



SMARTER
ENERGY FOR
SUSTAINABILITY

**SUSTAINABILITY REPORT
2023**

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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 environment, social, and governance. The 2023 Sustainability Report was published on April 5th, 2024, on the Company's website. This report has been prepared with reference to the GRI Standards 2021 and incorporated 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

The report scope encompasses the period from January 1st to December 31st, 2023, coinciding with the 2023 Financial Report. The performance covers 24 sustainability topics, with 13 identified as material topics from business entities in which Banpu holds a greater than 50% of total shares and has management control. These entities include:

- Mining business: Indonesia, Australia and Mongolia
- Gas business: the U.S.
- Thermal power business: China and the U.S.
- Renewable power business: China, Japan, Vietnam and Australia
- Solar rooftop and floating business: Thailand
- Smart cities and energy management business: Thailand

However, the boundary of this report does not cover Durapower, the energy storage system business in China, since the data collection system is under standardization.

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. Examples of such entities are mining business in China and thermal power business in Thailand and Lao PDR.

Reporting Assurance

This report undergoes an independent verification process by a third party to ensure its reference to the GRI Standards 2021. LQRA (Thailand), a reputable assurance provider, was entrusted with this task following a thorough selection process managed by the Company's procurement committee and subsequently endorsed by senior management. The assurance scope includes:

- Environmental aspects: Water and Waste data
- Social aspect: Occupational health & safety data

Additional information and the independent assurance statement are available on page 129-131.

Contact Details

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MESSAGE FROM ESG COMMITTEE

“

Our actions are aimed at creating a sustainable future wherein we thrive economically, uphold environmental preservation and champions of social responsibility.

”



It is a great privilege to welcome you to our Sustainability Report 2023, a testament to our relentless sustainability integrated into the fabric of our operations. In my capacity as the Chairman of the Environmental, Social, and Governance (ESG) Committee, I am honored to share with you the strides we are making in harmonizing shareholder returns with a profound positive impact on natural, social, and human capitals.

This year has underscored the importance of resilience and adaptability. Emerging risks, notably supply chain disruptions and the escalating impacts of climate change, have presented formidable challenges. However, our commitment to navigating these complexities is unwavering. We are recalibrating our strategies to address these and other emerging risks head-on, ensuring our operations are sustainable and forward-thinking.

Central to our mission is our commitment to supporting the United Nations Sustainable Development Goals (SDGs). These goals guide our efforts in making meaningful contributions to global challenges, ranging from climate action to social equity and economic development. Our actions are aimed at creating a sustainable future wherein we thrive economically, uphold environmental preservation and champions of social responsibility.

The ESG Committee plays a pivotal role in steering the Company towards this sustainable horizon. Through strategic recommendations, rigorous oversight of our ESG targets and practices, and diligent monitoring of ESG risks, we are laying the groundwork for a resilient and responsible business model. Our efforts extend to bolstering stakeholder engagement and ensuring the credibility of our materiality assessment process, thereby reinforcing our commitment to transparency and accountability in all our ESG endeavors.

With the collective wisdom of our Board of Directors and the expertise of our management team, I am confident in our trajectory toward sustainability. It is a journey marked by careful consideration of the ramifications of our actions, underpinned by a commitment to not only our immediate stakeholders but also to future generations.

I extend my sincere gratitude for your enduring trust and support as we navigate these complex times. Together, we are forging the path toward a sustainable future, driven by innovation, responsibility, and an unwavering commitment to our shared values.

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

MESSAGE FROM CEO

“

Together, we will continue to make a difference, ensuring that Banpu not only grows but thrives, contributing to a sustainable future for all.

”



As I step into the CEO role at Banpu, I am both honored and excited to lead our company into its next chapter. Having worked closely with our esteemed management team and my predecessor, I have witnessed firsthand the remarkable journey of Banpu over the years. Our commitment to sustainability, our achievements in the energy sector, and our dedication to the communities we serve have laid a strong foundation for the future. I am confident that together, we will drive Banpu beyond its historic achievements, embracing challenges as opportunities to innovate and excel.

Our longstanding commitment to the Ten Principles of the United Nations Global Compact (UNGC) and the Sustainable Development Goals (SDGs) remains at the core of our mission. These commitments are not just part of our business strategy but integral to our identity and vision for the future. I am dedicated to further aligning our long-term goals with the SDGs, ensuring that our growth is not only sustainable but also contributes positively to the global agenda for a better world.

This decade-long journey with the Dow Jones Sustainability Indices (DJSI) reflects our enduring commitment to the highest environmental, social, and governance (ESG) standards. This recognition is a collective achievement, and I extend my heartfelt gratitude to every member of the Banpu family for their dedication and hard work. In the spirit of innovation, I am eager to explore new opportunities that will propel

Banpu forward. Our “Greener & Smarter” strategy will continue to guide us. Still, with an eye toward the horizon, we will seek out pioneering technologies and practices that can redefine what it means to be an international versatile energy provider. Our commitment to reducing our environmental footprint, enhancing energy efficiency, and promoting clean energy sources will be unwavering.

The challenges we face, such as climate change and resource scarcity, demand bold actions and a visionary approach. I believe that we can turn these challenges into our greatest achievements by fostering a culture of innovation, technology, and sustainability. Our dedication to transparency and accountability will continue, as will our efforts to engage with all stakeholders in meaningful and impactful ways.

In this regard, I extend my deepest gratitude to the Banpu family, our partners, and stakeholders for your trust and support. Your dedication and commitment are the driving forces behind our success. Together, we will continue to make a difference, ensuring that Banpu not only grows but thrives, contributing to a sustainable future for all.

As we move forward, I am filled with optimism and determination. The path ahead is one of transformation and growth, guided by our principles and fueled by our collective ambition. Banpu has a bright future, and I am privileged to lead us on this journey.

A handwritten signature in black ink, appearing to read 'Sinon Vongkusolkrit', is written on a light blue background.

Sinon Vongkusolkrit
Chief Executive Officer and
Chairman of the Sustainability Committee
2 April 2024

OUR WAY IN SUSTAINABILITY

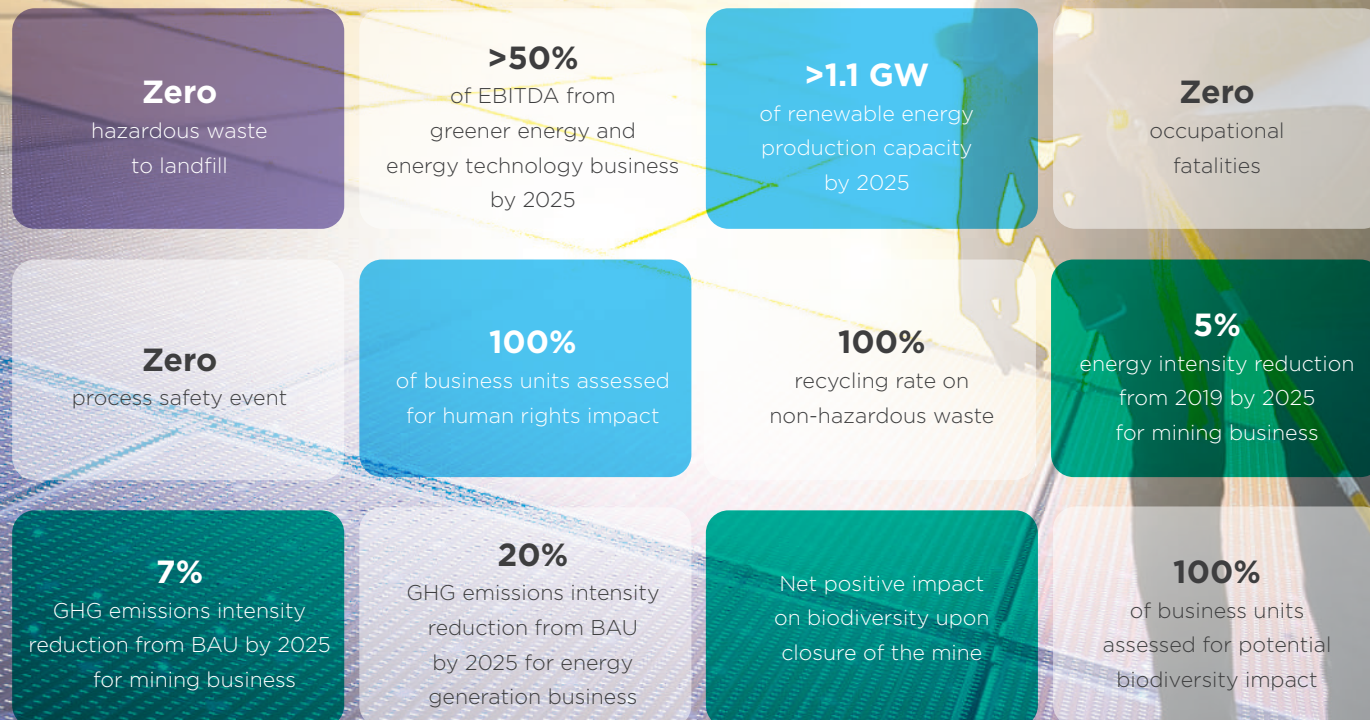
VISION

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

KEY SUSTAINABILITY TARGETS



SUSTAINABILITY IN FOCUS 2023-2025

Banpu commits to delivering “Smarter Energy for Sustainability” and creating a better living for all through its sustainable operations across 3 aspects — environment, social and governance (ESG), under the Greener & Smarter strategy.

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



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

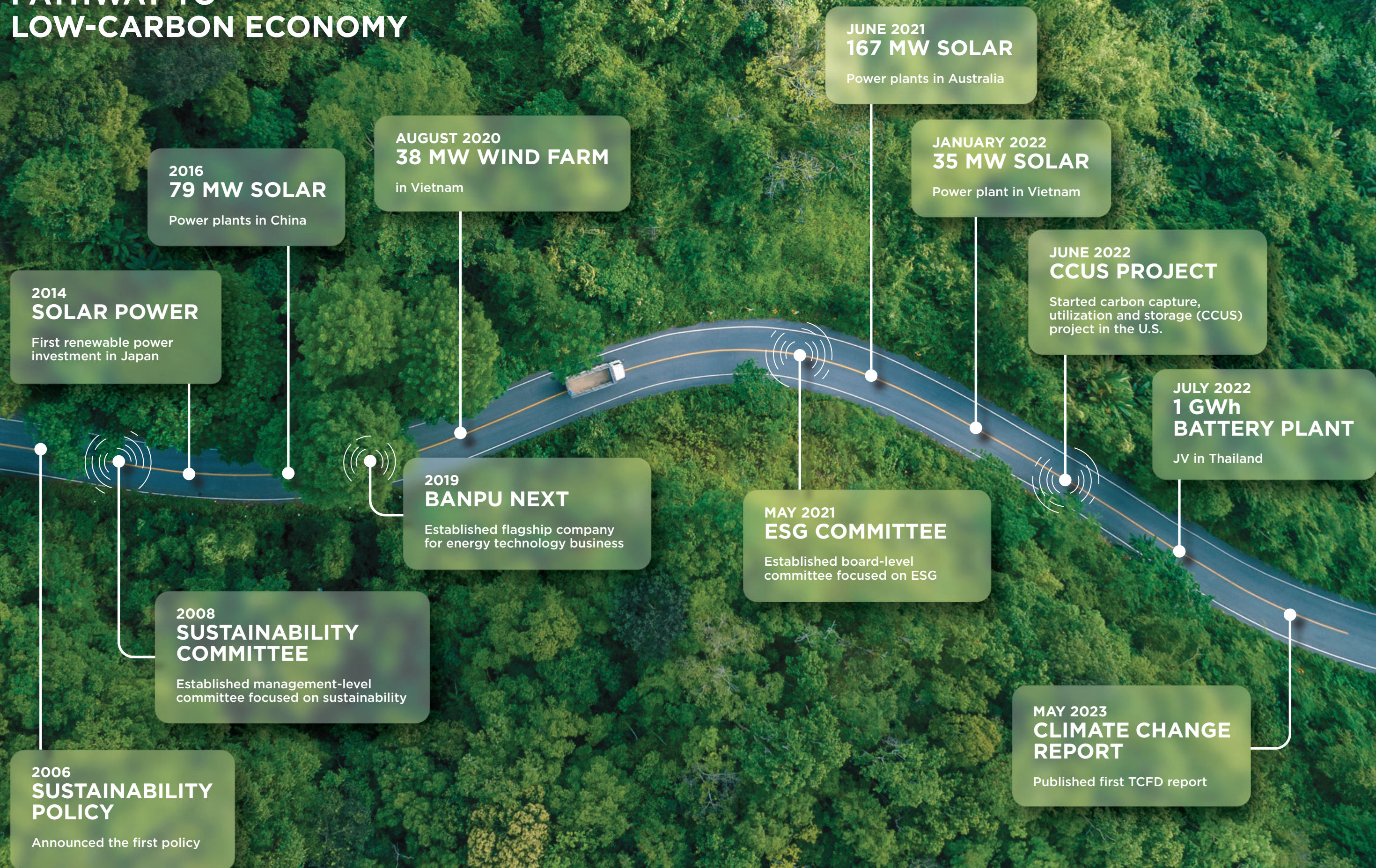
Integrate ESG across supplier lifecycle management, especially critical suppliers



ESG in performance evaluation

Embed ESG as part of individual KPIs, from top executives to frontline managers

PATHWAY TO LOW-CARBON ECONOMY



YEAR IN REVIEW

**23
FEB**

BPIN Investment Co., Ltd. (BPINI), a wholly owned subsidiary of Banpu NEXT Co., Ltd. (Banpu NEXT), has increased its shareholding in Durapower Holdings Pte. Ltd. (Durapower), an associated company, from 47.68% to 65.10%, and Durapower has become a subsidiary of Banpu, with the transaction value of USD 70 million as part of strategy to scale up its energy storage system business.

**18
APR**

Banpu NEXT invested 14.20% shares in Oyika Pte. Ltd. (Oyika), a Singapore start-up that offers battery swap solutions and Battery-as-a-Service (BaaS) to expand its services and network of battery swapping stations in Southeast Asia with a total investment value of USD 8.75 million.

**28
APR**

Banpu Japan K.K. (BJP), a wholly owned subsidiary of Banpu NEXT invested in energy storage system business by developing a large-scale battery farm project in Tono City, Iwate Prefecture, Japan, with a total capacity of 58 MWh, the project will be developed on approximately 3,000 square meters of land, which expected for commercial operation date in 2025. The project also being supported by the government's subsidy program aims to provide partial or full financial support to accelerate its cleaner energy transitions to achieve its decarbonization target.

**13
MAR**

BPINI, invested 4.55% shares in Green Li-on Pte. Ltd., a Singapore-based lithium-ion battery recycling technology company with a total investment value of USD 8.0 million.

**10
JUL**

Temple Generation Intermediate Holdings II, LLC, a subsidiary of Banpu Group, has entered into a purchase and sale agreement to acquire 100% interest in CXA Temple 2, LLC which owns Temple II Gas-fired power plant (Temple II) that is situated adjacent to Temple I Gas-fired power plant (Temple I) in Texas, the U.S. The total investment amount is USD 460 million. The transaction was successfully completed on 10 July 2023. Temple II is a combined-cycle power plant with a generating capacity of 755 MW, which has been in commercial operation date since August 2015.

**17
AUG**

BKV announced final investment decision (FID) for its development in Carbon Capture, Utilization and Storage (CCUS) project in the U.S. The 2 projects consist of Barnett Zero Project with an average sequestration rate of up to approximately 210,000 tonnes CO₂ per year, expected total investment of around USD 29-34 million and Cotton Cove Project with an average sequestration rate of up to approximately 80,000 tonnes CO₂ per year, expected total investment of around USD 14-24 million.

**25
SEP**

BNSP Smart Tech Co., Ltd. (BNSP), a joint venture between Banpu NEXT and SP Group, had won the tender to design, build, own and operate an innovative district cooling system in Zone C of the Government Complex Commemorating His Majesty The King's 80th Birthday Anniversary, 5th December 2007 (Government Complex Center Zone C) in Thailand. When completed in 2024, the district cooling system will operate a total cooling capacity of up to 14,000 Refrigeration Tons (RT), providing sustainable cooling covering a total gross floor area of 660,000 square meters to provide reliable and energy-efficient chilled water to the network of buildings within the complex.

**11
OCT**

Banpu NEXT has entered into Share Subscription Agreement (SSA) for the investment of 40% shares of SVOLT Energy Technology (Thailand) Co., Ltd. (SVOLT Thailand) with the investment amount of THB 750 million from SVOLT Energy Technology (Hongkong), which shall retain a majority 60% ownership interest. SVOLT Thailand is mainly positioned as a module pack factory, with business scope including research, processing, and sales of lithium-ion battery technology; import and export of goods; import and export agency; technical services, development, consultation, exchange, and transfer; and information consulting services. The factory has a capacity of 60,000 sets and is expected to deliver within the first quarter of 2024, serving key clients, including GWM and Hozon. The transaction was successfully completed on 30 October 2023.

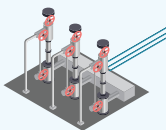
OUR BUSINESS

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. Additionally, the Company continues to explore the feasibility of investing in strategic minerals such as lithium and copper, to enhance its synergy for clean energy solutions.



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. Additionally, the Company focused on commercializing large-scale Carbon Capture Utilization and Sequestration (CCUS) through its dedicated business unit, dCarbon Ventures.

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, Japan, 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 specializes in providing turnkey installation services for solar power generation systems, offering a range of solar solutions, including rooftop, carport, and floating solar installations. These services cater to both retail and business customers seeking sustainable and environmentally friendly energy solutions. Presently, our operations extend across Thailand, China, Japan, Indonesia, and Vietnam.

6. Energy Storage System

The Company specializes in developing energy storage systems tailored for electric vehicles and stationary applications. This includes energy storage system management to meet various customer needs, incorporating innovative lithium-ion batteries with high safety standards and environmental friendliness.

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.

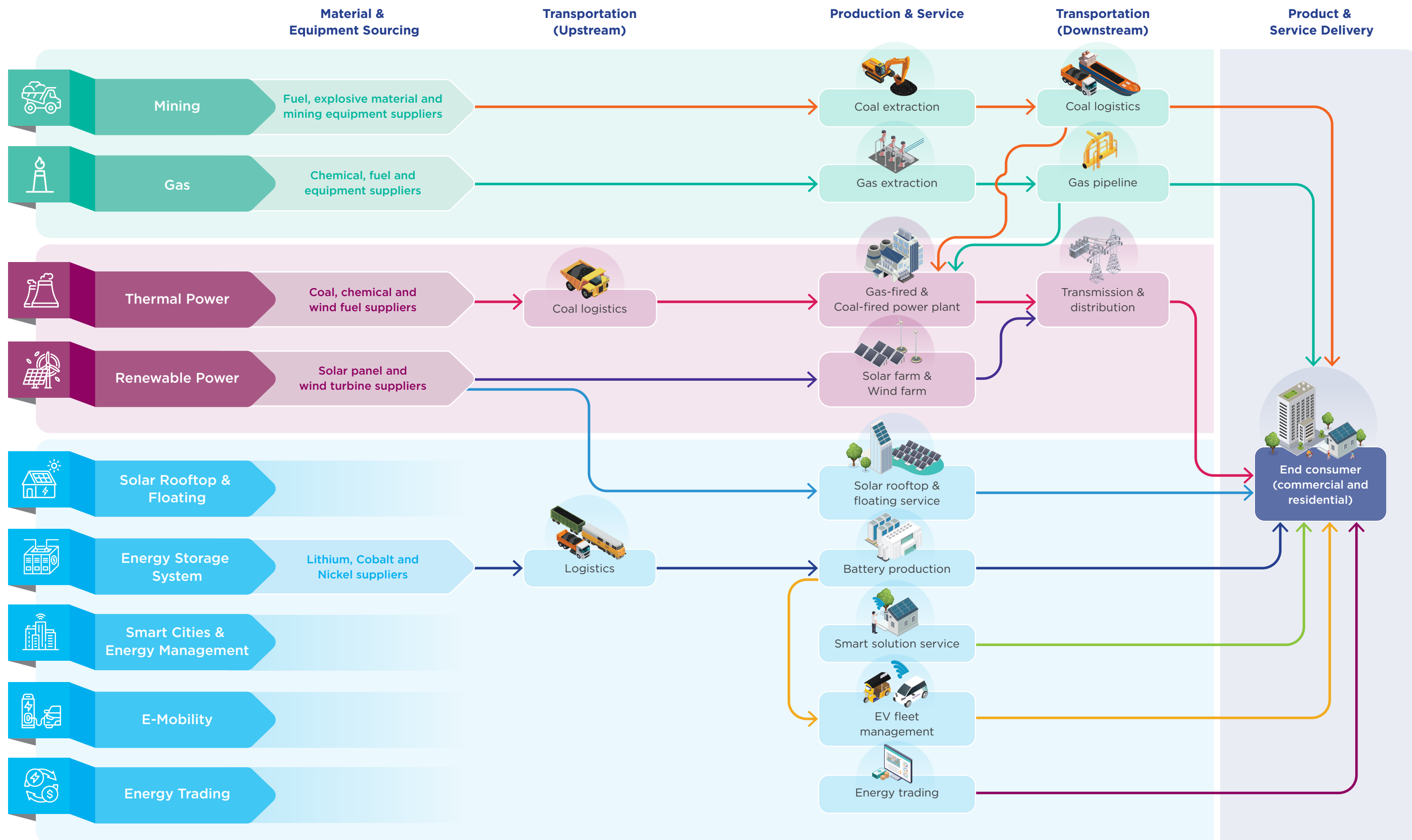
8. E-Mobility

The Company offers EV fleet management linked to a digital platform to support logistic and transportation partners, as well as customizable EV-related services based on the Mobility-as-a-Service (MaaS) concept.

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.

BUSINESS VALUE CHAIN



MAP OF OPERATIONS



ENERGY TECHNOLOGY

- Solar Rooftop & Floating
- Energy Storage System
- Smart Cities & Energy Management
- E-mobility
- Energy Trading

ENERGY RESOURCES

- Mining
- Gas

ENERGY GENERATION

- Thermal Power
- Renewable Power

Information as of 2 April 2024

GOVERNANCE STRUCTURE

The Board of Directors of Banpu Public Company Limited is a one-tier system with 4 sub-committees. The primary role of the Board of Directors is to ensure that the Company's activities are in full compliance with all relevant laws, the Company's objectives and regulations, and shareholder resolutions. They are also responsible for oversight, examination, and evaluation of both the Company's performance and that of the CEO and senior executives. The Company's practices for the Board of Directors are regularly refined to ensure alignment with the business landscape and the principles of good corporate governance. The board structure consists of a strategic blend of independent directors, non-executive directors, and executive directors. For integrity and balance of the Board's power, in instances where the Chairman of the Board does not qualify as an independent director, a "Lead Independent Director" shall be appointed to ensure a balanced agenda setting for board meetings.

GENDER



Male
12
persons

Female
1
persons

STATUS



**Non-executive
Director**

7
persons

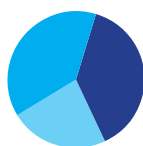
**Independent
Director**

5
persons

**Executive
Director**

1
person

TENURE



>10 years

5
persons

3-10 years

5
persons

<3 years

3
persons

	MEMBER	ROLE & RESPONSIBILITY
Corporate Governance and Nomination Committee	1 Independent director 3 Non-executive directors	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> Review the financial reports, the sufficiency of internal control, internal audit, 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	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> 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 MEMBERS

MR. CHANIN VONGKUSOLKIT
Age: 71
Chairman of the Board of Directors
Appointed Date: 28 April 2016
Director
Appointed Date: 16 May 1983
Senior Executive Officer
Appointed Date: 10 April 2015



1.

MR. TEERANA BHONGMAKAPAT
Age: 67
Lead Independent Director
Appointed Date: 22 February 2023
Independent Director
Appointed Date: 5 April 2012
Chairman of the Audit Committee
Appointed Date: 30 April 2014
Member of the Compensation Committee
Appointed Date: 30 April 2014



2.

MR. PIRIYA KHEMPON
Age: 65
Independent Director
Appointed Date: 8 April 2020
Chairman of the Environment, Social and Governance Committee
Appointed Date: 1 May 2021
Member of the Corporate Governance and Nomination Committee
Appointed Date: 1 May 2020



3.

MR. PICHAI DUSDEEKULCHAI
Age: 62
Independent Director
Appointed Date: 4 April 2019
Member of the Audit Committee
Appointed Date: 25 April 2019
Member of the Environment, Social and Governance Committee
Appointed Date: 1 May 2021



5.

MR. TEERAPAT SANGUANKOTCHAKORN
Age: 58
Independent Director
Appointed Date: 3 April 2019
Member of the Compensation Committee
Appointed Date: 25 April 2019
Member of the Environment, Social and Governance Committee
Appointed Date: 1 May 2021



6.

MRS. WATANAN PETERSIK
Age: 62
Independent Director
Appointed Date: 4 April 2023
Member of the Audit Committee
Appointed Date: 1 May 2023



7.

MR. ANON SIRISAENGTAKSIN
Age: 71
Director
Appointed Date: 19 April 2016
Chairman of the Corporate Governance and Nomination Committee
Appointed Date: 1 May 2022
Executive Advisor
Appointed Date: 1 April 2014



8.

