, via on line meeting, for a selection of Banpu's subsidiary companies' sites (i.e. PT Bharinto Ekatama (BEK) Open Pit Coal Mine site of PT Indo Tambangraya Megah Tbk (ITM) in Indonesia, Zhengding Combined Heat & Power plant of Banpu Power Public Company Limited (BPP) in China, Clarence underground Coal Mine of Centennial Coal Co., Ltd. in Australia, Angus Place Site of Centennial Coal Co., Ltd. in Australia, EI Wind Mui Dinh Wind Power plant in Vietnam) and verifying aggregated data, via desktop review, for all selected performance indicators at a corporate level.

  Note: LRQA did not verify the data back to its original sources, nor did it assess the accuracy and completeness of the data reported by individual locations.

Observations

Further observations and findings, made during the assurance engagement, are:

- Stakeholder inclusivity:

  We are not aware of any key stakeholder groups that have been excluded from Banpu's stakeholder engagement process. Banpu's sustainability strategy, and the content of this report, have been informed by the views and expectation of these stakeholders. In addition to the current indirect engagements applied, the completeness of this data could be enhanced by extending the engagement approach to direct, e.g. specific opinion survey, focus group discussion, etc..

- Materiality:
Banpu has established criteria for determining which issue is material by considering stakeholders' expectations / interests as well as global sustainability trends and peers' sustainability strategic analysis in each business. These material issues have then been prioritised, used to set strategy and influenced Banpu's performance disclosures. However, to remove inconsistencies and bias in judgement, Banpu should better define their thresholds / criteria for determining materiality. Also for future reports, Banpu should consider potential material topics associated with the sector specific standard (e.g. GRI 12 Coal Sector Standard 2022). This will help Banpu to not miss the identification of any applicable material issue(s).
- Responsiveness:
Banpu has established and implemented processes for responding to concerns from various stakeholder groups. We believe that these communication processes are effective in explaining Banpu's aim in contributing towards sustainable development. However,
    - Pollutant load of discharged water of Centennial should be included in future reports to enhance Banpu's responsiveness to addressing water related impact.
    - NOx and PM emitted from non-point sources should be included in future reports to enhance Banpu's responsiveness to addressing air emissions.
    - The reporting of scope 3 GHG emissions is currently limited only to GHG emissions from Coal Sold but there may be other categories of scope 3 GHG emissions that are significant. Future reports should capture these other categories. This will enhance the responsiveness of Banpu's influence/contribution along its supply chain in addressing this global material issue.
- Impact:
Banpu has monitored, measured and been accountable for how their actions affect the broader ecosystems, as related to their material issues. Currently Banpu has focused on its negative impacts. However, as material issues can cause negative and/or positive impacts, future reports should ensure all perspectives of material issues are captured by including information about positive impacts.
- Reliability:
Data management systems are established and centralised for the collection and calculation of data associated with the selected performance indicators. However,
    - Future reports should include working hours of contractors in Indonesia with less than 5 consecutive working days of operation. This will reduce the potential for under reporting of total working hours.
    - More vigorous and systematic internal verification by each business unit, and at the corporate level, will improve the reliability of reported data and information.

LRQA's standards, competence and independence

LRQA ensures the selection of appropriately qualified individuals based on their qualifications, training and experience. The outcome of all verification and certification assessments is then internally reviewed by senior management to ensure that the approach applied is rigorous and transparent.

The report verification is the only work undertaken by LRQA for Banpu and as such does not compromise our independence or impartiality.

Paveena Hengsritawat   Dated: 15 May 2023
LRQA Lead Verifier

On behalf of LRQA Group Limited.
LRQA (Thailand) Limited
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LRQA reference: BGK00000819

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 purpose
○ For report preparation ○ Other (Please specify...)

4. Please indicate the Company's topics that you are interested in.

Governance	Environment	Social
○ Sustainability Governance	○ GHG Emissions	○ Employee Engagement
○ Business Ethics	○ Energy	○ Human Capital Development
○ Digital Transformation	○ Air Emissions	○ Occupational Health & Safety
○ Supplier Management	○ Waste	○ Human Rights
○ Customer Management	○ Biodiversity	○ Community Engagement
○ Economic Distribution	○ Water	○ Mine Closure
○ Reliability of Power Plants	○ Mine Subsidence	○ Community Development
○ Business Continuity		
○ Compliance		
○ Risk Management		
○ Data Privacy & Cybersecurity		

5. In your opinion, how does the sustainability performance align with the Company's strategy?

○ High ○ Medium ○ Low

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

Overall design	○ High	○ Medium	○ Low	○ Need Improvement
Infographic design	○ High	○ Medium	○ Low	○ Need Improvement
Ease to understand	○ High	○ Medium	○ Low	○ Need Improvement

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

Completeness	○ High	○ Medium	○ Low	○ Need Improvement
Materiality	○ High	○ Medium	○ Low	○ Need Improvement
Reliability	○ High	○ Medium	○ Low	○ Need Improvement

8. In your opinion, does the report cover all of your interests?

○ Yes ○ No

If not, please specify the topic(s) that should be covered.

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9. Please provide any additional comments or suggestions.

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Thank you for your opinion and feedback

BANPU

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