MR. BUNTOENG VONGKUSOLKIT
Age: 67
Director
Appointed Date: 3 April 2014
Chairman of the Compensation Committee
Appointed Date: 25 April 2019



9.

MR. METEE AUAPINYAKUL
Age: 70
Director
Appointed Date: 16 May 1983
Advisor
Appointed Date: 1 January 2014



10.

MR. ONGART AUAPINYAKUL
Age: 67
Director
Appointed Date: 29 July 1983
Advisor
Appointed Date: 1 January 2017
Executive Officer
Appointed Date: 8 January 2001



11.

MR. VERAJET VONGKUSOLKIT
Age: 59
Director
Appointed Date: 1 June 2010
Member of the Corporate Governance and Nomination Committee
Appointed Date: 1 June 2010



12.

MR. SARAYUTH SAENGCHAN
Age: 61
Director
Appointed Date: 2 April 2022
Member of the Corporate Governance and Nomination Committee
Appointed Date: 1 May 2022



13.

MR. SINON VONGKUSOLKIT
Age: 33
Chief Executive Officer
Appointed Date: 2 April 2024
Director
Appointed Date: 2 April 2024



15.

BOARD SKILLS MATRIX

		SKILL										
		Finance/ Accounting	Marketing/ Logistic	Management	Technical/ Engineer	Business Relation	Economic	Strategic/ International	Mining	Power	Oil & Gas	Technology
1.	Mr. Chanin Vongkusolkrit	•	•	•		•	•	•	•	•		
2.	Mr. Teerana Bhongmakapat	•		•	•	•	•	•				
3.	Mr. Piriya Khempon			•		•	•	•				
4.	Mr. Suthad Setboonsarng ^(a)			•		•	•	•				
5.	Mr. Pichai Dusdeekulchai	•		•		•		•				
6.	Mr. Teerapat Sanguankotchakorn			•	•	•						•
7.	Mrs. Watanan Petersik ^(b)	•		•		•	•	•				
8.	Mr. Anon Sirisaengtaksin			•	•	•		•			•	
9.	Mr. Buntoeng Vongkusolkrit		•	•		•		•				
10.	Mr. Metee Auapinyakul			•		•		•		•		
11.	Mr. Ongart Auapinyakul			•	•	•		•	•			
12.	Mr. Verajet Vongkusolkrit	•		•		•	•			•		
13.	Mr. Sarayuth Saengchan	•			•	•	•	•				
14.	Mrs. Somrudee Chaimongkol ^(c)	•		•		•		•	•	•		
15.	Mr. Sinon Vongkusolkrit ^(d)	•		•		•	•	•				•

^(a) Mr. Suthad Setboonsarng resigned as director, effective 4 April 2023.

^(b) Mrs. Watanan Petersik was appointed as a director, effective 4 April 2023, and a member of the Audit Committee, effective 1 May 2023.

^(c) Mrs. Somrudee Chaimongkol resigned as director, effective 2 April 2024.

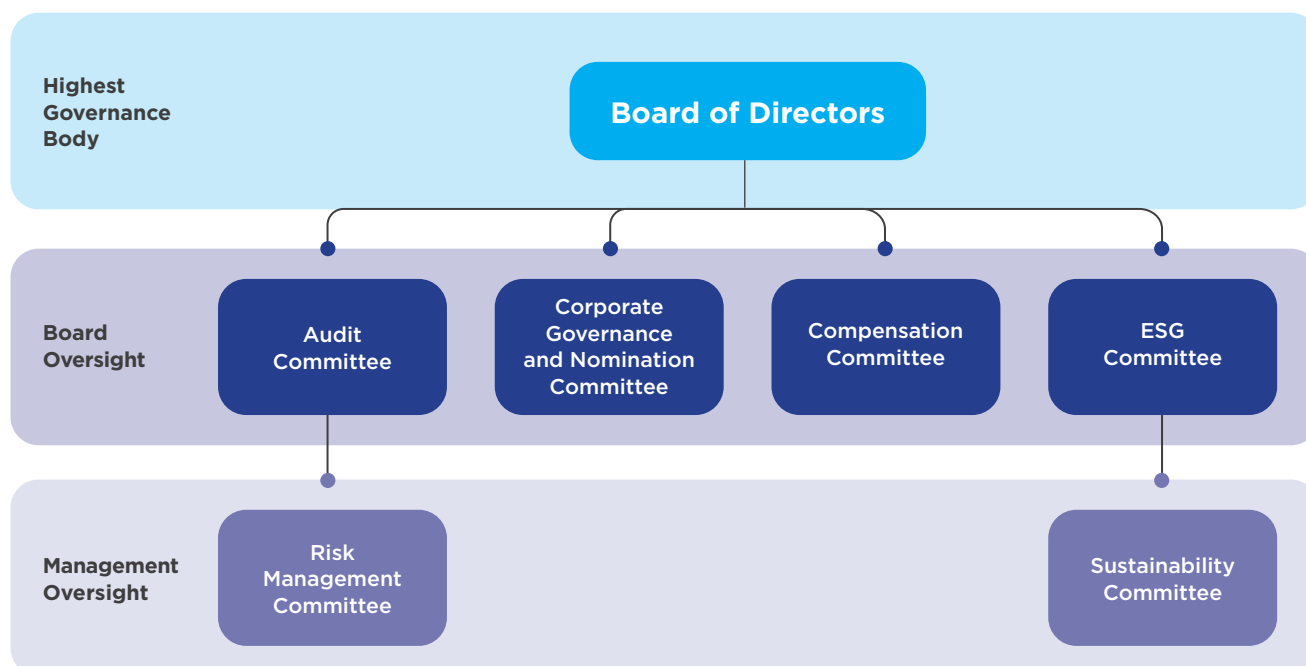
^(d) Mr. Sinon Vongkusolkrit was appointed as a CEO and a director, effective 2 April 2024.

SUSTAINABILITY GOVERNANCE



ESG Committee
Charter

Recognizing the importance of Environmental, Social, and Governance (ESG) factors on both operational legitimacy and long-term value creation, appointed by the Board of Directors, the Company has established an ESG Committee dedicated to overseeing and managing ESG-related issues, aligning the operations with both the Company's values and the long-term interests of stakeholders.



ESG COMMITTEE

Composition, Qualifications, and Term: ESG Committee comprises at least 3 Board-appointed directors, including an independent director as chairman. Each member is selected based on their knowledge and experiences in ESG matters, with a term office lasting 3 years. The head of the Global Corporate Sustainability department served as the Committee's secretary.

Meeting and Reporting: Meetings convened at least quarterly, with the presence of at least two members required for a quorum. The Committee reports its activities and outcomes to the Board of Directors at least once a year.

Duties and Responsibilities:

- **ESG Oversight:** Oversee policies and practices, as well as targets and performance concerning ESG aspects
- **ESG Risk Management:** Review and monitor ESG risk management process and outcomes as well as oversee the effectiveness of ESG management systems
- **Stakeholder Engagement and Materiality Assessment:** Review and monitor stakeholder engagement and materiality assessment process to ensure insights are incorporated into strategic decision-making
- **ESG Disclosure:** Review and oversee the Company's public ESG disclosures

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 directors must not exceed 9 years or 3 consecutive terms, and directors shall serve a term of 3 years and must not hold more than 5 external directorships in other listed companies. In the nomination process, the Company places importance on the diversity of the board structure. Several aspects are taken into consideration when each candidate is assessed, including independence, experience, skill, expertise, gender, nationality, age, and religion. The attributes of the candidates are assessed using the board skills matrix to ensure benefits to the Company and the 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 OF DIRECTORS PERFORMANCE EVALUATION

The Corporate Governance and Nomination Committee is responsible for reviewing the methodology and criteria used to evaluate the Board of Directors' performance. This diligent process is conducted annually and involves a thorough self-assessment by each member of the Board. The evaluation spans the Board as a collective entity, its sub-committees, and the performance of individual directors. The findings from these assessments, along with any recommendations for improvement, are thoroughly discussed to ensure alignment with the best interests of the Company and shareholders.

REMUNERATION OF THE BOARD OF DIRECTORS

The Board of Directors delegated the Compensation Committee to review and refine the remuneration structure and system for the Company's directors. This includes determining fair and competitive compensation that aligns with the directors' roles, duties, and responsibilities within the broader job market and industry standards. The remuneration of the Board of Directors includes a structured compensation package comprising a monthly salary and allowances for each meeting attended. Additionally, to align the interests of our directors with those of shareholders, annual bonuses for the directors are directly linked to the dividends distributed to shareholders. Importantly, the final approval for the payment of the Board of Directors' remuneration rests with shareholders during the annual shareholders' meeting.

CONFLICT OF INTEREST MANAGEMENT

The Board of Directors holds steadfast to ensure that the decision-making processes remain unbiased and focused on the best interests of the organization and its stakeholders. The Board of Directors shall not allow any board, management, or employee to seek personal gain from, or to engage in, activities that directly compete with the company or transactions that may lead to a conflict of interest with the Company. If such a transaction is unavoidable, the Board of Directors shall ensure that the transaction is carried out with transparency and fairness similar to transactions carried out with unrelated parties. Any employee having an interest in any transaction must not take part in its approval process. If a transaction is considered a connected transaction according to the Announcement of the Stock Exchange of Thailand, the Board of Directors must make sure that the relevant rules and procedures for disclosure regarding connected transactions by listed companies are strictly complied with.

SUSTAINABILITY COMPETENCY DEVELOPMENT

The Company prioritizes continuous learning and development for the directors to ensure their skills and knowledge remain at the forefront of industry and global trends. Throughout the year, the directors have participated in a diverse range of programs.

Program	Number of directors
Carbon Capture Utilization & Storage (CCUS) and future opportunity to Banpu	8
Cybersecurity & Privacy Awareness	10
Direction of World and Thai economy	3
Cybersecurity & Privacy Awareness #2	7
ESG Risks and Trends in Power Business	5
ESG Summit	6
Sustainability Transformation Xponential	1

POLICY & COMMITMENTS



Sustainability
Policy

POLICY GOVERNANCE

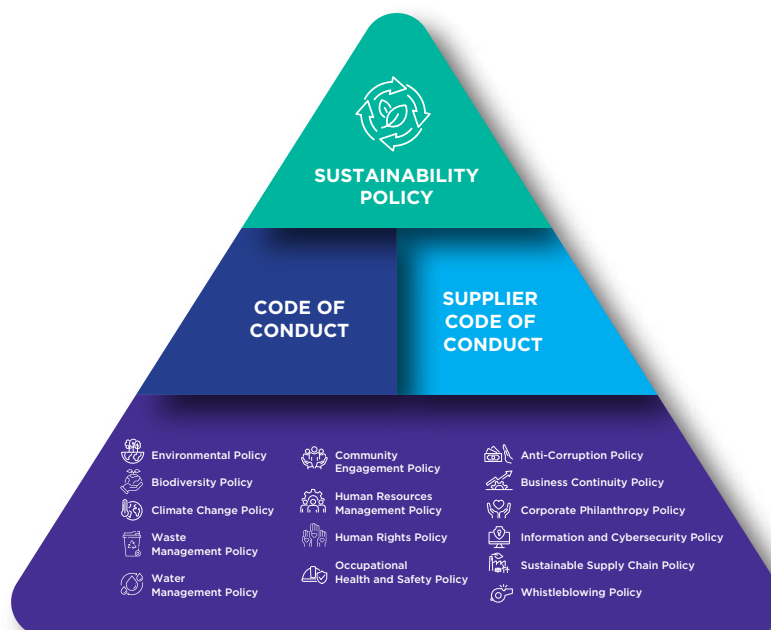
Since 2006, Banpu has been at the forefront of integrating sustainability into its core operations, guided by the first “Sustainability Policy”. The policy has been revised in 2016. This commitment has not only been approved by the Sustainability Committee, chaired by the CEO, but also has been endorsed by the Board of Directors.

The Sustainability Policy is structured in 2 key focused areas – Internal and external – to ensure comprehensive sustainability integration. The internal strategy zeroes in on underpinning the Company’s competitiveness by enhancing internal capabilities and resilience through 2 main pillars: People and Operational Excellence. People imply a commitment to respecting employees’ rights through fair treatment and engagement. Besides, the Company pursues operational excellence through innovation and continuous improvement across the supply chain. This approach elevates the products and services and strengthens the customer relationships.



Externally, the commitment emphasizes broader societal and environmental stewardship by generating tangible value for all stakeholders. This is achieved through a steadfast commitment to compliance with laws and regulations, putting priority on occupational health and safety for both employees and business partners, ensuring business growth is in harmony with environmental protection, and creating sustainable values for the community we operate in.

In addition, the Sustainability Policy serves as a cornerstone for a suite of corporate policies. This includes the Code of Conduct, which is applied across organizational activities, and the Supplier Code of Conduct, which is crucial for the comprehensive implementation of the entire supply chain, particularly with contractors and suppliers. Furthermore, Human Right Due Diligence (HRDD) highlights the Company’s commitment to promoting and safeguarding rights within the Company’s business relationships.



VOLUNTARY COMMITMENTS

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



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.



Banpu has aligned its long-term corporate strategies with the United Nations Sustainable Development Goals (SDGs).



Banpu has been invited to participate in S&P Global Corporate Sustainability Assessment since 2014. The Company has used the assessment result as a guide to formulate a corporate sustainability strategy and improve ESG performances.



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.



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.



Banpu has adopted AA1000 Accountability Principles Standard (AA1000APS) and AA1000 Stakeholder Engagement Standard (AA1000SES) to create its stakeholder engagement and materiality assessment frameworks.



Banpu assures accuracy of data in its sustainability reports using the International Standard on Assurance Engagements (ISAE) 3000 issued by the International Federation of Accountants (IFAC).



Banpu has adopted IFC Performance Standard on Environmental and Social Sustainability for ESG risk management.



Banpu has developed the corporate governance standard in accordance with OECD Guideline for Multinational Enterprises.



Banpu has followed TCFD recommendations in reporting its climate change management practices.



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.



Banpu has adopted IFRS Sustainability Disclosure Standards developed by the International Financial Reporting Standards (IFRS) for its disclosure of sustainability-related financial information.

STAKEHOLDER & MATERIALITY MATTERS

STAKEHOLDER ENGAGEMENT

The Company deeply values the perspectives of all stakeholders, recognizing that their insights are crucial for enhancing the Company's management practices and operational efficiency. To ensure responsiveness to all stakeholders' interests, the Company applies the stakeholder analysis standard 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 meticulously analyzed at a corporate level, with the diligent oversight of the Sustainability Committee and the ESG Committee. Details of engagement methods and stakeholder's issues are disclosed on pages 100-101 of this report.



Stakeholder
Engagement

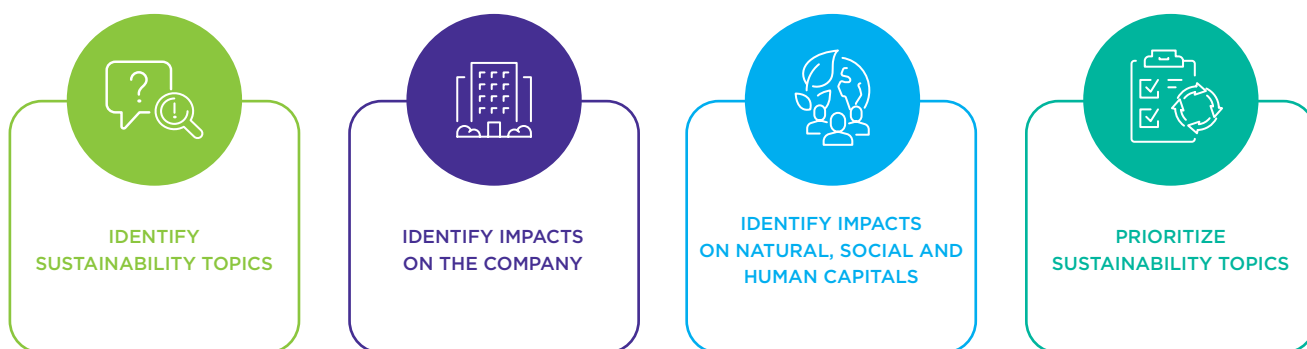
MATERIALITY ASSESSMENT

The material topics are assessed and prioritized through the corporate management standard, which was developed based on the internationally recognized GRI Standards and AA1000 AccountAbility Principles Standard (AA1000APS). This approach covers evaluating governance, environmental and social aspects for their impacts not only on the Company but also on the broader spectrums of natural, social and human capitals. The relevance and accuracy of these material topics are ensured through an annual review and approval process undertaken by the Sustainability Committee and the ESG Committee.



Materiality
Assessment

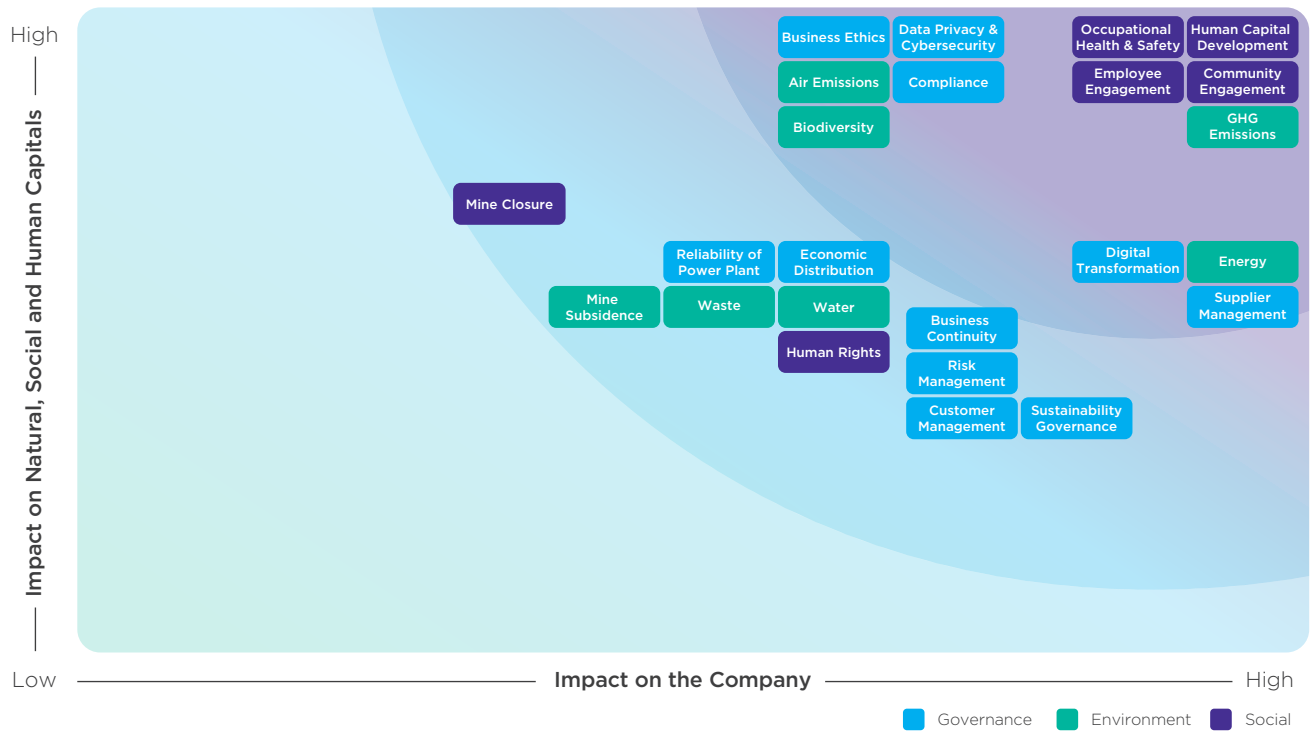
PROCESS OF MATERIALITY ASSESSMENT



RE-VALIDATION OF MATERIAL TOPICS

In 2022, the Company conducted a comprehensive materiality assessment, blending insights from global trends, industry peers, and the valuable perspectives of senior executives across the business units. Material topics derived from the assessment have been used for the 2022-2023 period. In 2023, the internal panel discussion was performed to refine the focus areas, notably combining "Community Development" with "Community Engagement" to streamline our approach. The outcome of this thorough process encapsulates 24 significant topics, with 13 identified as material to our operations and stakeholders.

MATERIALITY MATRIX



IMPACT BOUNDARY OF MATERIAL TOPICS

MATERIAL TOPIC	IMPACT BOUNDARY									
	Employee	Business Partner	Community	Contractor	Financial Capital Provider	Customer	Government & Regulator	Investor & Investment Analyst	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			●							

GRIEVANCE MANAGEMENT

The Company is firmly committed to sustainability, which includes maintaining a transparent and accountable process for addressing grievances related to corporate conduct. To ensure that any complaints related to corporate behavior are addressed properly, the Company has established a comprehensive grievance mechanism. This system not only upholds our integrity but also fosters a culture of ethical behavior across all levels of the organization.



Whistleblowing
Policy

- **Investigation Process:** Upon receiving a complaint or information that meets the evidential threshold necessary to warrant further action, a dedicated investigation team is formed. This team conducts a thorough investigation following the corporate fraud management manual.
- **Informing the Complainant:** Once the investigation is completed, the complainant will be informed of the outcomes. This communication is carried out through designated channels to ensure clarity and confidentiality.
- **Taking Action:** If an allegation is substantiated, the Company will take appropriate action depending on the severity and nature of the misconduct. Actions may range from internal disciplinary measures to legal proceedings, ensuring that misconduct is addressed decisively and in alignment with corporate values.
- **Reporting to Governance Bodies:** The outcomes of all investigations, along with subsequent actions, are reported to the Corporate Governance and Nomination Committee quarterly. Additionally, an annual report is presented to the Board of Directors, summarizing the overall effectiveness of the grievance mechanism and any significant cases or trends.



INVESTIGATE



INFORM



ACTION



REPORT

PROTECTION OF WHISTLEBLOWERS

The Company firmly protects the rights and safety of individuals who report violations or participate in investigations. Protections include, but are not limited to:

- No unfair treatment or retaliation against employees, temporary staff, or outsourced personnel for reporting violations or cooperating with investigations
- Confidentiality of the whistleblower's identity and the details of the report, unless disclosure is mandated by law or necessary for legal proceedings
- Enforcement of penalties for unauthorized disclosure of confidential information

COMPLAINT CHANNELS

The Company has established several complaint channels to allow all stakeholders to report concerns across all areas.

✉ Letter:

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

🌐 Website:

<https://www.banpu.com/corporate-governance/whistleblowing/>

@ Email:

GNCchairman@banpu.co.th
GNCsecretariat@banpu.co.th

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 RECOGNITIONS

Member of **Dow Jones Sustainability Indices**

Powered by the S&P Global CSA

The Company has been recognized as a Dow Jones Sustainability Indices (DJSI) member since 2014.

MSCI ESG RATINGS



CCC	B	BB	BBB	A	AA	AAA
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The Company received a rating of A (on a scale of AAA-CCC) in the MSCI ESG Ratings Assessment since 2019.

NATIONAL RECOGNITIONS



The Company received the Sustainability Awards of Honor in Sustainability Excellence from the Stock Exchange of Thailand since 2017.



The Company received a rating of AAA in the SET ESG Ratings from the Stock Exchange of Thailand.



The Company received an excellent CG rating in the Corporate Governance Report of Thai Listed Companies since 2017.



The Company received a 5 coins rating on the annual general meeting checklist from the Thai Investors Association.

PARTNERSHIP

For forty years, the Company has adhered to ESG principles, balancing business growth with sustainable value creation for all stakeholders. Committed to enduring communities, the Company actively supports philanthropic endeavors in line with the corporate philanthropy policy, underscoring dedication to community and society sustainability.



Corporate
Philanthropy
Policy

EDUCATION

PARTNERSHIP SCHOOL

The Company has actively partnered with the Ministry of Education and various private sector entities, dedicating efforts to bolster educational infrastructure across schools. This collaboration focuses on enhancing school administration, boosting academic performance, and equipping students with essential future-ready skills. The Company has extended support to 3 schools in Khon Kaen, Maha Sarakham, and Roi Et provinces.

In 2023, to ensure these improvements are sustainable, the Company has concentrated on several key activities over the year. These include elevating academic and innovation standards, advancing technology and IT infrastructure, improving English language proficiency, developing vocational and life skills, fostering a learning community, and laying down strategies for the continuity of learning skills.



HEALTH

BANPU TABLE TENNIS CLUB

Banpu Table Tennis Club (BTTTC) was founded in early 2008, marking the commitment to nurturing Thai table tennis talent. The support encompasses daily training, sponsorship for national and international competitions, and organizing various activities to cultivate score values such as morality, ethics, discipline, harmony, and the volunteer spirit of the club members.

In 2023, a standout event was “Youth Camp for Dreaming of Uttaradit’s Table Tennis, Away from Drugs” held in Uttaradit Province. This inspirational camp attracted 65 youths who were coached by 30 experienced trainers. This initiative proved to be engaging and received favorable feedback from the local community.



92 Members
68 Athletes
11 Coaches
13 General members
9 Training centers

Achievements since its establishment

3 National athletes competing in the SEA Games
9 National junior athletes
8 National junior youth athletes
2 Professional athletes in the Republic of Poland

SOCIAL WELFARE

EMPOWERMENT OF PEOPLE WITH DISABILITIES

The Company acknowledges the significance of inclusivity and empowerment for people with disabilities by employing visually impaired masseurs and facilitating direct donations to the fund to empower persons with disabilities. Additionally, the Company collaborates with government agencies to create employment opportunities for persons with disabilities to work in communities.



ECONOMIC DEVELOPMENT



B.HACK 2023 AND B.CONNXT

B.Hack 2023 and B.Connxt are business case competitions organized by fourth-year students from Chulalongkorn School of Integrated Innovation (SCII), under the supervision of the Company. The events aim to inspire young entrepreneurs from various universities to tackle global challenges through innovation.

B.Hack 2023: Decoding Sustainability

In early 2023, B.Hack engaged 150 students across 38 teams in the “Decoding Sustainability” theme. After an intensive selection and coaching process, 20 finalist teams were chosen, culminating in a pitch presentation on April 1, 2023.



B.Connxt: Decentralization

Later in the year, B.Connxt adopted the theme of “Decentralization” which took place in November 2023. Initially attracting 59 ideas from 180 participants, the event was narrowed down to 11 finalists after rigorous grooming. Winners were awarded 50,000 THB, with second and third places receiving 30,000 THB and 20,000 THB, respectively.

EMERGENCY RELIEF

COLD RELIEF EFFORTS IN NORTHERN THAILAND

In January 2023, the northern region experienced harsh winter conditions, deeply affecting the local residents. The Company collaborated with local government authorities and the “Help Keeper, Volunteer People” group in donating 2,000 sweaters, with a total value of 500,000 THB, to communities across Tha Song Yang District in Tak Province, as well as Fang and Mae Chaem Districts in Chiang Mai Province.



ENVIRONMENT

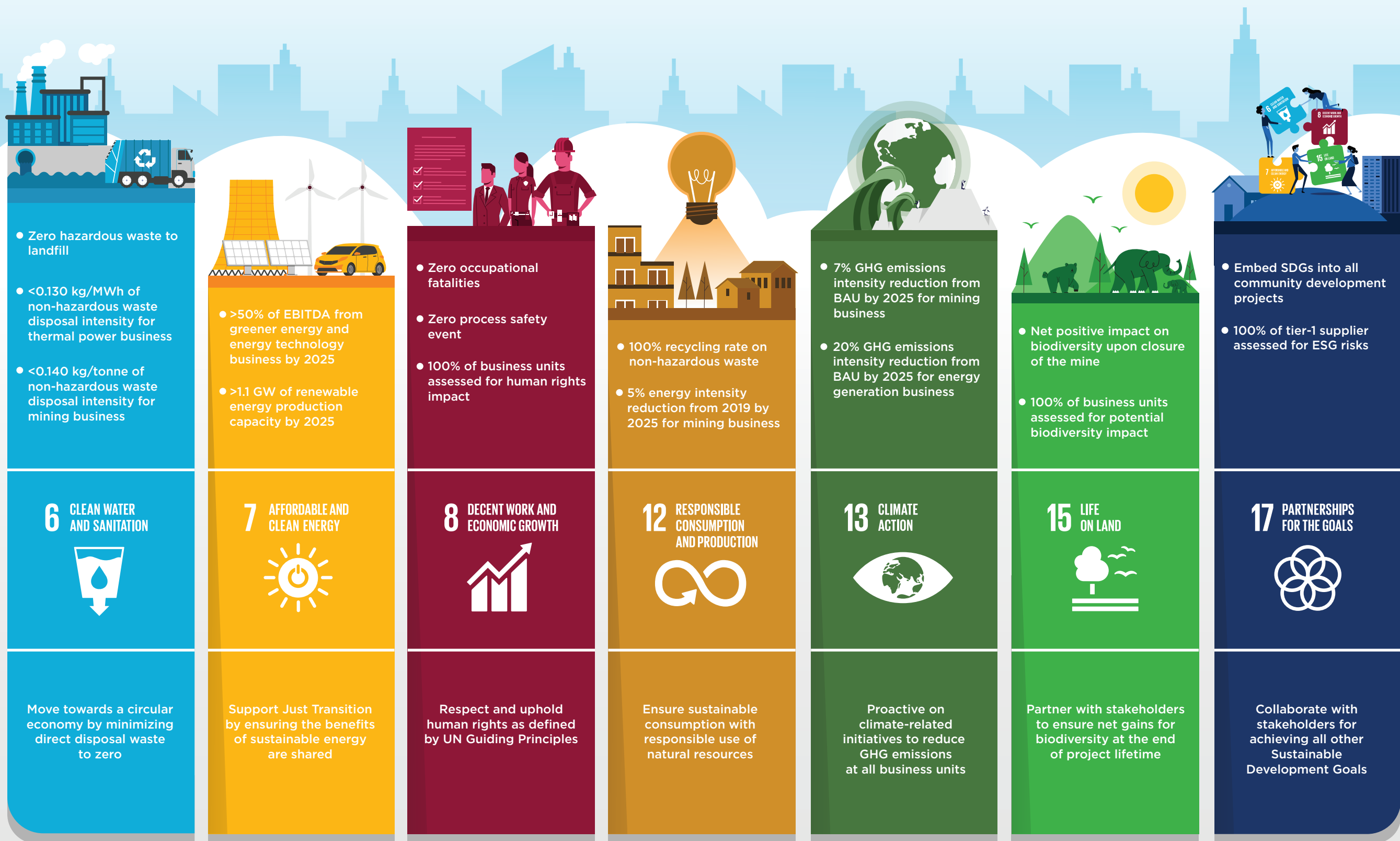


POWER GREEN CAMP

In partnership with the Faculty of Environment and Resources Studies at Mahidol University, the Company hosted the “18th Power Green Camp” under the “Environmental Science — Learn to Practice” theme. In October 2023, the camp embraced the theme “Waste Warriors, Mission to Save the World: Green Cloud – Green Tech – Green Influencer”, focusing on innovative approaches to waste management.











The camp brought together 50 high school and vocational college students selected from 48 schools across 30 provinces. Participants embarked on a learning journey about waste management from inception to disposal. The camp concluded with the environmental science group project competition, allowing students to showcase their innovative solutions to the camp committee and the public. This camp empowered young individuals to tackle real-world waste issues collaboratively with local communities.

BANPU AND SDGs



GOVERNANCE

PERFORMANCE HIGHLIGHT

		2023	Target 2023	Target 2025
	Coverage of material ESG aspects embedded in CEO's KPI and deployed to senior management	86%	100%	100%
	Number of cybersecurity breaches	0	0	0
	IT and IoT assets securely managed by security operation center	70%	≥90%	≥90%
	Coverage of ESG risk management	98%	100%	100%
	Proportion of critical tier-1 suppliers assessed for ESG risks	84%	-	100%
	Complaints regarding customer privacy	0	0	0
	Significant non-compliance	0	0	0
	Number of significant corporate governance complaints	0	0	0
	Availability factor of power plants • Combined Heat and Power (CHP) • Combined Cycle Gas Turbine (CCGT)	95.98% 82.68%	≥90% -	≥90% -
	Coverage of BCP exercise for critical business functions	49%	≥30%	≥64%

SUSTAINABILITY MANAGEMENT



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.

PERFORMANCE OVERVIEW

	2023	Target 2023	Target 2025
Coverage of material ESG aspects embedded in CEO's KPI and deployed to senior management	86%	100%	100%

MANAGEMENT APPROACH

To champion sustainability at the forefront of our operations, the Company has established a "Sustainability Committee", a strategic assembly of senior executives and business unit heads from every country where the Company operates, chaired by the CEO – who also serves as a member of the Board of Directors. The committee convenes twice a year with key responsibilities as follows:

- Endorse and recommend policies, strategies, and objectives regarding ESG matters
- Provide recommendations for stakeholder engagement and materiality assessment process
- Monitor ESG performance and identify areas for improvement
- Oversee the Company's adherence to sustainability principles and international standards in the public disclosure

Furthermore, the Company has established a "Climate Change Committee" to formulate climate strategy and practices in addressing the challenges posed by climate change. In practice, the "Global Corporate Sustainability" department is the center in driving sustainability initiatives by collaborating across various departments to co-create plans and guidelines, set ambitious goals, and cultivate sustainability awareness among employees and stakeholders.



Management
Approach



YEAR IN REVIEW

In 2023, the Sustainability Committee convened twice with a focus on the rigorous monitoring and evaluation of the ESG performance against targets. This included a thorough review of the related policies, such as Environmental Policy and Human Rights Policy, alongside the endorsement of ESG targets.

To deepen understanding and engagement with ESG management across the organization, the Company organized "ESG Summit 2023." This event served as a platform for discussing ESG strategy and long-term plans. Furthermore, Banpu Power, a key subsidiary in Thailand, hosted a seminar titled "ESG Risks and Trends in Power Business" to educate the Board of Directors, senior executives, and relevant functions on the evolving risks and trends within the power industry.

ESG SUMMIT 2023

To address ESG-related challenges, the Company held the ESG Summit 2023 on October 10th, under the theme “Sustainability Horizons: Pioneering Decarbonization and Data Privacy & Cybersecurity”. The summit was graced by the ESG committee and senior executives from all business units, unified in exploring 2 main topics: climate change & carbon reduction and data privacy and cybersecurity. At the summit, the Company welcomed external experts to share value insights under the topic “Strengthen Cyber Readiness” focused on cyber attacks.



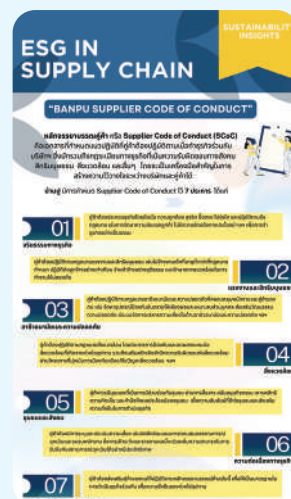
MEETINGS OF SUSTAINABILITY-RELATED COMMITTEES

To ensure a comprehensive approach to sustainability, the Company's governance structure includes 2 distinct tiers of committees dedicated to sustainability-related matters: the ESG Committee, which operates at the board level, and the Sustainability Committee, which functions at the management level. Each committee plays a crucial role in guiding our sustainability strategy and operations. Below are the key discussion points addressed in their meetings throughout 2023.

COMMITTEE	KEY AGENDA
ESG Committee (4 times/year)	<ul style="list-style-type: none"> • Consider progress of the decarbonization program and review long-term plan for net-zero announcement • Consider progress of measure to control cybersecurity risk • Consider ESG-related strategies, indicators, and targets • Consider ESG-related risks • Consider human rights roadmap • Consider material issues and monitor ESG performance
Sustainability Committee (2 times/year)	<ul style="list-style-type: none"> • Oversee and monitor sustainability index and ESG rater • Monitor plan and review performance • Consider ESG in supplier management • Monitor ESG data management platform • Monitor progress of human rights management • Consider the disclosure of sustainability data according to IFRS • Consider the financial impact of climate change according to TCFD framework • Consider and approve policies e.g. Environmental policy and Human Rights • Consider and approve ESG Target 2022-2025

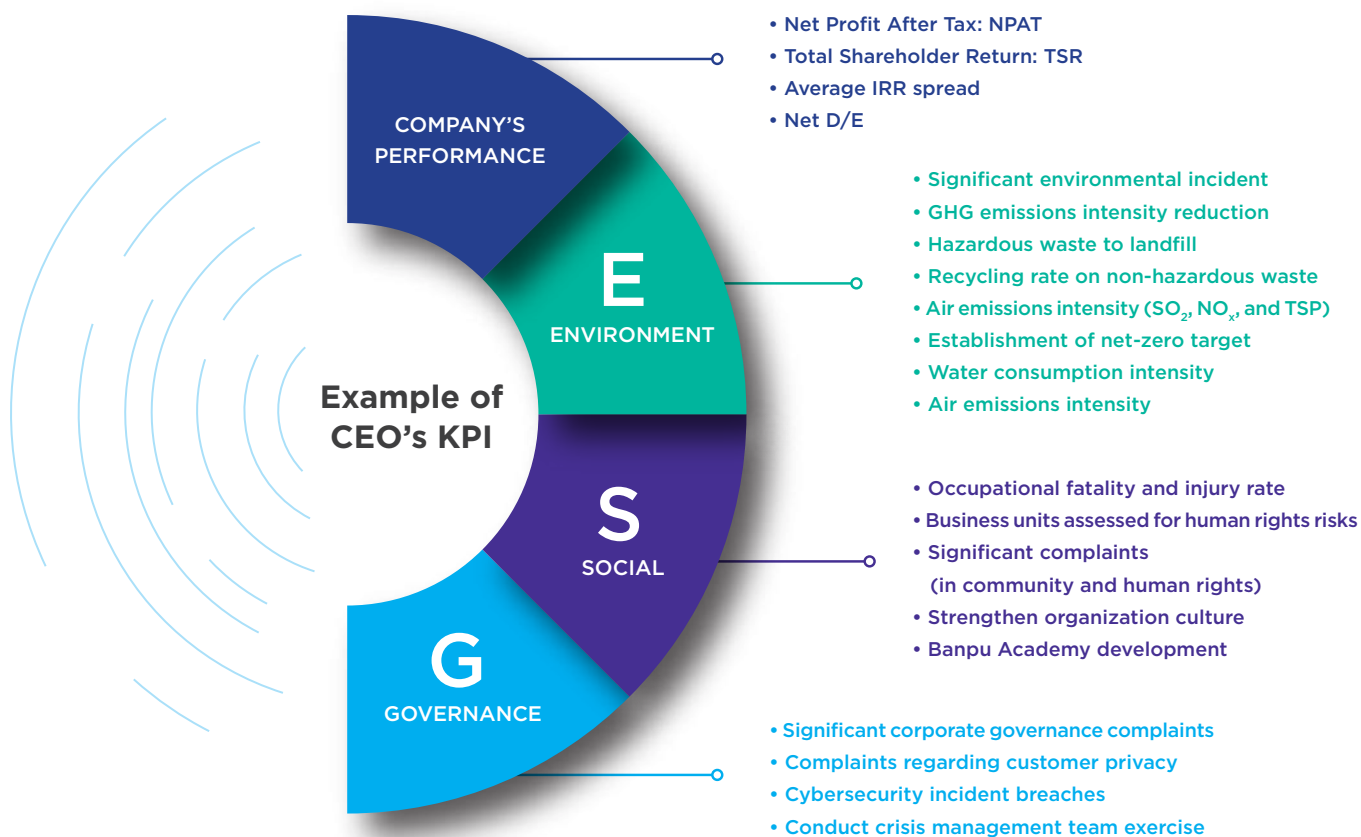
SUSTAINABILITY AWARENESS

Recognizing the importance of ESG awareness across all levels, the Company embarked on an internal communication newsletter to provide employees with comprehensive knowledge about ESG principles in user-friendly infographics.



PERFORMANCE EVALUATION OF CEO AND SENIOR MANAGEMENT

Establishing the CEO's Key Performance Indicators (KPIs) is a critical process overseen by the Board of Directors, with the Compensation Committee playing a vital role in the initial review. These KPIs encompass 6 areas: Group Strategy, Company's Performance, Funding Strategy, People & Culture, Communication & Network, and Commitment to ESG. The dedicated focus on the commitment to ESG accounts for 15% of the total KPIs. Within the ESG category, specific KPIs cover critical sustainability metrics, such as GHG emissions intensity reduction, occupational fatality and injury rate, and significant corporate governance complaints. The Compensation Committee evaluates the CEO's performance against these KPIs and proposes to the Board of Directors for final consideration. In parallel, the KPIs for senior executives are directly aligned with these CEO's KPIs, in which performance are evaluated by the CEO.



DATA PRIVACY & CYBERSECURITY



SIGNIFICANCE & COMMITMENT

The Company employs digital technology under the vision of Digital Business Enablement Focus, which underpins the dedication to ESG principles and fosters sustainability throughout the business. By leveraging cutting-edge technologies such as Artificial Intelligence (AI), Internet of Things (IoT), and Data Analytics, the Company is streamlining and automating operations as well as enhancing its ability to make data-driven decisions. The prioritization of data protection is integral to the strategy alongside modern processes to ensure business continuity and alignment with future business directions.



Information and Cybersecurity Policy

PERFORMANCE OVERVIEW

		2023	Target 2023	Target 2025
Number of cybersecurity breaches	✓	0	0	0
Number of IT infrastructure incidents	✓	0	0	0
Percentage of IT and IoT assets securely managed by Security Operation Center (SOC)	✗	70%	≥90%	≥90%
Cybersecurity & privacy maturity score	✓	3.5	≥2.5	-

MANAGEMENT APPROACH

The Company announced the Information and Cybersecurity Policy, which draws upon the ISO/IEC 27001 framework. This policy marks a significant step in weaving cybersecurity management seamlessly into enterprise risk management, under the supervision of the Audit Committee. To ensure that cybersecurity is effectively managed, a Global Information Security Officer (GISO) has been appointed to lead data privacy and cybersecurity governance across the entire organization. This comprehensive approach covers both Information Technology (IT) and Operational Technology (OP), with an emphasis on the ongoing identification of vulnerabilities within applications aligned with agile methodologies. In addition, the Company strengthens security and privacy risk management concerning third-party engagements while also intensifying cybersecurity awareness efforts to prevent threats arising from evolving technologies.



Management Approach

YEAR IN REVIEW

In 2023, the Company has undertaken significant initiatives to enhance cybersecurity supervision. Among the important initiatives, Cyber-Physical System (CPS) Strengthening stands out as a key strategy. This approach involves a detailed cybersecurity assessment conducted in collaboration with the power business, leveraging external experts to ensure compliance with safety guidelines applicable to both information technology and operational technology. The insights gained from this assessment are used for the enhancement of people, process, and technology, ensuring a robust defense mechanism against potential cyber threats.

In addition, the Company has recently launched a Self-Hacking by White Hackers program. This initiative engages skilled, ethical hackers to identify vulnerabilities within the applications that the Company relies on. This proactive approach allows us to address and rectify security weaknesses promptly, ensuring the resilience of the digital assets. The outcomes of this program will enhance the Company's quality assurance process, ensuring comprehensive coverage across all aspects of operations and aligning with the modern work practices.

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.

PERFORMANCE OVERVIEW

		2023	Target 2023	Target 2025
Coverage of ESG issues in the enterprise risk management	✗	98%	100%	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 Committee (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
Approach

YEAR IN REVIEW

In the review of long-term ESG risks and risk responses, the Company has rigorously identified certain ESG risks that pose significant challenges to the operation and sustainability goals. Among these, 3 ESG risks have been defined as high priority due to their potential impact on the Company's performance and reputation: Human capital capability, Cybersecurity & personal data protection, and Climate change. Additionally, 2 emerging risks have been identified: Geopolitical risk and geoeconomic confrontations, and Insufficient ready-identified talents for business operations and growth.

Despite comprehensive mitigation actions developed for all these identified risks, the enterprise risk management framework currently does not fully cover one crucial aspect: Supplier management. This represents approximately 2% of ESG issues not yet fully integrated into the Company's risk management system.

Acknowledging this gap, the Company is actively working to enhance our supplier management practices. Efforts are underway to establish clear ESG standards for suppliers, alongside defining criteria for selection, auditing, and measuring their ESG sustainability performance to ensure that the operation of all suppliers is fully aligned with ESG principles.

MANAGEMENT OF EMERGING RISKS

	GEOPOLITICAL RISK AND GEOECONOMIC CONFRONTATIONS	INSUFFICIENT READY IDENTIFIED TALENTS FOR BUSINESS OPERATIONS AND GROWTH
CATEGORY	GEOPOLITICAL	SOCIETAL
Description	The geopolitical conflicts among nations and political factions, including the disputes between two economic superpowers utilizing diverse protectionist trade policies, such as alterations in the international order, could have direct and indirect impacts on the Company.	Expansion of business portfolio both domestically and internationally across value chain and the transition of business towards greener energy industries and integrating new technologies which necessitate the employment of skilled personnel with sufficient knowledge, experience, and expertise.
Impact	<ul style="list-style-type: none"> Decreasing revenue due to the volatility of coal, oil, and natural gas prices Increasing operational and investment costs due to stringent adherence to laws and regulations Supply chain disruption 	<ul style="list-style-type: none"> Inability to achieve business objectives, both operational results and investment returns Failing to seize opportunities for business expansion on new products or services, leading the organization to lose a competitive advantage
Mitigation action	<ul style="list-style-type: none"> Implement Trigger Action Response Plan (TARP) Diversify buyers and suppliers to reduce the risk of supply chain interruptions Analyze and research the clean energy industry and emerging technologies Annually review risks and strategic plans, including consideration for appropriate exit strategy in certain circumstances Execute a business partnership investment strategy 	<ul style="list-style-type: none"> Develop a "Human Capital Strategy" Address talent gaps through external recruitment Establish "Banpu Academy" as a dedicated function in fostering the learning culture organization and developing employee competencies & skills that are essential for sustainable business growth

MANAGEMENT OF ESG RISK

	SOCIETAL	ECONOMIC	ENVIRONMENT
Risk item	Human Capital Capability	Cybersecurity & Personal Data Protection	Climate Change
Risk appetite	<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> 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	Medium	High
Impact	High	High	High
Mitigation action	<ul style="list-style-type: none"> Review organizational structure and conduct workforce analysis Formulate training & development policy with 5% of salary budget allocation Develop corporate learning and development framework to fill competency gaps Strengthen specific skills for key professional positions Cultivate a growth mindset and digital capabilities Utilize the Success Factor system for succession planning of critical roles 	<ul style="list-style-type: none"> Announce the Information and Cybersecurity Policy Appoint a Global Information Security Officer (GISO) to oversee the management of cybersecurity and PDPA Raise employee awareness on cybersecurity (e.g. phishing tests) Obtain ISO 27001 certification Formulate a PDPA policy that explicitly ensures the personal data privacy of related stakeholders 	<ul style="list-style-type: none"> 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 Disclose Climate Change Report following the TCFD framework Expand investments in renewable energy and related business (e.g. CCUS)

DIGITAL TRANSFORMATION

SIGNIFICANCE & COMMITMENT

Digital transformation is a significant commitment to the Company, since it provides the fundamental shifts and key enablers in continual productivity improvement, operational efficiency, and digital business initiatives across the operations. Despite the challenges involved, the potential benefits i.e. enhanced competitiveness, improved customer experiences, and sustainable growth to stakeholders—make it a compelling imperative for businesses in today's digital age.

PERFORMANCE OVERVIEW

	2023	Target 2023	Target 2025
Number of digital self-service adoption cases*	20	-	-
Number of digital enabled business process cases	185	-	-
Reliability and availability of digital infrastructure services	99.9%	-	-

* Number of self-service's information discovery and coding tool adoption

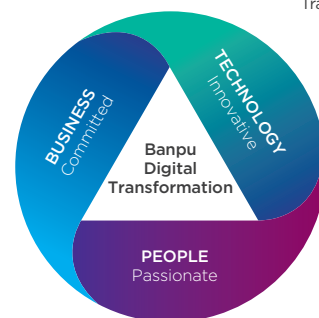
MANAGEMENT APPROACH

With the vision for what digital transformation means for the Company, various activities were performed to align with overall business strategy and outline specific goals, as well as objectives for transformation initiatives with strong leadership support at all levels of company following the Triple-transformation framework encompasses business, technology, and people.

The success of digital transformation can be reflected from the growth numbers of digital self-service adoption, digital enabled business process and reliability of our digital infrastructures. In addition, managements' commitment and sponsorship to new AI initiatives development, i.e. coal's supply chain optimization, analyzing trends of energy price in trading business, and productivity improvement in the modernized workplace, etc. are clearly defined to unlock the potential benefits across the group.



Digital
Transformation



YEAR IN REVIEW

In 2023, collaboration and knowledge exchanges programs are continually conducted to expedite a culture of innovation across the Company. These events involved teams of employees and business partners working collaboratively to solve specific challenges or develop innovative using digital technologies, such as collaboration with Chiang Mai University to support academic research and innovation and partner with NSTDA in accelerating toward carbon neutrality.

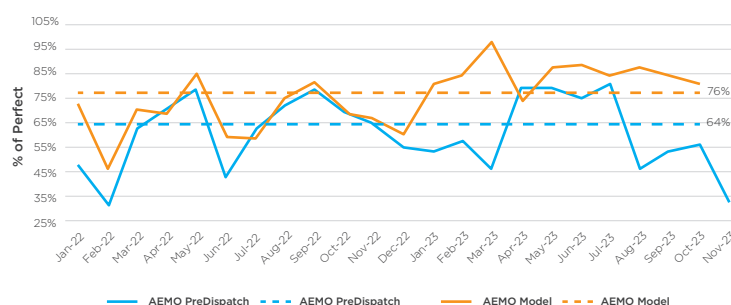


APPLICATION OF AI IN ENERGY TRADING BUSINESS IN AUSTRALIA

The Company has taken a strategic step forward by assembling a cross-border team dedicated to leveraging AI to enhance the profitability in the energy trading business in Australia. This AI showcase is designed to maximize the future battery revenue and improve outcomes of trading business with focus on 2 key goals:

- Forecasting the electricity dispatch price to optimize battery dispatch strategy.
- Predicting anomalies in pricing to mitigate risks associated with volatile market conditions.

Forecast Performance



This initiative has undergone a thorough analysis, revealing an opportunity to boost the business profit by 4.6 million AUD, based on a 22-month back-test result. Such potential gains underscore the transformative power of AI in revolutionizing energy trading business. Currently, the physical battery investment is under final assessment.

BANPU DIGITAL ACADEMY

The Company has established “Banpu Digital Academy” since 2018. The core mission is to elevate digital awareness and capabilities across the organization, fostering a “Digital Savvy” competency among employees. Banpu Digital Academy carries out a comprehensive journey of digital transformation that spans learning, action, and recognition phases, designed to embed digital fluency across all levels of the organization.

- **Learning:** Employees are offered curated learning paths to deepen their digital knowledge via the Udemy online learning platform. The top 5 courses include 1) Design Thinking in 3 Steps, 2) Scrum 101-A Fundamental Look at the Agile Scrum Master Role, 3) Lean Management: Reduce Waste and Boost Efficiency, 4) Creativity, Design Thinking, and Innovation for Business, and 5) Product Management Fundamentals.
- **Action:** Through activities like “Unbox iDeas”, employees are encouraged to apply their digital knowledge by developing innovative digital products that enhance work efficiency. The Hackathon event further promotes team collaboration and problem-solving through digital tools and techniques.
- **Recognition:** “Banpu Global Innovation Award” serves as a platform for knowledge sharing and recognition. This platform provides an opportunity for frontline staff from different countries to share their digital transformation use cases and initiatives.

Looking ahead, the Company plans to expand the UnBox iDeas program to other countries in 2024. This expansion underscores our commitment to driving digital excellence and innovation across global operations.

Online Learning

Participants	133 employees
Coverage	2% of FTEs (all countries)
Courses Register	269 courses
Total learning hours	846 hrs.
Average learning hours	8.63 hrs./person

Unbox iDeas

Product Owners & Facilitators	23 employees
Participants	~100 employees
Coverage	21% of FTEs (Thailand)
Outcome	5 ideas experiment



SUPPLIER MANAGEMENT



SIGNIFICANCE & COMMITMENT

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



Sustainable
Supply Chain
Policy

PERFORMANCE OVERVIEW

		2023	Target 2023	Target 2025
Proportion of spending on local suppliers	✓	86%*	≥50%	≥50%
Proportion of critical tier-1 suppliers assessed for ESG risks		84%*	-	100%

* Data from mining business in Indonesia and Australia, and gas business in the U.S. only

MANAGEMENT APPROACH

The Company announced the Sustainable Supply Chain Policy and published the Supplier Code of Conduct. These documents serve as guidelines 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, and incorporates digital technology to enhance efficiency and compliance. This is implemented as part of the long-term plan. The plan started with the supplier segmentation process, which evaluates various criteria, including procurement value, interdependency, impact on business operations, and associated risks. This segmentation utilizes the Kraljic Matrix method to prioritize those who are strategic suppliers or critical suppliers. More importantly, the Company supports local procurement by seeking to engage goods and services from local suppliers across all business units.



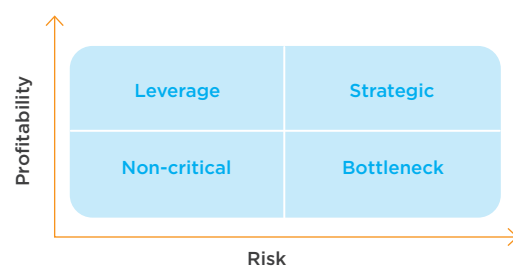
Management
Approach



Supplier
Code of Conduct

When the standard is fully implemented, the Company will conduct a preliminary ESG risk assessment for all critical suppliers prior to starting the procurement process. 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 commits to conducting annual audits as outlined in these plans to ensure ongoing compliance and proactively address any emerging issues.

Kraljic Matrix



YEAR IN REVIEW

In 2023, the Company conducted a comprehensive analysis of supplier segmentation using the Kraljic Matrix at 3 pilot areas: General procurement at the head office in Thailand, Banpu NEXT's operation in Thailand, and the mining business in Indonesia.

In addition, the Company initiated developing standards for supplier ESG screening and selection and supplier ESG assessment to enhance the supplier screening and performance evaluation processes. By embedding the ESG criteria into these standards, the Company selects suppliers who not only meet the operation needs but also align with the commitment to sustainability. This approach applies not only to existing suppliers but also to new suppliers seeking to collaborate with the Company.

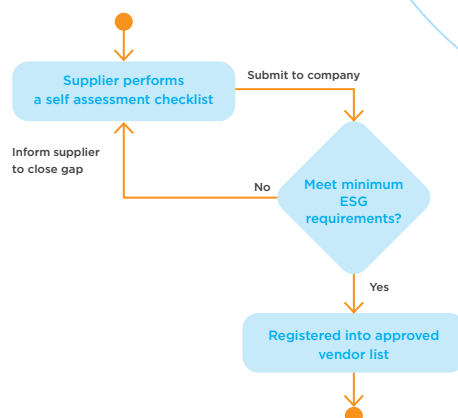
ESG INTEGRATION IN SUPPLIER SCREENING AND SELECTION

The Company has integrated ESG criteria into the supplier screening and selection process. The standard has been developed and deployed across the organizations. This standard outlines the flow process seamlessly from initial engagement with suppliers to the final awarding of contracts.

Building upon existing practices, the Company has streamlined the pre-qualification form. The criteria include social aspects such as health & safety and community impact, environmental aspects such as waste management, and governance aspects such as business ethics. While a self-assessment questionnaire serves as a tool for suppliers to evaluate their ESG performance, with scores evaluated based on evidence-supported responses.

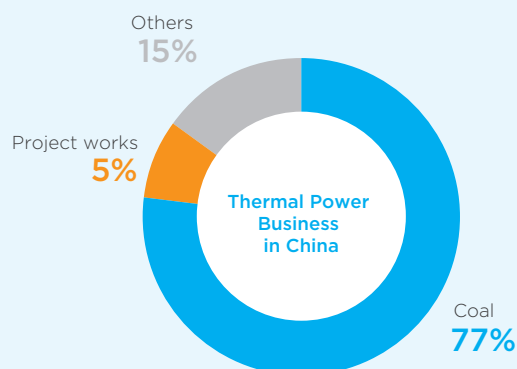
Simultaneously, the development of supplier ESG assessment standard is underway. This standard is crucial for identifying any significant actual or potential negative impacts that may arise during work and providing a basis for improvements. This is essential for the Company to identify, monitor, and address impacts throughout the entire supply chain.

Supplier Registration



SPENDING ANALYSIS

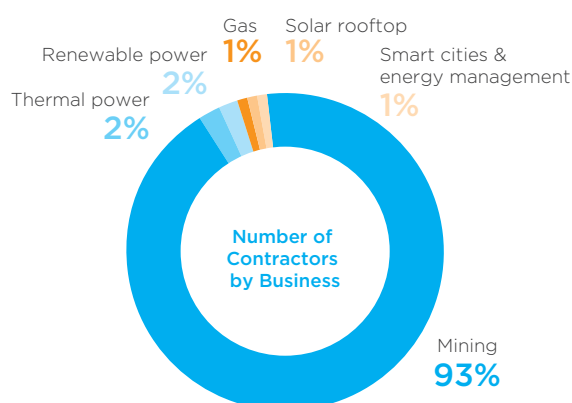
The spending analysis has been performed in each country to understand the distribution of expenses within different sectors. From the history records, analysis revealed that 63% of spending in Indonesia is directed towards mining contractors. While in China, 77% of spending is utilized for coal as an energy source.



COMMON TYPES OF CONTRACTORS

The Company has a systematic approach to classifying workers who are not employees. This classification encompasses all workers engaged with the Company, primarily the contractors.

Referring to the standards, the number of contractors is counted by headcount. However, there are specific exceptions in mining business in Australia and renewable power business in Japan, where full-time equivalent (FTE) is employed for tracking.



CUSTOMER MANAGEMENT



SIGNIFICANCE & COMMITMENT

The Company places the utmost importance on understanding and fulfilling customers' needs, firmly believing that the key to long-term success lies in maximizing customer satisfaction through products and services. This customer-centric approach is not just about meeting expectations but also about exceeding them, ensuring that every interaction is positive and value-driven.

PERFORMANCE OVERVIEW

		2023	Target 2023	Target 2025
Customer satisfaction rate	✓	99%*	≥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 Mining, Thermal power, Solar rooftop, and Energy trading business

MANAGEMENT APPROACH

The Company's Code of Conduct firmly states the commitment to delivering products and services that not only meet but exceed the customers' expectations. Recognizing that customer trust is paramount, the Company has developed and standardized several management approaches across our business units. Moreover, a material safety data sheet (MSDS) is available to the customer upon request. Safety and environmental issues related to product usage are also identified and managed with specific measures. Technical support for efficient product use with zero safety and environmental risk is also provided.



Management
Approach

The customer satisfaction survey is regularly conducted. Beyond surveys, individual interviews are also performed to gain insights into the specific issues and expectations. In practice, the management approach may vary according to each business context. Moreover, the Company provides various channels for customers to express their concerns and complaints, including telephone, email, and websites. The complaint management system is also established to ensure prompt and efficient responses, with a standard operating procedure, such as response time to the customer within the next business day.

YEAR IN REVIEW

The Company achieved commendable success in customer & product stewardship. Through diligent efforts and strategic initiatives, we were able to maintain high standards of service and product quality across our operations. In 2023, the customer satisfaction survey was conducted covering key businesses, including Mining, Thermal power, Solar rooftop, and Energy trading. The results were remarkable, with a satisfaction level of 99%. In addition, no complaints were received regarding product and service delivery, customer privacy, or safety and environmental issues from using the Company's products throughout the year.

CUSTOMER RELATIONSHIP MANAGEMENT

While the customer satisfaction survey is regularly conducted, the Company tailors customer relations approach to stay aligned with customers' thoughts and expectations in each business context. In practice, the approach varies from detailed satisfaction surveys to on-site visits, and from sharing know-how to providing quarterly updates and hosting open houses.

BUSINESS	EXAMPLE OF CUSTOMER RELATIONSHIP APPROACH
 Mining	<ul style="list-style-type: none"> • Customer satisfaction survey • Regular customer site visits • Knowledge sharing sessions • Quarterly performance reports • Open house
 Thermal power	<ul style="list-style-type: none"> • Customer satisfaction survey • Regular customer site visits • Technical supports
 Renewable power	<ul style="list-style-type: none"> • Knowledge sharing sessions • Performance reports
 Solar rooftop	<ul style="list-style-type: none"> • Customer satisfaction survey • Technical supports • Returns on investment evaluation report • 24-hour customer services
 Energy trading	<ul style="list-style-type: none"> • Customer satisfaction survey

CUSTOMER SATISFACTION SURVEY AT MINING BUSINESS

In 2023, the mining business conducted a customer satisfaction and engagement survey. The feedback was overwhelmingly positive showcasing high satisfaction with the coal quality, customer service, and communication. The customers highlighted that products and services are key to their concerns when conducting business with the Company. This feedback affirms a commitment to being a reliable and responsible supplier.



Coverage of customer survey	100%
Customer response rate	47%
Customer satisfaction rate	
• Product and service	100%
• Customer service	100%
• Communication	100%
• Engagement	100%

ECONOMIC DISTRIBUTION

SIGNIFICANCE & COMMITMENT

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

PERFORMANCE OVERVIEW

		2023	Target 2023	Target 2025
The ratio of the dividend payout to net profits	✓	73%	≥50%	≥50%

MANAGEMENT APPROACH

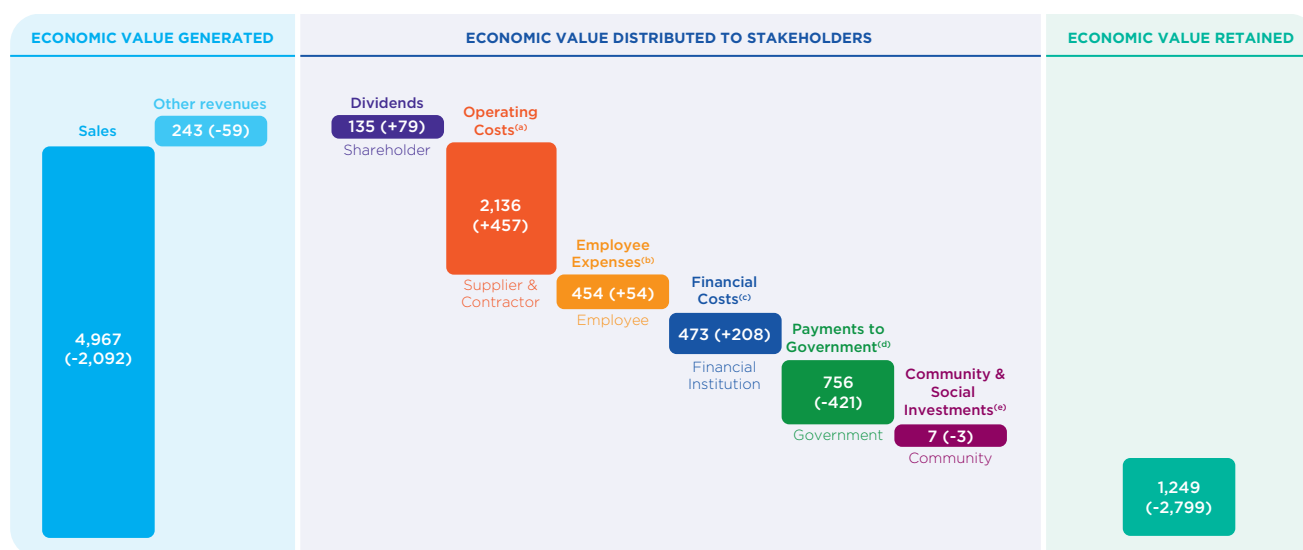
The Company aims to share wealth with related stakeholders in order to show good corporate citizenship. The Company places emphasis on taking responsibility to the countries where it operates by paying taxes and fees to the local authorities, local employment, and spending on the local products or services 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.



Management
Approach

YEAR IN REVIEW

In 2023, total sales revenue was USD 5,210 million and the Company paid dividends to shareholders in the amount of USD 135 million, which was beyond the target. Additionally, the Company maintained economic value distributed among all key stakeholders with details as follows:



Units: USD millions

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

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

^(c) Include interest and financial expenses

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

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

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. For transparency, the Company discloses such information to related stakeholders referring to the international best practices as well as aligned with local regulations.



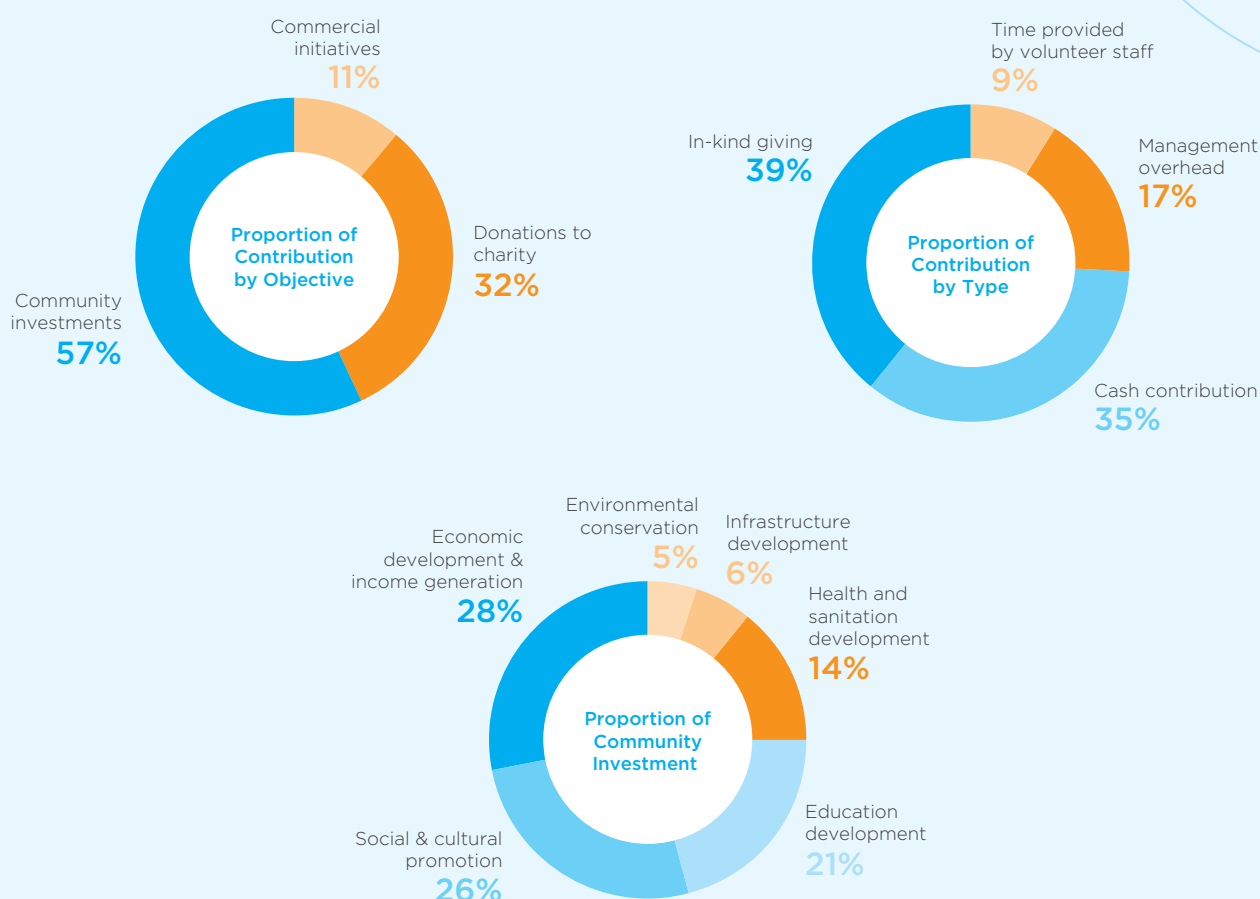
Tax Management
Approach



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.



COMPLIANCE



SIGNIFICANCE & COMMITMENT

The Company operates within a regulatory framework that includes various permits, licenses, laws, and regulations. A failure to comply with such requirements could lead to substantial fines, non-monetary sanctions, or loss of license to operate. Monitoring compliance is therefore part of day-to-day business operations.

PERFORMANCE OVERVIEW

		2023	Target 2023	Target 2025
Number of significant non-compliance	✓	0	0	0
• Number of significant fines	✓	0	0	0
• Number of significant non-monetary sanctions	✓	0	0	0
Total amount of significant fines (USD)	✓	0	0	0

MANAGEMENT APPROACH

The corporate compliance management system has been developed in alignment with ISO 37301:2021 and other pertinent compliance standards. Compliance status is reported to the management and the Audit Committee regularly. To ensure the effectiveness of the management system, the Company actively promotes compliance awareness among the employees through various channels, including monthly e-newsletters and in-house training sessions. In addition, a compliance department has been established at each business unit as a dedicated function responsible for managing and overseeing compliance-related matters.



Management
Approach

The Compliance Obligations List (COL) undergoes routine reviews and updates to ensure alignment with the latest regulatory requirements. In case of any new investments, the COLs are tailored to ensure seamless integration. The "Compliance in-Hand" application has been developed and deployed across the business, offering real-time and centralized access to crucial compliance information. In addition, the Company has taken proactive measures to prevent unforeseen events by conducting an annual audit to ensure adherence to laws and regulations across the business units.

YEAR IN REVIEW

In 2023, the Company enhanced the quality of compliance efforts to meet the requirements of ISO 37301:2021. This involved a thorough review and timely update of the COLs. The annual compliance verification has been conducted as planned. With a robust governance system, the Company incurred neither significant fines nor non-monetary sanctions.



THREE LINES OF DEFENSE IN COMPLIANCE MANAGEMENT

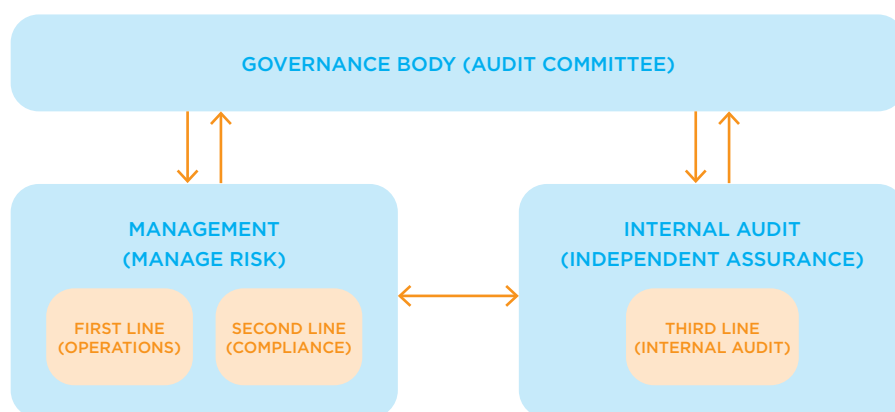
To ensure the effectiveness of compliance risk management, the Company has adopted three lines of defense practice. This model structures the roles and responsibilities across the organization to ensure comprehensive oversight and control.

First Line: Operational departments, which are at the forefront of daily business operations ensuring that operations are conducted without being exposed to unnecessary risks by adhering strictly to the policies and guidelines.

Second Line: Compliance department, which plays an important role in strengthening business units by formulating and assessing policies to align with both laws and regulations, and organizational objectives. Besides, when any business concerns arise, the compliance team collaborates closely with the legal department to provide advice for execution.

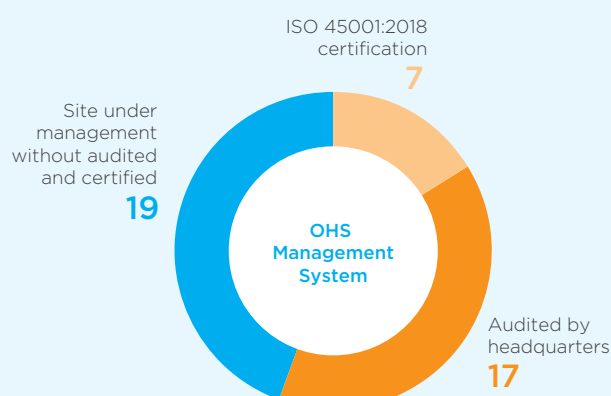
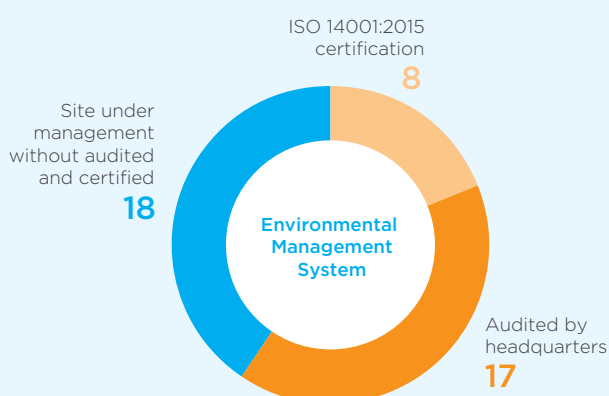
Third Line: Internal audit function, which provides an independent assessment of the performance of both the first and second lines, ensuring all business processes are functioning effectively. The Audit Committee oversees this function to ensure alignment with best practices and regulatory requirements.

In addition, the compliance department promotes awareness and alignment with laws and regulations, fostering a culture of adherence to both internal policies and external regulations.



MANAGEMENT SYSTEM CERTIFICATION

The Company maintains environmental and occupational health and safety (OHS) management systems across all business units, with annual internal audits conducted by specialists from headquarters. In addition, the Company engages third parties to conduct independent assessments in selected business units. These certifications are in accordance with ISO 14001: 2015 for environmental management and ISO 45001:2018 for OHS management.



BUSINESS ETHICS



SIGNIFICANCE & COMMITMENT

Business ethics stands at the heart of stakeholder interest. Operating the business by adhering to ethical practices is not just for the Company's reputation but also the very foundation of stakeholder trust. Thus, upholding business ethics is not an optional but the cornerstone of any business operation.



Corporate
Governance Policy and
Code of Conduct

PERFORMANCE OVERVIEW

	2023	Target 2023	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 proudly upholds a Corporate Governance Policy and Code of Conduct that aligns with international standards, including the ASEAN Corporate Governance Scorecard, OECD guidelines, and the Corporate Governance principles of Thai listed companies according to the Securities and Exchange Act, the Securities and Exchange Commission (SEC), and the Stock Exchange of Thailand (SET). The Company has regularly reviewed the Corporate Governance Policy and Code of Conduct to ensure alignment with these standards.



Management
Approach

Concerning the crucial importance of conflicts of interest, the Code of Conduct ensures board members, executives, and staff do not exploit their positions for personal gain, steering clear of transactions that could conflict with the Company's interests. Should such a transaction be necessary, it must be carried out with the same practices as a third party. In addition, the transaction must be fully disclosed with prior approval from the appropriate authority within the Company. Moreover, anyone with a vested interest in a transaction is excluded from its approval process. If a transaction is considered a related-party transaction under the SET regulations, it must strictly adhere to the disclosure rules regarding information disclosure by listed companies.

YEAR IN REVIEW

In 2023, dedicated to upholding the Corporate Governance Policy and Code of Conduct and best corporate governance practices, apart from the legacy practices such as new staff orientation, internal communications, GC-focused articles in an internal magazine, and CG E-learning and E-testing, the Company launched the activities with the concept "CG Safeguards" which is a series of initiatives designed to weave our corporate culture with good governance. One of the key highlights is the CG Storytelling Contest, which is the activity encouraging staff to share compelling stories that highlight the importance of good governance.



CG STORYTELLING CONTEST

The CG Storytelling Contest, themed “Every Story Needs to Be Told,” is an innovative approach to deepen employee engagement with corporate governance (CG) best practices. Participants are invited to share their experiences and impressions of colleagues who embody these principles, highlighting real-life examples of integrity and ethical conduct across the Company. The top three stories, celebrated for their inspiration, will be brought to life through video clips and showcased on CG Day.



CG DAY

CG Day 2023 took place on October 17, 2023, marking an annual event to enhance employee awareness and engagement on CG best practices and the Code of Conduct. This year, the top three stories from the CG Storytelling Contest shared their impression through CG stories centered around the theme of “integrity”.



CG FOCUS ARTICLE

“CG Focus” is a featured section in “Banpu Synergy E-Magazine”, a quarterly E-journal reaching employees across all countries where the Company operates. These articles shine a light on CG best practices within the organization and share updates on the updates on CG progress in order to foster understanding and awareness among the employees.



CORRUPTION RISK ASSESSMENT

The Company undertakes an annual assessment of corruption risks and preventive measures across all businesses globally, including subsidiaries and joint ventures. These findings are reported to the Risk Management Committee. Moreover, the Company maintains open lines of communication with the employees, regularly updating on key policies and practices designed to combat corruption. This includes guidance on the Corporate Governance Policy and the Code of Conduct, and the anti-corruption practices related to accepting and offering gifts, hospitality, or other similar forms of reward. All these policies are readily accessible to all employees via internal communication channels.



Anti-Corruption Policy

	RISK OF ACCEPTING AND OFFERING GIFTS	RISK OF REQUEST PERMIT AND LICENSE
Description	Accepting and offering gifts to key stakeholders on important occasions (i.e., courtesy call on New Year, reshuffle to new position and retirement)	Request for permit and license for business operation
Impact	Business opportunity	Operational activities delay or stop
Mitigation action	<ul style="list-style-type: none"> Announce External relation stakeholder management policy Deploy corporate standard on accepting and offering gifts, hospitality, or other similar forms of reward Announce anti-corruption policy 	<ul style="list-style-type: none"> Announce policy/guideline/procedure regarding corruption, such as code of conduct, anti-bribery and corruption policy Establish work procedures & guidelines regarding permit and license management and obligation fulfillment & monitoring

RELIABILITY OF POWER PLANTS



SIGNIFICANCE & COMMITMENT

Ensuring the reliability of electricity and heat supply is paramount for the customers because of its critical role for industrial process and the well-being of people in the communities that the Company serves. Recognizing this, the Company places the utmost importance on maintaining the highest efficiency levels in the power plants as it directly influences the production cost and the affordability and reliability of the services.

PERFORMANCE OVERVIEW

		2023	Target 2023	Target 2025
Availability factor	✓	95.98%	≥90%	≥90%
<ul style="list-style-type: none"> Combined heat and power plants Combined cycle gas turbine plants 		82.68%	-	-
Unplanned outage factor	✓	0%	<5%	<5%
<ul style="list-style-type: none"> Combined heat and power plants Combined cycle gas turbine plants 		0.51%	-	-

MANAGEMENT APPROACH

There are 2 types of power plants under the Company's portfolio: Combined Heat and Power (CHP) plant and Combined Cycle Gas Turbine (CCGT) plant. CHP plant generates electricity for the national grid while also supplying steam and hot water to the industrial and residential customers. This dual output enhances the sustainability of the operations by reducing waste and increasing efficiency. CCGT plant is designed especially crucial for the free market, where its ability to generate electricity consistently is a key competitive advantage. By ensuring the CCGT plants are operational at all times, the Company mitigates the risk associated with electricity sales in the free market and seizes opportunities to maximize profits during peak demand periods.



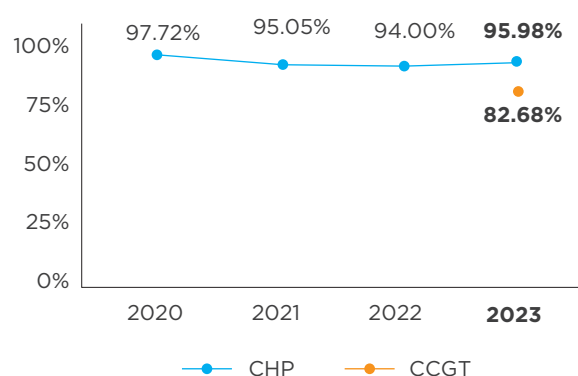
Management
Approach

To sustain high levels of plant reliability and efficiency, all maintenance activities are planned for periods at low energy demand in order to optimize plant readiness for peak periods during the winter and summer. The planned maintenance is performed to prevent unplanned outages, maintain reliability, and enhance overall efficiency. By adopting digital technology, the Company enhances resource utilization, reduces energy losses, and drives the efficiency of the plants.

YEAR IN REVIEW

In 2023, the Company successfully sustained an exemplary level of performance in both efficiency and reliability. There is no unplanned outage across the CHP operations, while only 0.51% of the outage factor for CCGT plants. The efficiency rate is at an outstanding level as a result of the technology adoption. The availability factors reaching 95.98% for CHP and 82.68% for CCGT plants indicate that the plants can reliably supply energy to meet customer demands.

Availability Factor



BUSINESS CONTINUITY



SIGNIFICANCE & COMMITMENT

In volatile business environment, the Company may experience the disruptions stemming from natural disasters, technological failures, man-made threats, or other unforeseen crises. By embedding business continuity management into the strategic planning and operational practices, the Company aims to not only minimize potential losses during disruptions but also ensure the swift recovery and continued resilience of the business operations.



Business Continuity Policy

PERFORMANCE OVERVIEW

		2023	Target 2023	Target 2025
Coverage of CMT/IMT exercise	✗	57%	≥71%	100%
Coverage of BCP exercise for critical business functions	✓	49%	≥30%	≥64%

MANAGEMENT APPROACH

The Company's business continuity management system is developed based on ISO 22301:2019 and encompasses various processes including critical business function identification, business impact analysis, risk assessment, Business Continuity Plan (BCP) development, and BCP testing & exercising. 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 testing & exercising at each level are carried out regularly to validate the effectiveness of BCPs and to enhance organizational awareness.



Management Approach

Additionally, specialized 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







The Company has been certified for ISO 22301:2019 since 2022. This certification covers both the head office and related businesses in Thailand, as well as subsidiaries in China. In 2023, the Company carried out the annual BCP testing & exercising across various levels, with a focus on country-level at the head office in Thailand as well as subsidiaries in China, Australia and Japan.

The outcomes of 2023 exercises were in accordance with the set objectives whereby the IMT was promptly activated in response to the simulated incidents. Meanwhile, the business continuity plans for critical business functions were effectively implemented with recovery actions initiated within the pre-defined recovery time objectives. Throughout the exercises, incidents were communicated to stakeholders in a timely and appropriate manner.



ENVIRONMENT

PERFORMANCE HIGHLIGHT

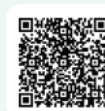
		2023	Target 2023	Target 2025
	GHG emissions intensity reduction • Mining business • Power business	4% -34%	-3% -12%	-7% -20%
	Energy consumption intensity • Mining business • Thermal power business • Renewable power business	0.588 2.304 0.121	≤0.438 ≤1.550 -	≤0.428 ≤1.550 -
	Water consumption intensity • Mining business • Thermal power business	1.882 0.958	≤0.144 ≤0.868	- ≤0.868
	Hazardous waste to landfill	1,176	0	0
	Business units assessed for potential biodiversity impact	100%	100%	100%
	Business units assessed for biodiversity value	100%	100%	100%
	Air emissions intensity (SO₂) • Mining business • Thermal power business	21.09 11.88	≤30 ≤76.6	≤30 ≤76.6
	Number of reports related to mine subsidence	0	-	-
	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 the portfolio and reducing GHG emissions intensity.



Climate Change
Policy

PERFORMANCE OVERVIEW

		2023	Target 2023	Target 2025
GHG emissions intensity reduction*				
• Mining business	✗	4%	-3%	-7%
• Power business	✓	-34%	-12%	-20%
GHG emissions intensity**				
• Mining business (tonne CO ₂ e/tonne coal)	✗	0.135	≤0.126	≤0.137
• Power business (tonne CO ₂ e/MWh)	✓	0.438	≤0.590	≤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. Recognizing the importance of strategic climate response, the Company has set climate change management as one of the KPIs for CEO and senior management across relevant business units. The Climate Change Committee has been established to ensure implementation of a climate change management strategy focusing on 4 measures – Mitigating emissions, Being adaptive, Being a part in a low-carbon society, and Participating in a climate change community.



Management
Approach



MITIGATING
EMISSIONS



BEING
ADAPTIVE



BEING A PART IN
A LOW-CARBON
SOCIETY



PARTICIPATING IN
A CLIMATE CHANGE
COMMUNITY

YEAR IN REVIEW

The Company has set a long-term target and established a roadmap in alignment with the Paris Agreement to limit global temperature increases to below 1.5°C. In 2023, several decarbonization workshops were arranged across all business units under operational control. These workshops were designed to engage every business unit in a comprehensive discussion on decarbonization, fostering a collaborative approach to identifying effective mitigation strategies and evaluating the feasibility of carbon capture activities.

In addition, the Company has made significant advancements in addressing other indirect GHG emissions (Scope 3) in 12 categories across 6 key businesses. The Scope 3 disclosure has been expanded to cover 3 categories, including business travel, use of sold products, and investment.

TARGETS AND PROGRESS

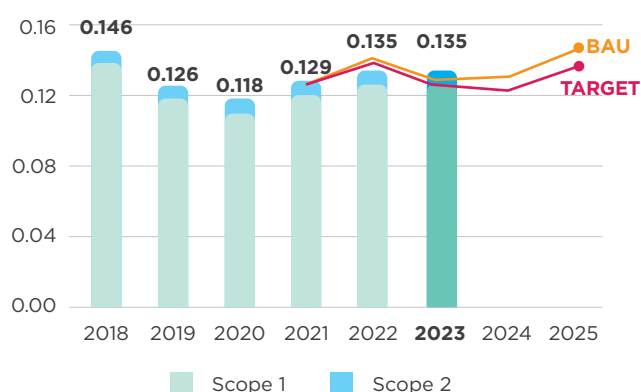
Mining Business

The GHG emissions intensity was 0.135 tonnes CO₂e/tonne coal, which did not meet the target. The emissions increased by 4% compared to the business-as-usual (BAU) due to higher fuel consumption in the open-pit operations. Despite this, the Company had significant reductions in the underground mines, reducing emissions by approximately 500,000 tonnes CO₂e.

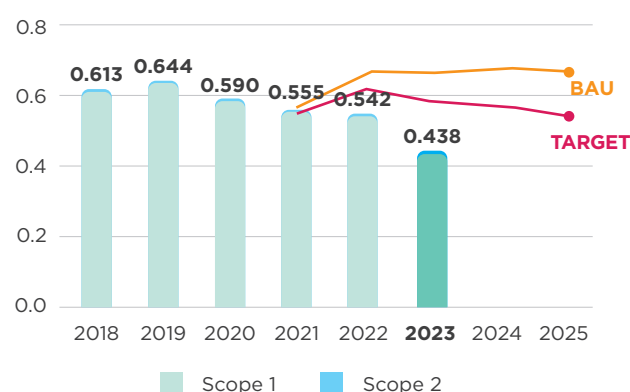
Power Business

The GHG emissions intensity was 0.438 tonnes CO₂e/MWh, which was achieved the target. This represents a substantial 34% decrease compared to the BAU. This reduction resulted from the Company's proactive approach in seeking opportunities to increase the proportion of total electricity generation from renewable energy and developing initiatives on energy efficiency within the thermal power plants.

GHG Emissions Intensity (tonnes CO₂e/tonne coal)
Mining Business



GHG Emissions Intensity (tonnes CO₂e/MWh)
Power Business



PAD OF THE FUTURE

BKV, a subsidiary in the U.S., has taken a groundbreaking step towards decarbonization with the Pad of the Future program. This flagship initiative aims to reduce emissions within NEPA and Barnett operations by integrating operational improvements and modern technology. Launched in 2021, the program is a testament to BKV's commitment to enhancing efficiency and minimizing carbon footprint through 4 strategic pillars:

- **Pneumatic conversion:** Convert natural gas-powered pneumatic controllers to compressed air on existing electrified pads
- **Electrification:** Where feasible, electrifying pads to supplant use of natural gas in processing units and adding solar power to support pneumatic conversions from natural gas to air
- **Asset consolidation:** Streamline and modernize existing pad facilities to reduce emissions caused by aging assets
- **Liquid consolidation and vapor capture:** Minimize onsite storage of condensate and oil by transporting liquids rich in natural gas to centralized facilities



With an estimated investment of 35 to 40 million USD, the program is set to impact over 6,000 of BKV's existing wells (more than 8,000 pneumatic devices and 2,000 pneumatic pumps) by the end of 2025. To date, these efforts have led to an aggregate reduction of 515,000 tonnes CO₂e in 2023 and anticipated reduction of approximately 770,000 tonnes CO₂e by the end of 2025.

EMISSIONS SOURCES

The Company has undertaken an analysis to identify 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	●		●									
Smart cities and Energy Management	Energy efficiency unit	●	●										●

CLIMATE-RELATED RISKS AND OPPORTUNITIES

In 2023, the Company conducted an assessment to identify high-priority risk items which have substantive impacts on the operations. The scenario analysis has been fully disclosed in the Climate Change Report, adhering to the TCFD recommendations.

BUSINESS	ITEM	ENERGY RESOURCES			ENERGY GENERATION			ENERGY TECHNOLOGY		
		Short term	Medium term	Long term	Short term	Medium term	Long term	Short term	Medium term	Long term
Transition Risk	Carbon pricing	●	●	-	●	●	●	●	●	●
	Stigmatization of the sector	●	●	-	●	●	●	●	●	●
Physical Risk	Drought	●	●	●	●	●	●	●	●	●
	Heat	●	●	●	●	●	●	●	●	●
	Heavy precipitation	●	●	●	●	●	●	●	●	●
	Wildfire	●	●	●	●	●	●	●	●	●
Opportunity	Developing/expanding low-carbon products and services	○	○	○	○	○	○	○	○	○
	Participating in carbon market	-	-	-	○	○	○	○	○	○

Risk high ● ● ● ● low
 Opportunity high ○ ○ ○ ○ low

INDIRECT GHG (SCOPE 3) EMISSIONS

The Company has addressed the concerned category for other indirect GHG emissions (Scope 3) at 6 key businesses. This aligns with the technical guidance for calculating Scope 3 emissions (version 1.0). Since 2019, the Company has disclosed Scope 3 emissions, with current report covering 3 key categories.

CATEGORY	BUSINESS					
	Mining	Gas	Thermal power	Renewable power	Solar rooftop	Smart cities and energy management
1. Purchased goods and services	✓	✓	✓	✓	✓	✗
2. Capital goods	✓	✓	✓	✓	✓	✓
3. Fuel- and energy- related activities beyond scope 1 and 2	✓	✓	✓	✓	✓	✓
4. Upstream transportation and distribution	✓	✓	✓	✓	✓	✓
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	✓	✓	✓	✓	✓	✓

GREENCODE DIGITAL PLATFORM

ITM, a subsidiary in Indonesia, faced with the challenge of carbon stock data gathering from the reclamation process due to manual data collection and no standard reference. This inefficiency delayed data collection and validation.

To pursue this challenge, ITM initiated the GREENCODE project, which is a digital platform and dashboard designed to ensure the validity and visibility of carbon stock data. The project was rolled out at Embalut and Jorong mine.

The introduction of GREENCODE has significantly improved the efficiency and effectiveness of reclamation monitoring. It has also enhanced decarbonization knowledge of team members. Economically, the project has delivered tangible benefits by reducing lead time to update carbon stock data of USD 36,746 annually. The Company also potentially minimizes future carbon tax and ensures reclamation compliance.



ENERGY



SIGNIFICANCE & COMMITMENT

Energy is a critical driver of global economic growth. Currently, energy markets worldwide face significant challenges in balancing supply with the rapidly increasing demand. This imbalance resulted in fluctuations in operating costs across various industries as well as the Company's operations. Therefore, the Company emphasizes optimizing energy management efficiency to navigate these challenges effectively.

PERFORMANCE OVERVIEW

		2023	Target 2023	Target 2025
Energy consumption intensity				
• Mining business (GJ/tonne coal)	✗	0.588	≤0.438	≤0.428
• Thermal power business (GJ/MWh)	✗	2.304	≤1.550	≤1.550
• Renewable power business (GJ/MWh)		0.121	-	-
• Solar rooftop business (GJ/MWh)		0.010	-	-

MANAGEMENT APPROACH

Energy consumption patterns vary significantly across different businesses, influenced by their operational environments. For instance, mining in Indonesia is open-pit, while mining in Australia is carried out underground. This leads to different energy conservation activities:

- Open-pit mining: Energy conservation efforts focus on enhancing the efficiency of transportation systems. This includes transitioning from haul trucks to conveyor belts and optimizing transportation routes to reduce fuel consumption.
- Underground mining: The focus is on improving the efficiency of electricity consumption. Strategies include implementing automatic control systems to determine the optimal speed for coal cutting and conveying, alongside regular inspections to ensure machinery operates efficiently.
- Thermal power: The Company emphasizes efficiency improvement by balancing the proportion of electricity and heat production in order to meet seasonal variations in customer demand.
- Renewable power and solar rooftop: The Company places emphasis on optimizing traveling plans to maximize fuel consumption efficiency.



Management
Approach

YEAR IN REVIEW

The Company has strategically aligned the energy management plan with the GHG management plan to optimize energy consumption. In 2023, the Company maintained a commitment to using alternative energy sources by continuing the use of B30 biodiesel in Indonesia. Additionally, feasibility studies for adopting B35 biodiesel have been conducted across all mine sites. Concurrently, the Company has been actively upgrading the combined heat and power plants in China. This includes the installation of equipment designed to boost energy efficiency.

TARGETS AND PROGRESS

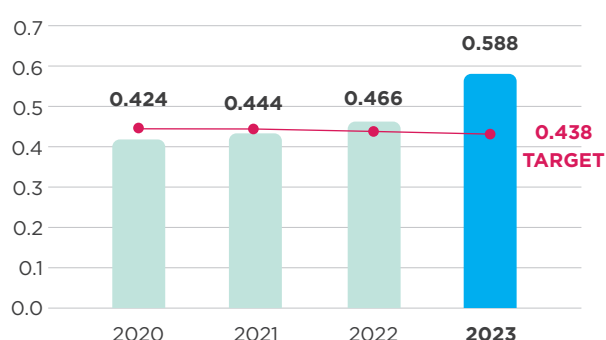
Mining Business

The Company experienced a slight increase in energy consumption intensity when compared to the target, with a rate of 0.588 GJ/tonne coal. The key factor contributing to this increase was the higher fuel consumption.

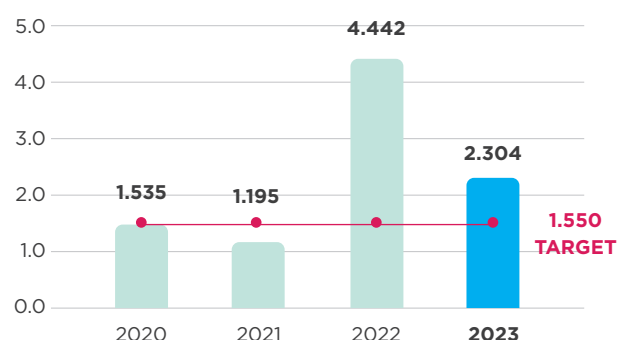
Thermal Power Business

The energy consumption intensity was 2.304 GJ/MWh. This year marked the first inclusion of performance data from thermal power operations in the U.S. Meanwhile, the energy consumption intensity of thermal power plants in China has reduced by 15% from the previous year due to the successful implementation of a boiler performance improvement project and a waste gas heat recovery initiative.

Energy Consumption Intensity (GJ/tonne coal)
Mining Business



Energy Consumption Intensity (GJ/MWh)
Thermal Power Business



ENERGY REDUCTION FROM COAL HANDLING IN INDONESIA

In accommodating customer demand and blending various coal types, the utilization of Low CV coal sourced from third parties has been favored. However, this type of coal tends to cause blockages within chutes during the rainy season, disrupting the seamless transfer of coal between conveyors. Such blockages not only prolong cleanup efforts but also interrupt loading processes. Traditionally, chute blockages were managed using labor-intensive techniques like high-pressure water spraying or manual removal, which were constrained by limited staff availability.

In response to the operational inefficiencies and environmental concerns linked to excessive water usage, Bontang Coal Terminal (BoCT) in Indonesia introduced an innovative solution in March 2022: “the installation of air cannons in transfer chutes”. These cannons autonomously release periodic air blasts to clear material buildup. Since implementing this system, remarkable improvements have been observed:

- 80% reduction in delays and cleanup times due to chute blockages
- 5% increase in gross loading rate
- Annual reduction in energy consumption by approximately 538 MWh, leading to a decrease in GHG emissions of around 125 tCO₂e per year.

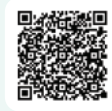
These outcomes underscore the effectiveness of the air cannon system in enhancing operational efficiency while mitigating environmental impacts.

Budget	USD 36,772
Business impact	USD 302,281

WATER

SIGNIFICANCE & COMMITMENT

Limited water resources are of utmost concern to all stakeholders as water is essential to human life and one of the key resources for industries. Inefficient water management poses significant risks to both water availability and quality. The water crisis could escalate into conflicts with local communities and finally impact credibility of the Company.



Water Management
Policy

PERFORMANCE OVERVIEW

		2023	Target 2023	Target 2025
Water consumption intensity				
• Mining business (m ³ /tonne coal)	×	1.882	≤0.144	-
• Gas business (m ³ /MMcf)		15.440	-	-
• Thermal power business (m ³ /MWh)	×	0.958	≤0.868	≤0.868
• Renewable power business (m ³ /MWh)		3.388	-	-

MANAGEMENT APPROACH

Recognizing the importance of water and its potential impacts of water scarcity, the Company has developed a water management strategy aligned with the water management hierarchy, including elimination, reduction, and reuse/recycle across all states — water withdrawal, water consumption, and water discharge.



Management
Approach



To ensure responsible water stewardship, the Company has conducted an annual water risk assessment with the Aqueduct Water Risk Atlas of the World Resource Institute for all business operations. Such assessments are crucial for shaping the water management plan. In addition, the Company has developed a comprehensive database that tracks water consumption and maintains a water balance for each business unit, allowing for precise monitoring and management of water footprints.

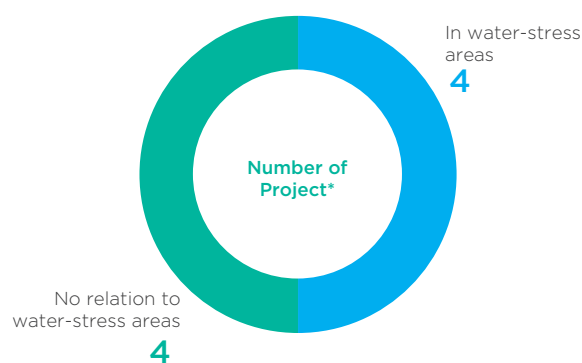
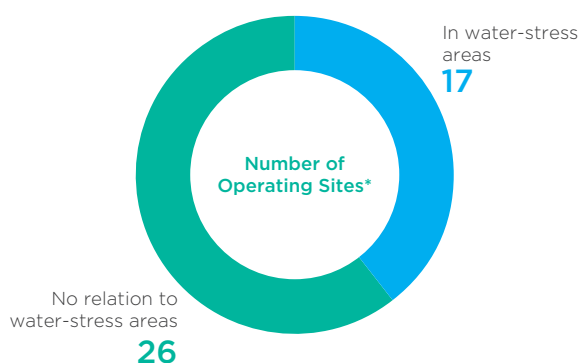
Moreover, the Company has established minimum water discharge limits to ensure compliance with laws and regulations. Additionally, specific measures are tailored to effectively mitigate water-related impacts and protect the interests of all stakeholders.

YEAR IN REVIEW

In 2023, the Company updated the water management standard aimed at reducing the adverse effects of utilizing natural water resources. This includes conducting detailed water footprint assessments for each business unit, which serve as valuable internal resources to shape the water management strategies. In addition, the Company cooperated with external agencies involved in basin management in Indonesia.

WATER-STRESS AREAS IDENTIFICATION

The Company has conducted an annual water risk assessment for all business operations using the Aqueduct Water Risk Atlas provided by the World Resource Institute. By understanding the specific risks associated with each location, water management plans can be tailored to address potential water scarcity, ensuring the water use is sustainable and does not adversely impact the local communities and environments.



* Includes only business units with >50% share and has management control

WATER TREATMENT SYSTEM OPTIMIZATION IN CHINA

At Zouping power plant in China, the Company faced significant challenges due to high water consumption of demineralized water used as boiler feed water, coupled with bacterial colonies in the raw water that blocked membrane modules and reduced water treatment capacity by 15%.

To address these challenges, Zouping embarked on an initiative to optimize the water treatment processes. This involved the optimization of chemical agents and the expansion of water outlets. Extensive research was undertaken to identify the most effective chemical agents for wastewater treatment and alternative solutions for defluoridation systems. Key Achievements from the Optimization Include:

- Increased recovery rate of reverse osmosis (RO) systems from 70.5% to 72.5%
- Extended cleaning cycle of RO units from 10 days to 50 days
- Prolonged service life of membrane elements doubled from 4 years to 8 years
- Saved approximately 56,000 tonnes of boiler feed water
- Saved USD 120,000 in operational and maintenance costs and additional USD 370,000 in defluoridation equipment costs



WATER FLOW DIAGRAM

To support the long-term water management strategy and enhance stakeholder confidence in water usage reporting, the Company has developed a water flow diagram specifically for each business unit. This diagram maps out the entire water journey within the operations, including sources of water withdrawal, activities consuming water, and water discharge destination.

WASTE

SIGNIFICANCE & COMMITMENT

Waste management, especially hazardous waste is a significant issue for the Company due to the potential risks it poses to the environment, employee health, and the Company's reputation as well as its license to operate. Recognizing the importance of responsible waste management, the Company is committed to strict compliance with each country's laws and regulations.



Waste Management Policy

PERFORMANCE OVERVIEW

		2023	Target 2023	Target 2025
Hazardous waste to landfill (tonne)	✗	1,176	0	0
Hazardous waste directed to disposal (tonne)				
• Mining business		146	-	-
• Gas business		1,138	-	-
• Thermal Power business	✓	2.9	≤210	≤210
• Renewable power business		18	-	-
Non-hazardous waste directed to disposal intensity				
• Mining business (kg/tonne finished coal)	✗	0.186	≤0.140	-
• Gas business (tonne/MMcf)		10.379	-	-
• Thermal power business (kg/MWh)		0.026	-	-
• Renewable power business (kg/MWh)		0.019	-	-

MANAGEMENT APPROACH

The Company adheres to a waste management hierarchy which includes preventive & minimization, reuse, recycling, and recovery to lessen the environmental impacts associated with waste disposal. The Company has developed a waste management standard that aligns with international practices and complies with the laws and regulations of each country.



Management Approach



PREVENTIVE & MINIMIZATION



REUSE



RECYCLING



RECOVERY

To handle and dispose of waste, the Company partner with certified agencies that are authorized by each local government. This is to ensure that all waste management activities are executed to the highest standards with the least environmental impact. Additionally, the Company conducts waste flow analysis across the value chain to illustrate the overall waste generation, management, and monitoring. The waste data has been systematically collected. For instance, the amount of waste managed internally is measured by weighting. While the authorized waste management partners collect the volumes of waste managed externally and then report to the Company.

YEAR IN REVIEW

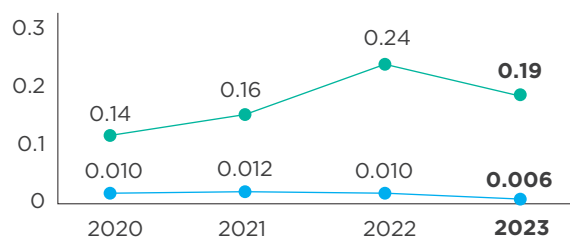
In 2023, the Company actively worked to minimize waste generation from the operations. Key initiatives included coal handling optimization project in Indonesia and the development of waste flow diagrams across value chain for operations in Vietnam.

TARGETS AND PROGRESS

The Company has set specific targets for managing both hazardous and non-hazardous wastes across all operations. The Company has committed to a zero-to-landfill goal for hazardous waste. Specifically, in mining business, hazardous waste directed to disposal intensity is set to be less than or equal to 0.01 kg/tonne coal. While hazardous waste directed to disposal of thermal power business is set at less than or equal to 210 tonnes for the period 2023-2025.

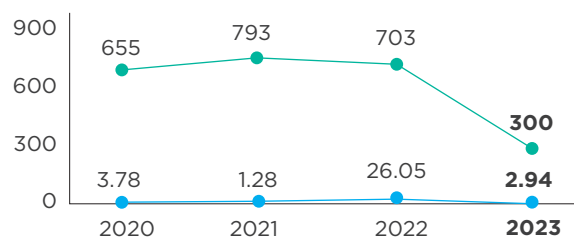
In 2023, both mining and thermal power businesses successfully achieved their hazardous waste directed to disposal targets. However, the target of non-hazardous waste directed to disposal was not met for mining business due to the disposal of mixed solid waste which was landfilled by an authorized party.

Waste Directed to Disposal Intensity (kg/tonne coal)
Mining Business



— Hazardous waste — Non-hazardous waste

Waste Directed to Disposal (tonne)
Thermal Power Business



— Hazardous waste — Non-hazardous waste

COAL HANDLING OPTIMIZATION IN INDONESIA

At Bontang Coal Terminal (BoCT) in Indonesia, coal spillage along the ship-loading process has been identified as a critical issue. This challenge not only leads to the port's cleanliness but also poses environmental risks to the surrounding community and incurs significant management costs. In response, BoCT embarked the "Reuse coal spillage project" by blending spilled coal back into the shipment.



This project kicks off with a comprehensive data collection utilizing a digital application. The execution phase ensures the careful integration of spillage coal back into the shipment process. This approach has led to a reduction of coal spillage dumping and conserved 4,386 tonnes of natural coal annually. Moreover, it has significantly reduced dust emissions and contamination in soil and water, thereby lowering community complaints. Financially, the project has delivered substantial economic advantages, generating additional coal revenue of USD 477,850 and reducing coal spillage management costs by USD 15,052 each year.

MINERAL WASTE MANAGEMENT

Mineral waste from mining, including overburden and tailings, poses significant environmental risks if not managed properly. To address this, the Company has implemented a risk assessment and waste management standard specific to mineral waste. This standard spans across operations, from pre-mining to post-mining stages to minimize and mitigate environmental impacts effectively. This proactive approach ensures the protection of soil and water quality across all our sites, safeguarding the surrounding ecosystems and communities.



Mineral Waste Management

BIODIVERSITY



SIGNIFICANCE & COMMITMENT

Recognizing the environmental challenges posed by operations like open-pit mining, the Company places a high priority on managing and mitigating impacts on ecosystems and biodiversity. The Company commits to achieving a net positive impact on biodiversity at the end of closure stage.



Biodiversity
Policy

PERFORMANCE OVERVIEW

		2023	Target 2023	Target 2025
Proportion of business units assessed for potential biodiversity impact	✓	100%	100%	100%
Proportion of business units assessed for biodiversity value*	✓	100%	100%	100%

* Only for business unit(s) currently operating and identified as having high potential for biodiversity impact

MANAGEMENT APPROACH

The Company has instituted a biodiversity policy that reflects the Company's commitment to minimizing the risk of adverse consequences on biodiversity resulting from the operations. Based on the International Union for Conservation of Nature (IUCN), the biodiversity management system has been developed, anchored in 4 strategic approaches: avoidance, minimization, rehabilitation, and offset. To proactively manage the impact on biodiversity, the Company carries out biodiversity impact assessment at the pre-operation stage for each business unit. This process includes evaluating whether 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 listed in the IUCN Red List, is also performed to ensure their protection.



Management
Approach



AVOIDANCE



MINIMIZATION



REHABILITATION



OFFSET

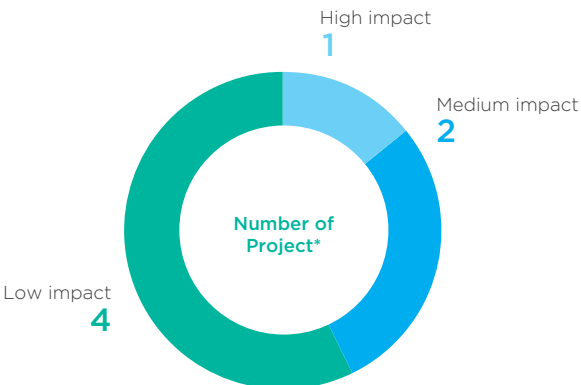
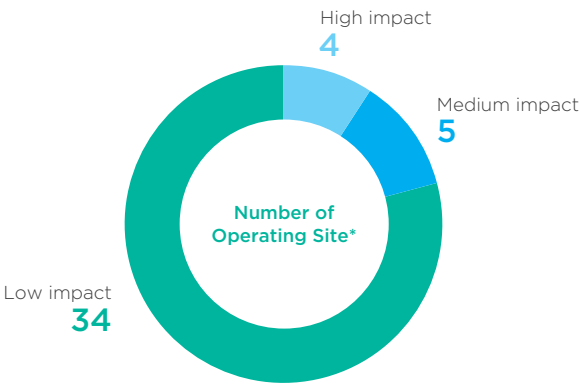
In the case where a high potential risk for biodiversity impact is identified, the Company then conducts a biodiversity value assessment aligned with the Convention on Biological Diversity (CBD) guideline. Based on these assessments, the biodiversity management plan is developed for sites identified as having a high potential impact.

YEAR IN REVIEW

In 2023, apart from an annual biodiversity impact assessment, the Company has also partnered with external agencies, for example, in Indonesia, the Company carries out an in-depth biodiversity study and plans to expand efforts to include additional plots monitoring at the Heterogenous Education Forest.

BIODIVERSITY IMPACT ASSESSMENT

The Company undertakes a biodiversity impact assessment annually across all business units. According to the assessment in 2023, 4 operating mines and 1 mining project were identified as high potential for biodiversity impact. For these identified sites, the Company has rigorously assessed their biodiversity value and developed tailored biodiversity management plans to mitigate potential impacts effectively. Additionally, the Company proactively conducted biodiversity value assessments at 3 mines in Australia despite them being categorized as low potential for biodiversity impact.

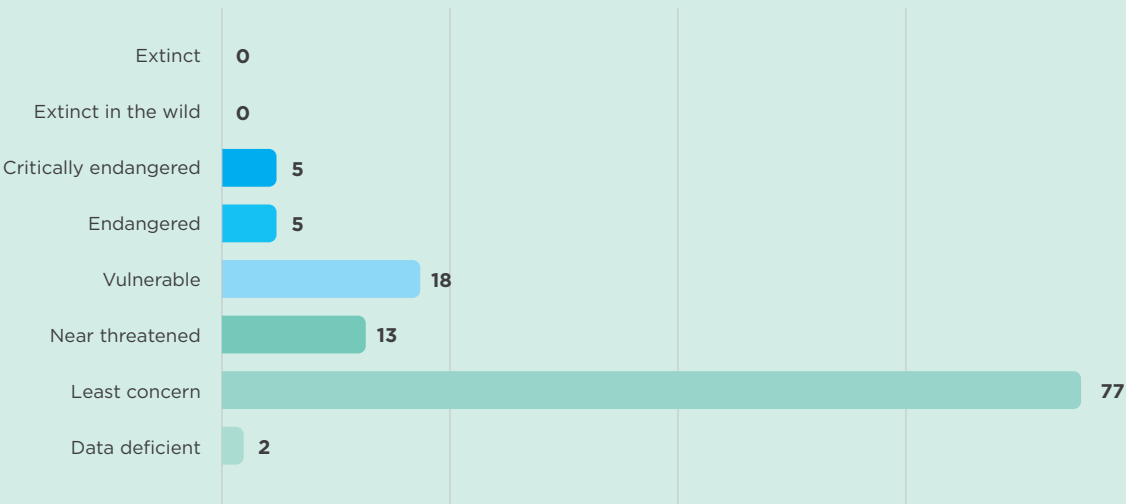


* Includes only business units with >50% share and has management control

IUCN RED LIST

The Company annually identifies the types of species that may inhabit areas surrounding the operations, alongside assessing the level of threat these species might face, with particular reference to the IUCN Red List. This information forms the foundation for crafting strategies aimed at minimizing the impact of operations on local wildlife and ecosystems.

Number of species listed in IUCN Red List



AIR EMISSIONS



SIGNIFICANCE & COMMITMENT

Air pollutants, particularly from thermal power operations, pose significant risks to human health and the environment. In response to more stringent updates in laws and regulations, the Company is committed to applying state-of-the-art air pollution control technologies across operations to ensure that business growth does not compromise the well-being of the community and society.

PERFORMANCE OVERVIEW

		2023	Target 2023	Target 2025
SO ₂ emissions intensity - Mining business (g/tonne coal)	✓	21.09	≤30.0	≤30.0
SO ₂ emissions intensity - Thermal power business (g/MWh)	✓	11.88	≤76.6	≤76.6
NO _x emissions intensity - Thermal power business (g/MWh)	✓	32.34	≤118.4	≤118.4
TSP emissions intensity - Thermal power business (g/MWh)*	✓	12.41	≤23.0	≤23.0

* 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 opting for conveyors over trucks for coal transportation, applying water spraying on roads and coal stockpiles, conducting regular maintenance on motor vehicles, and limiting vehicle speeds within mining areas. Additionally, advanced technologies are employed for route planning and water spraying systems to improve the efficiency of dust suspension. Moreover, the Company engages external parties to conduct ambient air quality monitoring in the mining areas and surrounding communities. These efforts allow the Company to measure and manage the total emissions load accurately.



Management
Approach

In the thermal power business, the Company has placed emphasis on preventing pollutants at their sources through engineering control, such as utilizing circulating fluidized beds. The facilities are equipped with state-of-the-art air quality control systems designed to capture sulfur dioxide and nitrogen oxides at the stacks, while electrostatic precipitators effectively trap dust particles. To ensure compliance with standards, continuous emission monitoring systems are installed at stacks and in surrounding communities.

YEAR IN REVIEW

In 2023, thermal power plants in China undertook significant upgrades by changing De-NO_x catalysts to ensure the flue gas quality. In Indonesia, apart from the regular monitoring of ambient air quality by external parties, the Company has implemented comprehensive water spraying plans to increase dust suppression efficiency, thereby mitigating any potential risks to adjacent communities.

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 in several ways, such as alteration of land morphology, interruptions to the hydrologic environment as well as damage to infrastructures and surrounding residences. This issue is recognized and prioritized as a top significant aspect of the Company. To address and mitigate these risks, the Company has committed to the exploration and implementation of appropriate technologies designed specifically for subsidence management.

PERFORMANCE OVERVIEW

		2023	Target 2023	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 proactively integrates subsidence management into mine planning process and involves coordination with related government agencies to ensure that all measures meet regulatory standards and best practices. Centennial, a subsidiary operating underground mines in Australia, has institutionalized the practice of conducting frequent risk assessments specifically focused on subsidence. These assessments are pivotal in predicting mine subsidence movements and then integrated with geological models to formulate the subsidence management plan to minimize possible subsidence impact. Subsidence monitoring has been undertaken over the areas identified as potential risks. The actual subsidence impacts have been compared against the pre-estimated impacts and used further to refine the subsidence model and finally improve accuracy of the predictions and the effectiveness of subsidence management plan.



Management Approach

YEAR IN REVIEW

In Australia, the approach to managing and monitoring mine subsidence associated with underground mining sophisticated blend of regulatory compliance and digital innovation. Key components of the monitoring included extraction plan, mining lease conditions, development consent conditions, and internal and external environmental audit. Among these, key highlights are Clarence subsidence management report and Mandalong LW57-60 subsidence monitoring program.

SURFACE CRACKING MANAGEMENT

Mine Subsidence represents a critical challenge in underground mining, manifesting during or post-mining operations, with the potential to damage nearby structures and residences. The Company's strategy is the implementation of proactive prevention and mitigation plans. These plans are developed based on thorough mine subsidence risk assessments and surface impact analysis. The Point Hatteras Extraction Plan is a blueprint designed to guide the mining operations with support by sophisticated modeling techniques that simulate the potential impacts. Furthermore, the Company has established a network of monitoring stations focused on tracking the width of surface cracks to prevent and halt subsidence before exceeding the maximum allowance limits.



SOCIAL

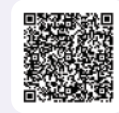
PERFORMANCE HIGHLIGHT

		2023	Target 2023	Target 2025
	Employee engagement level	78%	≥75%	≥80%
	Banpu Heart score	80%	≥75%	≥80%
	Total turnover rate	40.9%	-	-
	Proportion of high critical positions with successor identified	84%	100%	100%
	Employees with individual development plan	70%	≥96%	100%
	Occupational fatalities			
	• Employees	0	0	0
	• Contractors	1	0	0
	Lost time injury frequency rate			
	• Employees	1.56	≤2.35	≤1.99
	• Contractors	0.22	≤0.16	≤0.14
	Significant human rights incidents	0	0	0
	Significant resettlement complaints	0	0	0
	Indigenous peoples and ethnic minorities' rights violations	0	0	0
	Number of significant community complaint issues	0	0	0
	Coverage of social impact assessment	42%	≥50%	≥90%
	Proportion of mines with mine closure plan	100%	100%	100%
	Progress of mine closure activities against plan	100%	≥90%	≥90%

EMPLOYEE ENGAGEMENT

SIGNIFICANCE & COMMITMENT

Human capital is at the heart of sharpening the Company's competitive advantage. The engagement of employee directly mirrors in their work efficiency and achievements. Moreover, navigating workforce diversity presents a unique challenge since several languages, races, religions, and cultures exist. The Company believes that a robust corporate culture is key to managing these diversities effectively, strengthening employee engagement, and ultimately enhancing productivity.



Human Resources
Management Policy

PERFORMANCE OVERVIEW

		2023	Target 2023	Target 2025
Level of employee engagement	✓	78%	≥75%	≥80%
Total turnover rate		41%	-	-
Female to male remuneration ratio		0.11	-	-

MANAGEMENT APPROACH

Under the “One Banpu, One Goal” principle, the Company aspires to develop employees into professionals with a clear vision and collaborative goals. The Company is committed to providing equal opportunities to all employees, regardless of race, nationality, language, culture, or gender. To foster a sense of unity among people, the Company promotes teamwork enriched by diversity within the corporate culture “Banpu Heart” which comprises 3 core values: Passionate, Innovative, and Committed, along with 10 key behaviors.



Management
Approach

“Banpu Heart” has been integrated into all stages of the employee lifecycle, from recruitment and onboarding to development and performance evaluation. Since 2012, the Company has engaged a third party to conduct annual employee engagement and corporate culture survey. The survey is available in the local language of all countries to ensure thorough understanding and genuine feedback.

BanpuHeart
Passionate
Innovative
Committed

YEAR IN REVIEW

In 2023, with portfolio diversification in mind, the Company redesigned its activities to foster a sense of ownership and encourage the diverse, multinational, and multigenerational workforce to engage a unique initiatives like “Transcend Your Limit” and “The Stories of Banpu People: Voice of Dedication”. Despite these efforts, the annual employee engagement survey revealed a slight decrease to 78% from the previous year. This feedback will guide the next steps in strengthening corporate culture.

BANPU HEART ACTIVITIES

In 2023, the Company organized several activities to instill the 10 key behaviors of Banpu Heart and harmonize personal values with the business objectives. These activities are designed to enable employees to embody organizational culture and apply work values with flexibility and unity. Key initiatives are as follows:

- **Banpu Change Leaders (BCLs) reinforcement:** Elevating the network of BCLs, who are committed to cultivating corporate culture into a global ecosystem to foster broader cultural integration
- **Country-specific Banpu Heart activities:** Tailored to resonate with local cultures



Banpu Heart and Local Community Activity in China



Banpu Heart Sports Club in Indonesia

- **Transcend Your Limit:** Grounded in the belief that “every employee has unlimited capabilities”, this initiative challenges individuals to push beyond their limits. This activity emphasizes a call to action for employees to embrace new experiences and learn from every outcome, including failure.
- **The Stories of Banpu People: Voice of Dedication:** A documentary series showcasing the life, work, and experiences of employees across the group. This film endeavors to highlight how diverse stories connect with “10 behaviors of Banpu Heart”.



HUMAN RESOURCES MANAGEMENT POLICY

The Company has updated its Human Resource Management Policy to ensure alignment with the evolving business environment 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 processes. Additionally, the grievance mechanism for addressing any incidents of discrimination or harassment has been developed and communicated to all employees.

EMPLOYEE HEALTH AND WELL-BEING PROGRAMS

The Company places an importance on employee health and well-being in every country where it operates, aiming to foster a positive and fulfilling work environment. Key initiatives & activities are as follows:



Life @Banpu

- **Work anywhere and flexible time policy:** Empowering employees with control over their schedules and work styles.
- **Flexible benefits:** Offering a range of benefits to support employees' lifestyles, including expenses related to family, relaxation, and quality of life enhancements
- **Maternity and paternity support:** Extending maternity leave up to 98 days and paternity leave to 5 days with full pay, plus additional support like cash gifts for childbirth and breast-feeding facilities
- **Career path sessions:** Providing guidance on career development to align individual aspirations with organizational goals
- **Fitness program:** Providing fitness facilities and exercise classes, both online and on-site, for employees to strengthen their health
- **Massage services:** Providing office syndrome massage services by visually impaired individuals (supporting hiring of disabilities under the Supporting and Developing the Quality of Disabilities' Life Act)
- **"Boost me up":** Series addressing comprehensive well-being through sessions on various aspects such as mindfulness, health, financial literacy, and social contribution
- **Additional health benefits:** Offering flu vaccinations, psychiatric services for mental health consultations, online medical consultations, and on-site physical therapy & dental services

Besides, the subsidiaries in each country also provide various activities to support health and well-being in their local context. Examples include:

- **Mongolia:** Maternity leave extends to 120 days, with 60 days pre-birth and 60 days post-birth (140 days for twins)
- **Japan:** Offering 98 days of maternity leave and 28 days of paternity leave
- **China:** Promoting physical activities such as badminton and football clubs
- **Australia:** Providing employee assistance program service for all employees
- **The U.S.:** Supporting breast-feeding facilities and allowing PTO (Paid Time Off) donations for their colleagues dealing with medical emergencies for up to 12 weeks of paid leave



PERFORMANCE MANAGEMENT SYSTEM

The Company's performance management system integrates "Management by Objectives" through a balanced blend of work-related and behavior-based KPIs with a "Multidimensional Performance Appraisal" approach, inviting 360-degree feedback on work-related behaviors. In 2023, the Company applied "Team-based Performance Appraisal", featuring a calibration process across the organization. Moreover, "Agile Conversations" are applied through mentoring programs with executives outside direct supervision.

Management by objectives	The Company's performance management system consists of two sets of KPIs: work-related KPIs, which account for 70%, and behavior-based KPIs, which account for 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.
Multidimensional performance appraisal	The Company provides a 360-degree feedback process where colleagues, subordinates, and direct supervisors can evaluate work-related behaviors. The outcomes gained from these evaluations are utilized to provide opportunities for enhancing knowledge and skills.
Team-based performance appraisal	The Company has adopted a "Calibration" process across the organization. This approach is designed to ensure that performance outcomes are accurately aligned with the goals of respective departments and contribute to the broader organizational strategy.
Agile conversations	The Company encourages employees to have a discussion session with their supervisors at least twice annually to share opinions about performance, goals, and self-development strategies. In 2023, the mentoring program was introduced to facilitate as additional communication channels for self-development. This initiative involves discussions with senior executives, who are not their direct supervisors, to gain diverse perspectives and enrich their professional growth through experience, knowledge, and skills enhancement.

HR TECHNOLOGY TRANSFORMATION STRATEGY

Recognizing the importance of technology in enhancing human resource management, the Company has embarked on a technology transformation journey, guided by the 3E2A strategy: Ecosystem, Employee Experience, Empowering, Automation, and Analytics. This approach addresses challenges like data collection and integration across countries.



In 2023, the Company launched the BuddyUp system in Thailand to enhance engagement and facilitate daily work life. Features include automated flexible benefit claims, digital ID, and digital name cards. It also serves as a central hub for accessing various organization's systems. Additionally, a FriendChip activity scoring system allows employees to earn rewards for activity participation.

HUMAN CAPITAL DEVELOPMENT



SIGNIFICANCE & COMMITMENT

Employee is the Company's most valuable asset. Attracting and retaining talents through human capital development plans is thus a cornerstone of the Company's strategy, enhancing the Company's competitive advantage along with the propulsion of business amid a complicated and fast-paced business environment.

PERFORMANCE OVERVIEW

		2023	Target 2023	Target 2025
Proportion of high critical positions with successor identified	✗	84%	100%	100%
Proportion of employees with individual development plan	✗	70%	≥96%	100%
Proportion of open positions filled by internal candidates		25%	-	-

MANAGEMENT APPROACH

The human capital development plan has been formulated based on the competency gaps along with the Company's long-term strategies. Specific training roadmaps for each job level and job function have been identified and reviewed annually. The individual development plans are tailored for each employee by considering the required competencies of such positions and personal competency profile, covering both technical and leadership skills.



Management
Approach

The "Banpu Global Leadership Program" exemplifies commitment to nurturing a new generation of leaders across 3 levels: Business leader, First line leader, and Future leader. This program is designed to foster diversity, inclusion, and cross-functional networking, laying the foundation for international cooperation and collaboration. To evaluate the return on employee development investment, the Company is adopting international best practices and standardized evaluation methodologies, like the Kirkpatrick model.

YEAR IN REVIEW

Throughout 2023, the Company achieved significant milestones in cultivating a culture of lifelong learning, enhancing leadership capabilities, and fostering a global community across diverse geographical locations. This was underscored by the establishment of 3 campuses in Australia, Indonesia, and Vietnam, serving as hubs for knowledge sharing and professional development. Furthermore, the Company sustained a coaching culture through the "Engaging Leader Program", "Great Coach", and "HiCoach".

Additionally, the Company has rolled out several programs and activities to enrich our leadership landscape as following examples:

- International Business Leadership Program (IBLP): Program that united new generation of executives, promoting knowledge exchange and the cultivating essential skills across business units
- Leadership Weekend: Program tailored for senior executives focusing on visualization of the Company's strategy and direction encompassing business operations
- Unbox Idea: An innovative space encouraging employees to explore and experiment with digital product ideas, supported by advice from internal experts

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:

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

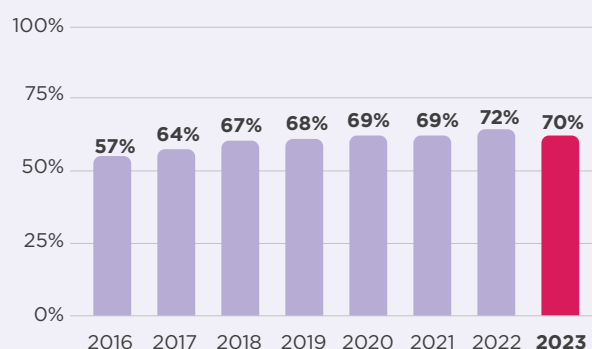


Participants	745 employees
Coverage	13% of FTEs
Project duration	14 years (2010-Current)
Business benefits	<ul style="list-style-type: none"> • Readiness of potential successor for critical positions • Effectiveness of succession planning and high potential management
Outcome & Impact	<ul style="list-style-type: none"> • 100% of critical positions are internally filled by participants of the program. • 85% of high-potential candidates are developing their capability in the program.

BANPU ENGAGING LEADER PROGRAM

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 ongoing program throughout 9 years, the employee engagement level at the head office in Thailand has significantly increased from 57% in 2016 to 70% in 2023. 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.

Level of employee engagement



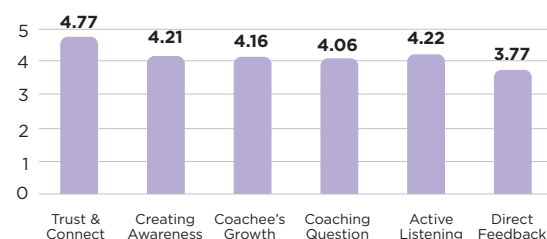
Participants	263 employees
Coverage	4.6% of FTEs
Project duration	9 years (2015-Current)
Business benefits	Enhance employee engagement level
Outcome & Impact	Level of employee engagement increased from 57% to 70%

HICOACH



HiCoach is a part of Banpu Engaging Leader Program, organized for the 5th 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, the objective of HiCoach is to strengthen coaching skills through real practice. HiCoach is arranged as a cross-functional program in which coachees are employees from different functions to ensure his or her full benefit. In addition, there are also external experts who are professional coaches certified by International Coaching Federation (ICF), serving as mentors throughout the program. In 2023, there were coaches and coachees from Thailand, Singapore, Vietnam, China, Indonesia, and Mongolia. 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



Participants	96 coaches and 99 coachees
Coverage	3.4% of FTEs
Project duration	5 years (2019-Current)
Business benefits	<ul style="list-style-type: none"> Promote coaching culture Developing coaching skills among supervisors Promote cross-functional working
Outcome & Impact	<ul style="list-style-type: none"> Increased level of coaching skills Increased level of trust across functions

TALKFEST

In pursuit of cultivating a learning-oriented community and fostering a culture of knowledge exchange, the Company has established “TalkFest” as a dedicated platform for promoting intellectual collaboration among experts from diverse fields, both within and outside the organization. Recognizing the abundance of knowledge available, TalkFest covers a spectrum of topics ranging from practical matters like “Preparing for old age,” “PDPA” and “M&A” to thematic series like “CVC Series” and “Decarbonization Series”.

Moreover, TalkFest regularly hosts speakers representing various domains, including academic institutions, specialists, entrepreneurs, and management professionals. These experts are invited to share their valuable insights, contributing to the enrichment of knowledge-based community. With internal moderators, the conversations were ensured that the discussions align with the Company’s values and objectives.



INTERNATIONAL BUSINESS LEADER PROGRAM (IBLP)



With a mission to cultivate a next generation of leaders, ready to propel business growth, the Company launched “International Business Leader Program” (IBLP) for the first time in 2023. More than 30 executives from Australia, Indonesia, Japan, Thailand, and the U.S. participated in this program.

The IBLP is a program focusing on strengthening soft skills essential for leadership, such as coaching and mentoring. Alongside leadership development, the program emphasizes learning from real business cases, drawing lessons from the Company’s historical challenges and achievements. This approach ensures that the learning is deeply rooted in practical experiences and directly relevant to our business context. Significantly, the program has seen active involvement from the Board of Directors and senior executives, who have generously shared their insights and guidance.

Apart from equipping a new generation of leaders with the skills and insights necessary to navigate the complexities of the global business landscape, IBLP has been a catalyst for numerous tangible business impacts. Among these advantages are:

- Revising the roles and practices of the Board of Directors to align with contemporary governance best practices
- Crafting strategies for Banpu NEXT, the flagship company in the energy technology sector
- Developing new business models for the renewable power business
- Generating innovative business ideas to drive future growth and diversification



4

Forums

to develop leaderships and functional skills

7

Case studies

of real business case within organization

4

Experiential projects

on current business context with industry experts

5-7

Individual coaching sessions

for each participant with senior coach to help developing personal development plan



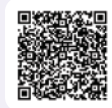
Participants	31 employees
Coverage	0.54% of FTEs
Project duration	9 months
Business benefits	<ul style="list-style-type: none"> • Capability and readiness of next generation leaders • Strategy and business plan
Outcome & Impact	88% of participants rated the forums with very high value for their personal development.

OCCUPATIONAL HEALTH & SAFETY



SIGNIFICANCE & COMMITMENT

The importance of robust Occupational Health and Safety (OHS) management cannot be overstated, as failures in this area can have severe consequences not only on the health and well-being of employees and their families but also on the Company's reputation. In recognition of these potential risks, the Company is deeply committed to creating a work environment where the safety of all employees, including those who work for us, is paramount.



OHS Policy

PERFORMANCE OVERVIEW

		2023	Target 2023	Target 2025
Number of fatalities				
• Employees	✓	0	0	0
• Contractors	✗	1	0	0
Lost time injury frequency rate				
• Employees	✓	1.56	≤2.55	≤1.99
• Contractors	✗	0.22	≤0.16	≤0.14

MANAGEMENT APPROACH

The Company has established an occupational health and safety department, responsible for ensuring that safety protocols are rigorously followed across all business units, 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. Central to our approach is the cultivation of a robust safety culture that focuses on 3 key areas: Strengthening safety management system, Enhancing safety competency, and Promoting safety awareness. This culture is foundational to the Company's OHS Policy, which sets forth ambitious "3 Zeroes" targets - Zero Incident, Zero Repeat, and Zero Compromise.

Management
Approach

YEAR IN REVIEW

In 2023, the Company took significant steps across business units to reinforce a safe working environment and foster a strong safety culture within the organization. The key initiatives included:

- China: Implementation of safety training courses for specific hazards
- Indonesia: Organization of engineering improvements focused on machine safety
- Australia: Launch of the Fatal Risk program, which focuses on the prevention of fatalities by implementing stringent controls
- Thailand: Expansion of the safety culture maturity level assessment to the energy technology business

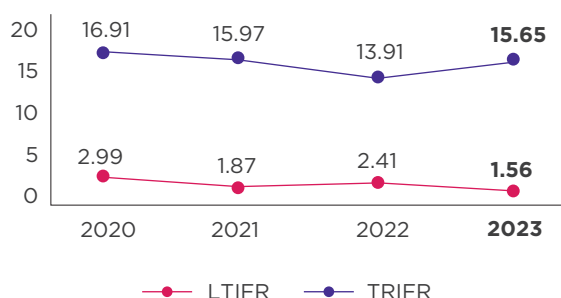
Despite these proactive measures, one fatal accident occurred involving a contractor who died after using an unauthorized vehicle on a hauling road, which is considered a dangerous area. In response, the Company has established several additional prevention and mitigation measures, including improving the hauling road, providing company-approved vehicles for all workers in mining areas, and strengthening safety rules and regulations specifically regarding vehicle use in mining areas.

TARGETS AND PROGRESS

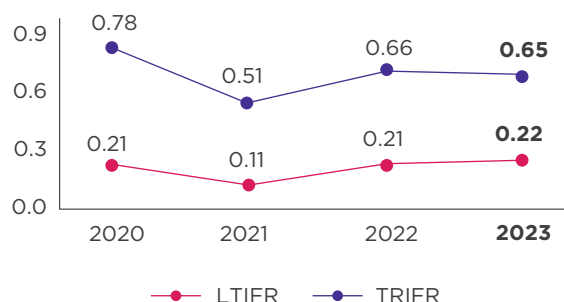
The Lost Time Injury Frequency Rate (LTIFR) of employees was 1.56, meeting the targets, whereas the rate for contractors was 0.22, which did not meet the set goals. For the Total Recordable Injury Frequency Rate (TRIFR), employees and contractors recorded rates of 15.65 and 0.65, respectively, indicating that neither group achieved the targets.

Upon analyzing the types of injuries sustained, it was noted that employees predominantly suffered from muscle and ligament injuries, injuries from impact, and open wounds. While contractors, on the other hand, most experienced injuries from impact, graze or open wounds, and muscle and ligament injuries. Further analysis into the causes of injuries revealed that most of the causes of injuries are tripping, slipping, falling, being pinched, or pulled by objects, and overexertion.

Safety records (person/million man-hour)
Employees



Safety records (person/million man-hour)
Contractors

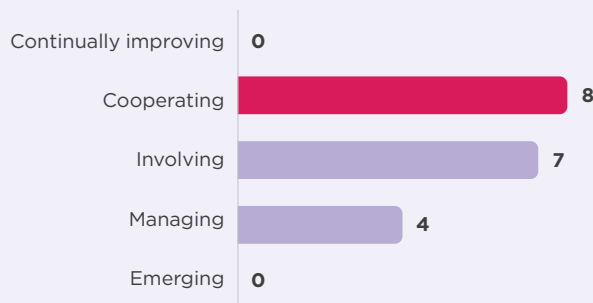


SAFETY CULTURE MATURITY LEVEL ASSESSMENT

Since 2018, the Company has continuously assessed the safety culture maturity level across operational sites. The assessment outcomes are utilized as part of the Company's efforts to enhance safety culture in the working environment. In 2023, the assessments were carried out at 1 solar power plant in China and 4 sites of energy management business in Thailand. Additionally, 2 thermal power plants in China underwent re-assessments. Overall, the number of operations assessed increased to 19 across 4 countries. The Company commits to expanding the assessment coverage as well as raising the maturity level to maintain a high standard of safety awareness and prevent potential incidents.



Number of Operating Sites - by Maturity Level

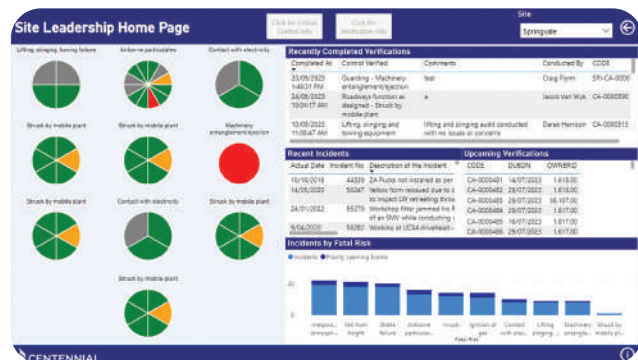


* Includes only business units with >50% share and has management control

CRITICAL CONTROL VERIFICATION DASHBOARDS IN AUSTRALIA

In 2023, the mining business in Australia adopted the “Fatal Risk” program, which is an initiative designed to prevent fatalities by implementing effective controls across all tasks. A key component of this program involved the “Fatal Risk Bowtie” workshops, where all critical controls were identified and evaluated for their application and effectiveness.

To facilitate the effective implementation of these controls, the Company developed “Critical Control Verification Dashboards”. These dashboards help to ensure performance effectiveness by providing real-time feedback via a digital platform. The digital reporting provides a clear view of control effectiveness and status at each site. This enables prompt identification of any controls that are failing or not functioning to the standard. As a result, the Company can identify and control the top ten fatal risks. This proactive approach not only enhances safety but also contributes to the overall operational excellence of the facilities.



Budget

USD 200,000

Business benefits

Safe, efficient, and reliable operations

SROI

1 : 3.75

MANAGERIAL SAFETY VISIT IN THAILAND

The managerial safety visit program, implemented by Banpu NEXT EcoServe in Thailand, exemplifies the Company's commitment to fostering a strong safety culture. Recognizing the importance of staying informed and actively engaged, the program facilitates informal discussions between senior leaders and frontline personnel, directly addressing safety concerns that impact daily operations.

By actively participating in these visits, senior leaders demonstrate their commitment, share learning, and engage in meaningful discussions targeted at raising safety standards in the work area. These visits also focus on crucial aspects like hazard reporting and providing relevant training to frontline staff.

In 2023, the senior leaders conducted safety visits at 3 sites. These visits allowed them to hear firsthand from those who work on the sites. This program is aiming to expand to cover all sites.





SAFETY TRAINING FOR SPECIFIC HAZARDS

Recognizing the critical importance of addressing workplace hazards, the Company has dedicated substantial efforts towards strengthening the safety program by conducting comprehensive training courses.

In 2023, each business unit across countries tailored its safety training to address the specific hazards inherent to its operations. For example, roles within power generation, transmission, and distribution are recognized for their higher risk levels in electric shock and falls. In response, a solar power plant in Vietnam, 3 thermal power plants in China, and Banpu NEXT in Thailand conducted First Aid and CPR training to ensure that all employees possess at least a basic knowledge and skills to handle emergencies effectively.

Additionally, solar power plants in China and Banpu NEXT also provided specialized training for working at height, which is critical for photovoltaic panel installation and maintenance staff. This training emphasizes the correct usage of personal fall protection equipment and safe work practices at height.

MY SAFETY MY RESPONSIBILITY CAMPAIGN IN CHINA

In 2023, the Zhouping power plant in China initiated “My Safety My Responsibility” campaign as part of the Behavior-Based Safety (BBS) program. This initiative emphasizes employee involvement at all levels in fostering a safety culture. One of BBS processes is safety observation, where employee behaviors are monitored and documented using safety observation report forms. The opportunities for improvement were specifically identified.

Over the course of the year, the effectiveness of BBS program was measured through the collection and analysis of these observation reports. The number of observation reports submitted surged to 320, marking an increase of over 100% from the 142 reports filed the previous year. Celebrating successes with recognition and rewards, a power plant executed various motivational awards, including Good unsafe behavior report, Monthly safety inspection talent, Annual safety inspection talent, and Safety outstanding team.

“

Working at Banpu is very safe and my family is also very comfortable with me working here. The behavior-based safety program supports safety awareness transformation from “You require me safety” to “I require safety”. It can transform our workplace into a safer and more proactive environment.

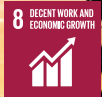
”

Mr. Qu Haibin

Mechanical and Chemical Shift Supervisor, Zouping Power Plant



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.



Human Rights
Policy

PERFORMANCE OVERVIEW

		2023	Target 2023	Target 2025
Coverage of business units assessed for human rights risks*	✓	77%	≥70%	100%
Number of significant human rights incidents	✓	0	0	0

* Assessment conducted at least once in every 3 years

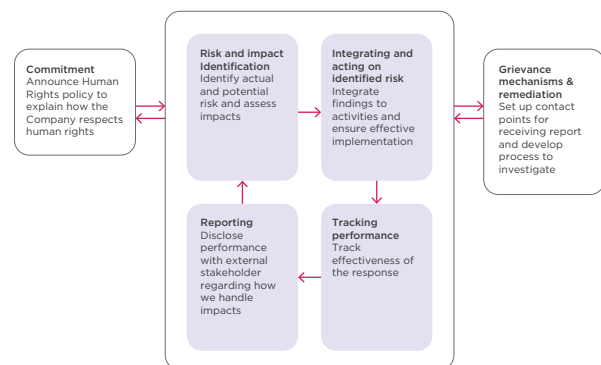
MANAGEMENT APPROACH

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.

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



Management
Approach



YEAR IN REVIEW

In 2023, the Company conducted a comprehensive human rights risk and impact assessment. The assessment focused on the renewable power business in Vietnam and a joint-ventured in thermal power business in Thailand. The findings from this assessment revealed that most identified human rights issues posed low to medium risks. However, there were 6 issues identified as high-impact risks. Recognizing the seriousness of these findings, the Company has proactively developed and implemented mitigation plans to minimize the potential adverse impact. Furthermore, Banpu Australia, a subsidiary in Australia, announced its third Modern Slavery Statement in 2023. As part of this statement, Banpu Australia commits to recognize the risk of modern slavery occurring both directly and indirectly across its supply chain. Banpu Australia has conducted risk assessments for its local and international suppliers. The outcomes indicate that the risks of modern slavery violations within the supply chain were low.



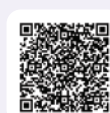
HUMAN RIGHTS RISK AND IMPACT ASSESSMENT IN VIETNAM

In 2023, as part of a human rights due diligence process, the Company conducted a human rights risk and impact assessment for a renewable power business in Vietnam. The assessment involved a thorough data collection, including interviews with various rights holders, comprising employees, contractors, subcontractors, security guards, and local communities, as well as vulnerable groups, such as women and pregnant women. The findings from the assessment revealed that, with current control measures, most human rights issues posed low to medium risks. However, there were 6 high-impact risks that require focused attention. These areas included working conditions & equal remuneration, labor recruitment, forced labor, occupational health & safety in workplace, violence or harassment, and internal grievance mechanisms.

HUMAN RIGHTS	HUMAN RIGHTS ISSUE	RIGHTS HOLDER	MITIGATION PLAN
Labor rights	Working condition & equal remuneration	Contractors and subcontractors	<ul style="list-style-type: none"> Communicate the supplier code of conduct to contractors Organize training and publish the corporate governance & business code of conduct handbook and related policies, such as the human rights policy, non-discrimination and anti-harassment policy, and compensation policy Incorporate ESG criteria into supplier selection
	Labor recruitment		
	Forced Labor		
	Occupational health & safety		
Employee discrimination	Violence or harassment	Employees	<ul style="list-style-type: none"> Communicate to employees about non-discrimination and anti-harassment via E-learning Communicate complaint channels to employees Organize training on human rights to employees via E-learning
Grievance mechanism & access to remedy	Internal grievance mechanisms	Employees	<ul style="list-style-type: none"> Communicate complaint channels to employees Organize training on human rights for employees via E-learning

HUMAN RIGHTS DUE DILIGENCE

Adhering to the principles of UNGP, the Company had developed a human rights due diligence manual. This manual outlines a structured approach consisting of scope identification, issues and stakeholders' identification, risk and impact identification, mitigation of impacts to an acceptable level, remediation, monitoring and reporting as well as grievance mechanisms. In order to identify human rights related issues, the Company considers not just the general issues specified in UNGP principles but also the specific risks of each business and each local operation.



Human Rights Due Diligence Manual

Example of Human Rights Issues Related to Power Business



LABOR RIGHTS

- Labor recruitment
- Working conditions
- Child labor
- Forced labor and human trafficking
- Discrimination
- Freedom of association and collective bargaining



RIGHTS TO COMPLAINT

- Internal and external grievance mechanism



ACCESS NATURAL RESOURCES AND ENVIRONMENT

- Pollution (water, air, and noise)
- Health and safety



LAND ACQUISITION AND RESETTLEMENT

- Usage of land
- Resettlement

COMMUNITY ENGAGEMENT



SIGNIFICANCE & COMMITMENT

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



PERFORMANCE OVERVIEW

		2023	Target 2023	Target 2025
Number of significant community complaint issues	✓	0	0	0
Proportion of business units with social impact assessment				
• Operational sites	✗	42%	≥50%	≥90%
• Projects	✓	100%	≥50%	≥90%
Proportion of business units with community perception surveys				
• Operational sites	✗	23%	≥35%	≥80%
• Projects	✗	0%	≥35%	≥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 findings of these assessments are shared with the local community to ensure involvement from the early stages. Moreover, stakeholder analysis and social mapping are conducted during both the pre-operation and operational stages to better address community needs.



To facilitate meaningful dialogue, 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 are not only informed but actively engaged and all development programs genuinely benefit the communities. In practice, the community engagement approach in each country varies according to local business characteristics and community contexts.

YEAR IN REVIEW

In 2023, the Company was proactive in facilitating community dialogue through 27 CCC meetings in Indonesia and 21 mining group-level subcommittee meetings in Australia. There were no new community complaints in 2023, and all pending issues from 2022 were completely resolved, including noise concerns in Australia and oil leakage in Vietnam. Furthermore, the community perception surveys were conducted in Indonesia and Australia. For Indonesia, the survey indicated low satisfaction levels, particularly concerns about economic conditions and quality of life in the post-closure period. Therefore, the Company integrates this feedback into the community engagement strategy to ensure community sustainability. In Australia, the improvement strategies were reviewed to maintain a "Satisfactory" level of community perception.

SOCIAL RETURN ON INVESTMENT

To measure the impact of community engagement efforts, the Company employed the Social Return on Investment (SROI) framework, covering 6 community development programs across 5 mine sites. Furthermore, the Company also applied “Maturity Measurement” to evaluate the sustainability of community engagement programs across 6 dimensions: change, inclusion, organization, cooperation, influence, and sustainability. This comprehensive approach has reached 100% of the mines in Indonesia.

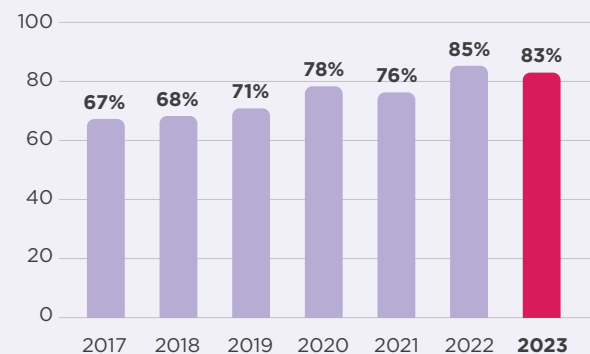
Example of SROI in community development programs

YEAR	PROGRAM	COUNTRY	SROI
2023	Sasirangan eco-print program	Indonesia	1 : 2.05
2023	Industry-standard welding training program	Indonesia	1 : 3.40
2022	Organic fertilizer development program	Indonesia	1 : 2.67
2021	Electricity for community health center	Indonesia	1 : 1.17
2021	Community waste bank and digitalization	Indonesia	1 : 0.95

STAKEHOLDER SATISFACTION SURVEY

In Indonesia, the community satisfaction surveys were conducted at 13 community development programs across 5 mines. The surveys revealed an average satisfaction rating of 83%. This high level of satisfaction underscores the effectiveness of the community engagement and development initiatives, reflecting a solid alignment with the needs and expectations of the local communities we partner with.

Average Stakeholder Satisfaction Level



NOISE COMPLAINT MANAGEMENT IN AUSTRALIA

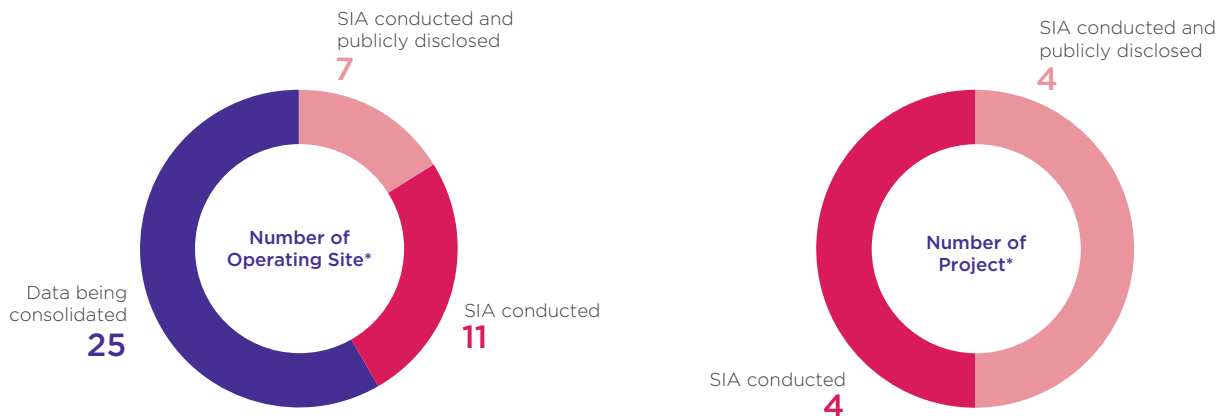
In 2020, Mandalong mine in Australia expanded its infrastructure by constructing the “Mandalong South Surface Site”, which included ventilation fans for future mining operations. Following community feedback regarding noise disturbance caused by these fans, Mandalong implemented a management standard that included communication with complainants, consultation with the community consultative committee, and formal reporting of the issue to state authorities.

Acting on stakeholder input, Mandalong decided to modify the fan structures to reduce noise. The modifications were completed in October 2023 and resulted in a significant decrease in noise emissions. Presently, there has been no further complaints regarding this issue.



SOCIAL IMPACT ASSESSMENT

From the onset of project development, a Social Impact Assessment (SIA) is conducted across all business units. This ensures a thorough understanding of the potential social consequences of the projects. If any significant changes occur during project implementation, it is mandatory to conduct a review of the SIA to capture and address these developments. After the review, the updated assessment reports are promptly communicated to all concerned stakeholders, ensuring transparency and facilitating informed collaboration throughout the project life cycle. This process is crucial for adapting to changes effectively and maintaining stakeholder engagement.



RESETTLEMENT MANAGEMENT

The Company's resettlement management standard is developed in line with international guidelines such as the International Finance Corporation (IFC) and the International Council on Mining & Metals (ICMM). Central to the approach is the principle that unnecessary resettlement should be avoided due to its adverse effects on the quality of life of impacted communities. However, in scenarios where resettlement is unavoidable, the Company adheres to a strict protocol comprising 6 key measures designed to mitigate potential impacts: Mutual agreement setting, Strategy formulation, Expert consultation, Stakeholder consultation, Resettlement planning, and Monitoring & evaluation.



In cases of involuntary resettlement, the Company is committed to managing the process responsibly by exploring project alternatives, aiming to improve or at least restore the livelihoods and living standards of affected communities, especially vulnerable groups. This commitment is upheld through consultation, fair compensation, targeted assistance, and stringent monitoring of time-bound resettlement activities.

WOMEN EMPOWERMENT IN INDONESIA

Since its establishment in 2019, Jorong Mine's Sasirangan eco-print program in Indonesia has been a beacon of women's empowerment and sustainable development. The program is operated in partnership with the community consultative committee and involves 2 women groups that manage the activities. These groups have significantly enhanced their capabilities through knowledge sharing and technical skill training, focusing on creating eco-friendly products.

Sasirangan's product line uniquely incorporates eco-print techniques using eucalyptus leaves from Jorong's reclamation areas. In 2023, the initiative expanded its product range to include eco-print coloring material and became a local government partner in Kondang's market, a significant step in increasing the program's reach and impact.

Location	Indonesia
Project duration	5 years (2019-Current)
SROI	1 : 2.05



INDIGENOUS PEOPLES MANAGEMENT

The Company has established an indigenous peoples' engagement guideline, which is implemented across all business units. This process begins with a preliminary assessment conducted by each business unit to determine the presence of indigenous communities in the surrounding areas. When operations are adjacent to indigenous populations, the Company undertakes comprehensive data collection to gain a deep understanding of these communities, focusing on substantial characteristics such as culture, belief, and religion.



Indigenous Peoples



In addition to understanding these communities, a cultural heritage management plan is developed for each specific site to ensure that the cultural heritage of the indigenous peoples is respected and preserved as well as to avoid any risk of violating their rights.

To further promote reconciliation and positive engagement, the Company has established the Community Consultative Committee (CCC). This committee plays a crucial role in empowering local communities, including indigenous representatives. The CCC aims to improve local well-being, increase employment opportunities, support local procurement, provide workforce training, and uplift quality of life improvement through shared value initiatives.

COMMUNITY CAPABILITY DEVELOPMENT IN INDONESIA

Indominco mine in Indonesia has proactively addressed the anticipated strong demand for local labor driven by a new capital establishment in the region. In partnership with the Bontang Welder Association and its contractors, Indominco launched an “Industry-Standard Welding Training Program.” Since 2019, 47 trainees have successfully completed this program, with an impressive 75% employment rate post-training, while 24 of these individuals are now working as contractors for Indominco.

In 2023, Indominco collaborated with partners to enhance the training curriculum and conduct trainee selection process. The effort culminated in the selection of 22 participants from 11 villages, including 5 women, who are currently progressing through the training pipeline. This initiative not only equips participants with essential skills but also fosters gender diversity in traditionally male-dominated fields. Further enhancing the program's impact, Indominco aims to form a welder alumni association to facilitate knowledge sharing among graduates and support sustainability of the program.



Location	Indonesia
Beneficiary	47 local people
Business benefits	24 employees from local people
Project duration	5 years (2019-Current)
SROI	1 : 3.40

INCOME GENERATION PROGRAM IN CHINA

BIC, a subsidiary of the Company operating 7 solar power plants in China, focuses on improving community relations and enhancing quality of life, particularly for middle-aged and elderly individuals, by creating employment opportunities.

In 2023, BIC launched an income generation program at Jixin Solar Farm. This initiative successfully provided 32 beneficiaries with not only higher income opportunities but also comprehensive safety training and increased environmental awareness. The program is designed to comply with stringent environmental regulations, ensuring that the operations adhere to both local and national environmental standards.



Location	China
Beneficiary	32 local people
Project duration	1 year (2023-Current)



“ During the off-peak season, my neighbors and I worked at the Ji Xin Solar Power Plant, enhancing our living standards. We participated in community events and were trained by workers who showed care and respect. The plant has a strong reputation in our area, and I trust BIC and the plant to be trustworthy partners, as do other local residents. ”

Ms. Hou Cheng Mei
Villager of Zheng Wei Village

COMMUNITY ENGAGEMENT IN THE U.S.

BKV, the Company’s subsidiary in the U.S., is committed to being a positive force within society. BKV prioritizes maintaining open and honest relationships with stakeholders and is deeply committed to being engaged with the community.

In 2023, BKV launched the first “BKV First Responder Grant Program”. This initiative is designed to establish partnerships with local first responders by providing them with financial support to enhance their services. The program started with a “First Responder Lunch and Learn” event, where BKV began discussions on safety, operations, and partnership opportunities.

First Responders in the operational areas in Texas and Northeastern Pennsylvania were invited to participate by submitting a simple one-page grant application. The community relations committee then reviewed all applications and ultimately awarded a total of 8 grants in the amount of over USD 30,000.



Location	The U.S.
Beneficiary	8 local first responders
Project duration	1 year (2023-Current)



“ As fire departments are in fierce competition with all the other city departments for funding, grants, and community organization support are crucial in helping us acquire necessary equipment. The gracious First Responder grant from BKV will go toward obtaining a vital EMS training prop helping ensure our staff remains proficient in our lifesaving EMS skills. ”

Doug Spears
Fire Chief Saginaw Fire Department

AGRO-EDU-TOURISM AT EMBALUT

In 2023, Embalut mine in Indonesia actively supported 14 community development projects. The focus of these initiatives is on agro-edu-tourism, aimed at enhancing the livelihood and well-being of the local population. The projects included the development of fruit gardens, cattle sheds, agricultural tourism attractions, fishing ponds, and fishing points.



“ The Kerta Buana Village Government expresses gratitude to Embalut for its successful distribution of community development programs, which have benefited residents in human resource development and community empowerment. The government also acknowledges Embalut’s continued implementation of these programs even after the closure of the mine. ”

I Dewa Ketut Adi Basuki
Head of Kerta Buana Village



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 a mine closure plan since the beginning of the project and carries on throughout the asset life to anticipate potential environmental impacts, including impacts on local communities and their livelihoods. This ensures the Company's commitment to responsible mining practices with the acceptance from related stakeholders.

PERFORMANCE OVERVIEW

		2023	Target 2023	Target 2025
Proportion of mines with mine closure plan	✓	100%	100%	100%
Progress of revegetation against plan ^(a)	✓	114%	≥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 commitment to responsible mining and sustainable practices is evident in its rigorous mine closure standard, aligned with the International Council on Mining & Metals (ICMM) guideline and applied across business units. With an aim to minimize environmental and social impacts during and after the operational phase, the standard encompasses comprehensive measures, including land stabilization, waste management, water management, mine rehabilitation and biodiversity management. For each site, the environmental impact assessment (EIA) is performed and is foundational in developing the mine closure plans.



Management
Approach

In parallel, a social impact assessment (SIA) is conducted prior to the commencement of the project. This assessment is critical for understanding the potential social impacts on local communities and for crafting activities that meet community needs and avoid negative impacts. In addition, if there are significant changes to the project specifications, a new SIA is scheduled to ensure that community interests remain protected and aligned with the evolving scope of activities. The Company's mine closure is aimed at ensuring that surrounding communities can continue their sustainable ecosystem and livelihoods long after mine operations have ceased. Throughout the mine closure process, the Company closely monitors the progress associated with the mine closure plan both in environmental and social dimensions. Progress reports are regularly updated to the mine closure committee on a quarterly basis.

YEAR IN REVIEW

In Indonesia, Embalut mine entered the closure stage in 2022 after 14 years of operations. In 2023, Embalut strived to support 14 community development projects that directly benefited 3,793 individuals. These projects, spanning across income generation, health, and social & cultural development, were derived from the community needs and aim to improve the livelihood and well-being of the local community during and after the mine's life.

TARGETS & PROGRESS

In alignment with the designed mine closure plan, the mine closure activities have been progressing according to schedule. This comprehensive approach to managing the environmental and social impacts of mine closures reflects a commitment to responsible and sustainable mining practices with an aim to leave a positive legacy that benefits future generations. Key highlights of activities are area management, acid mine drainage management, and 8-pillar community development programs.

Dimension	Indicator	2023	Target 2023
Environment	Area management (ha)		
	• Disturbed area	658	800
	• Reclamation area	359	348
	• Void area closed	161	195
	Acid mine drainage management	100%	100%
	Biodiversity management	100%	100%
Social	Number of beneficiaries on community development programs		
	• Community institution	19	12
	• Education	20	12
	• Health	1,446	1,050
	• Income generation	64	72
	• Economic self-reliance	54	372
	• Social & culture	2,160	465
	• Environment	30	57
	• Infrastructure	0	0
Governance	Compliance		
	• Number of non-compliance	0	0
	• Effluent quality compliance	100%	100%

COMMUNITY ACTIVITIES DURING MINE CLOSURE AT EMBALUT

Embalut has taken a participatory approach to community development and empowerment programs for post-mining phase, emphasizing the potential of community-based agro-edu-tourism to sustain and enrich local livelihoods. In 2023, the Company created a multifaceted ecosystem of sustainable development through several projects. Key among these projects were agro-edu-tourism developments, economic independence initiatives, and training programs.

Agro-edu-tourism development: Support the development of fruit gardens, cattle sheds, agricultural tourism, fishing ponds, and fishing points.

Economic independence initiatives: Support the establishment of 2 women farmer groups for oyster mushroom cultivation and laying hen businesses.

Training programs: Organized an extensive range of skill development programs to 138 beneficiaries, covering welding, cattle breeding, agriculture, fruit plantation management, and mechanics.



Budget	USD 69,232
Number of beneficiaries	3,793 persons
Number of projects	14 projects

ADDITIONAL INFORMATION















LIST OF BUSINESS

 Financial Report only
 Financial and Sustainability Reports





ENERGY RESOURCES

As of 31 December 2023

Mining Business

Country	Scope	Name	Type	Status	Production volume		Ownership
					100% basis	Equity-based	
Indonesia		Indominco	open-pit coal mine	operating	6.5 Mt	4.2 Mt	65.14%
		Trubaindo	open-pit coal mine	operating	2.7 Mt	1.8 Mt	65.14%
		Bharinto	open-pit coal mine	operating	7.1 Mt	4.6 Mt	65.14%
		Jorong	open-pit coal mine	operating	0.5 Mt	0.4 Mt	65.14%
		GPK	open-pit coal mine	operating	-	-	65.14%
	-	TIS	open-pit coal mine	project development	-	-	65.14%
	-	NPR	open-pit coal mine	project development	-	-	65.14%
China		Gaohe	underground coal mine	operating	10.0 Mt	4.5 Mt	45%
		Hebi	underground coal mine	operating	1.0 Mt	0.4 Mt	40%
Australia		Airly	underground coal mine	operating	0.6 Mt	0.6 Mt	100%
		Clarence	underground coal mine	operating	0.9 Mt	0.9 Mt	100%
		Mandalong	underground coal mine	operating	1.8 Mt	1.8 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	Scope	Name	Type	Status	Production capacity		Ownership
					100% basis	Equity-based	
The U.S.		Marcellus	shale gas production	operating	147 MMcfed	142 MMcfed	96.38%
		Barnett	shale gas production	operating	745 MMcfed	718 MMcfed	96.38%
		Barnett Zero	carbon capture, utilization and storage	operating	210,000 tCO ₂ ^(a)	202,398 tCO ₂ ^(a)	96.38%
		Cotton Cove	carbon capture, utilization and storage	project development	45,000 tCO ₂ ^(a)	43,371 tCO ₂ ^(a)	96.38%

^(a) Average carbon sequestration rate

ENERGY GENERATION

Thermal Power Business

Country	Scope	Name	Type	Status	Production capacity		Ownership
					100% basis	Equity-based	
Thailand	✓	BLCP	coal-fired power plant	operating	1,434 MW	717 MW	50% ^(b)
Lao PDR	✓	HPC	coal-fired power plant	operating	1,878 MW	751 MW	40% ^(b)
China	✓	Zhengding	combined heat & power plant	operating	139 MW	139 MW	100% ^(b)
	✓	Luannan	combined heat & power plant	operating	246 MW	246 MW	100% ^(b)
	✓	Zouping	combined heat & power plant	operating	233 MW	163 MW	70% ^(b)
	✓	SLG	coal-fired power plant	operating	1,320 MW	396 MW	30% ^(b)
Japan	✓	Nakoso	integrated gasification combined cycle power plant	operating	543 MW	73 MW	13.4% ^(b)
The U.S.	✓	Temple I	gas-fired power plant	operating	768 MW	768 MW	100%
	✓	Temple II	gas-fired power plant	operating	755 MW	755 MW	100%

^(b) Banpu Power's ownership (78.66% share is held by Banpu)

Renewable Power Business

Country	Scope	Name	Type	Status	Production capacity		Ownership
					100% basis	Equity-based	
China	✓	Jinshan	solar power plant	operating	28.95 MW	28.95 MW	100%
	✓	Huineng	solar power plant	operating	21.51 MW	21.51 MW	100%
	✓	Haoyuan	solar power plant	operating	20.00 MW	20.00 MW	100%
	✓	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%
	✓	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%
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	3.50 MW	100%
	✓	Awaji	solar power plant	operating	7.90 MW	7.90 MW	100%
	✓	Nari Aizu	solar power plant	operating	20.46 MW	20.46 MW	100%
	✓	Mukawa	solar power plant	operating	17.00 MW	15.81 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	7.00 MW	100%
	✓	Shirakawa	solar power plant	operating	10.00 MW	10.00 MW	100%
	✓	Kesenuma	solar power plant	operating	20.00 MW	20.00 MW	100%
	✓	Nihonmatsu	solar power plant	operating	12.00 MW	12.00 MW	100%
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%
The U.S.	-	Sunshine	solar power plant	project development	2.5 MW	2.5 MW	100%

ENERGY TECHNOLOGY

Energy Storage System

Country	Scope	Name	Type	Status	Production capacity		Ownership
					100% basis	Equity-based	
China	✓	Durapower	energy storage	operating	1.0 GWh	0.7 GWh	65.10%
Thailand	-	DP NEXT	energy storage	project development	1.0 GWh	0.7 GWh	70%
	-	SVOLT Thailand	energy storage	project development	2.0 GWh	0.8 GWh	40%
Japan	-	Iwate Tono	battery farm	project development	58.0 MWh	43.5 MWh	75%

Solar Rooftop & Floating Business

Country	Scope	Name	Type	Status	Production capacity		Ownership
					100% basis	Equity-based	
Thailand	✓	Banpu NEXT	solar rooftop	operating	48.24 MW	48.24 MW	100%
			solar floating	operating	16.00 MW	16.00 MW	
	✓	Banpu NEXT Ecoserve	solar rooftop	project development	32.00 MW	32.00 MW	100%
				operating	1.42 MW	1.42 MW	
Vietnam	✓	Solar Esco	solar rooftop	operating	27.04 MW	13.27 MW	49.10%
				project development	55.36 MW	27.17 MW	
Indonesia	✓	PT. Cahaya Power Indonesia	solar rooftop	operating	5.69 MW	4.52 MW	79.50%
				project development	2.80 MW	2.22 MW	
	✓	PT. Centra Multi Suryanesia Aset	solar rooftop	operating	1.26 MW	0.82 MW	65%
				project development	15.03 MW	9.77 MW	
Japan	✓	Banpu Japan K.K.	solar rooftop	operating	0.80 MW	0.80 MW	100%
				project development	1.71 MW	1.71 MW	
China	✓	Shijiazhuang Chengfeng New Energy	solar rooftop	operating	12.86 MW	12.86 MW	100%
				project development	53.24 MW	53.24 MW	

Smart Cities & Energy Management

Country	Scope	Name	Type	Status	Project	Ownership
					100% basis	
Thailand	✓	Banpu NEXT	smart community & energy management	operating & project development	27 projects	100%

E-Mobility

Country	Scope	Name	Type	Status	Service capacity		Ownership
					100% basis	Equity-based	
Thailand	✓	Urban Mobility Tech	electric vehicle fleet	operating	600 units	238 units	39.74%
	✓	Evolt	chargers	operating	711 units	169 units	23.81%
	✓	Haupcar	car sharing	operating	271 EV cars	61 EV cars	22.54%
	✓	Banpu NEXT	e-bike rental	operating	50 e-bikes	50 e-bikes	100%

Energy Trading

Country	Scope	Name	Type	Status	Electricity sales	Ownership
					100% basis	
Japan	✓	Banpu Power Trading G.K.	energy trading	operating	760 GWh	100%

REPORTING BOUNDARY

Sustainability Topic	Mining business			Gas business	Thermal power business		Renewable power business				Solar rooftop & floating business	Smart cities & energy management business
	Indonesia	Australia	Mongolia		China	The U.S.	China	Japan	Vietnam	Australia	Thailand	Thailand
Sustainability Management	●	●	●	●	●	●	●	●	●	●	●	●
Data Privacy & Cybersecurity	●	●	NR	○	●	○	●	○	○	○	●	○
Risk Management	●	●	●	●	●	●	●	●	●	●	●	○
Digital Transformation	●	●	NR	○	●	○	●	●	●	●	●	●
Supplier Management	●	●	NR	○	●	○	○	○	○	○	○	○
Customer Management	●	●	NR	○	●	○	●	●	○	○	○	○
Economic Distribution	●	●	●	●	●	●	●	●	●	●	●	●
Compliance	●	●	●	○	●	○	●	●	●	●	●	○
Business Ethics	●	●	●	●	●	●	●	●	●	●	●	●
Reliability of Power Plants	NR	NR	NR	NR	●	●	NR	NR	NR	NR	NR	NR
Business Continuity	●	●	NR	○	●	○	●	●	●	●	●	○
GHG Emissions	●	●	NR	○	●	●	●	●	●	●	●	●
Energy	●	●	NR	●	●	●	●	●	●	●	●	●
Water	●	●	NR	●	●	●	●	●	●	●	NR	NR
Waste	●	●	NR	●	●	●	●	○	●	●	●	●
Biodiversity	●	●	NR	○	●	○	●	●	●	●	NR	NR
Air Emissions	●	●	NR	○	●	●	●	NR	NR	NR	NR	●
Mine Subsidence	NR	●	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
Mine Closure	●	●	NR	NR	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

Remarks:







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






- Mining business in China
- Thermal power business in Thailand, Lao PDR and Japan
- Solar rooftop & floating business in Vietnam
- Energy storage system business in 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.

- Energy storage system business in China
- Solar rooftop & floating business in Indonesia, Japan and China
- Smart cities business in Thailand
- Energy trading business in Japan

STAKEHOLDER ENGAGEMENT

Stakeholder	Engagement Channel	Stakeholder's Issue	Sustainability Topic
 Employee	<ul style="list-style-type: none"> Internal communication Labor unions and welfare committee Whistleblower channel Employee engagement survey Townhall meeting 	<ul style="list-style-type: none"> Business direction 	<ul style="list-style-type: none"> Our Business
		<ul style="list-style-type: none"> Responsible business practices 	<ul style="list-style-type: none"> Business Ethics
		<ul style="list-style-type: none"> Happiness in the workplace Fair compensation, welfare, and benefits Career opportunities 	<ul style="list-style-type: none"> Employee Management
		<ul style="list-style-type: none"> Capability development 	<ul style="list-style-type: none"> Human Capital Development
		<ul style="list-style-type: none"> Safety in the workplace 	<ul style="list-style-type: none"> Occupational Health & Safety
 Customer	<ul style="list-style-type: none"> Customer satisfaction survey Whistleblower channel Customer visit Annual maintenance plan and emergency drill Stakeholder engagement survey 	<ul style="list-style-type: none"> Quality and price of product On-time product delivery 	<ul style="list-style-type: none"> Customer Management
		<ul style="list-style-type: none"> Social and environmental impact from the use of product 	<ul style="list-style-type: none"> Customer Management GHG Emissions
		<ul style="list-style-type: none"> Availability of products and services 	<ul style="list-style-type: none"> Reliability of Power Plants
		<ul style="list-style-type: none"> Personal data breaches Use of customer data 	<ul style="list-style-type: none"> Data Privacy & Cybersecurity
 Supplier	<ul style="list-style-type: none"> Occasional supplier meeting Stakeholder engagement survey 	<ul style="list-style-type: none"> Transparent procurement process and fair compensation 	<ul style="list-style-type: none"> Business Ethics
		<ul style="list-style-type: none"> Future business opportunity 	<ul style="list-style-type: none"> Supplier Management
		<ul style="list-style-type: none"> Personal data breaches 	<ul style="list-style-type: none"> Data Privacy & Cybersecurity
 Contractor	<ul style="list-style-type: none"> Annual contractor meeting Stakeholder engagement survey 	<ul style="list-style-type: none"> Transparent procurement process and fair compensation 	<ul style="list-style-type: none"> Business Ethics
		<ul style="list-style-type: none"> Safety in the workplace 	<ul style="list-style-type: none"> Occupational Health & Safety
		<ul style="list-style-type: none"> Energy consumption reduction 	<ul style="list-style-type: none"> Energy
		<ul style="list-style-type: none"> Future business opportunity 	<ul style="list-style-type: none"> Supplier Management
 Business Partner	<ul style="list-style-type: none"> Board meeting at subsidiaries and associated companies Annual report and sustainability report Annual maintenance plan and emergency drill Stakeholder engagement survey 	<ul style="list-style-type: none"> Business transparency 	<ul style="list-style-type: none"> Business Ethics
		<ul style="list-style-type: none"> Operational performance and business growth 	<ul style="list-style-type: none"> Year in Review
		<ul style="list-style-type: none"> Business continuity 	<ul style="list-style-type: none"> Reliability of Power Plants
 Shareholder	<ul style="list-style-type: none"> Annual general meeting of shareholders Annual report and sustainability report Whistleblower channel Public information on the website 	<ul style="list-style-type: none"> Qualification of Board of Directors and managements 	<ul style="list-style-type: none"> Governance Structure Sustainability Governance
		<ul style="list-style-type: none"> Business transparency 	<ul style="list-style-type: none"> Business Ethics
		<ul style="list-style-type: none"> Risk & opportunity management 	<ul style="list-style-type: none"> Risk Management Business Continuity
		<ul style="list-style-type: none"> Research & development for competitive advantage 	<ul style="list-style-type: none"> Digital Transformation
		<ul style="list-style-type: none"> Operational performance and business growth 	<ul style="list-style-type: none"> Year in Review

Stakeholder	Engagement Channel	Stakeholder's Issue	Sustainability Topic
 Financial Capital Provider	<ul style="list-style-type: none"> Analyst meeting Annual report and sustainability report Stakeholder engagement survey 	• Business transparency	• Business Ethics
		• Operational performance and business growth	• Year in Review
 Government & Regulator	<ul style="list-style-type: none"> Occasional government visit Support governmental initiatives and activities Response to request for data disclosure Annual report and sustainability report Public information on the website Stakeholder engagement survey 	• Value creation for economy, society and environment	• Sustainability Governance
		• 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
 Investor and Investment Analyst	<ul style="list-style-type: none"> Investor roadshow Opportunity Day organized by the Stock Exchange of Thailand Annual report and sustainability report Public information on the website Stakeholder engagement survey 	• Qualification of Board of Directors and managements	• Governance 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, NGOs and Academic Institution	<ul style="list-style-type: none"> Response to request for data disclosure Public information on the website Media activity and event Stakeholder engagement survey 	• Value creation for economy, society and environment	• Sustainability Governance
		• Business transparency	• Business Ethics
		• Transparent performance disclosure	• Report Assurance
		• Regulatory compliance	• Compliance
		• Social and environmental impact from operational activities	• GHG Emissions • Water, Air Emissions & Waste • Community Engagement
 Community	<ul style="list-style-type: none"> Community consultative committee Community satisfaction survey Whistleblower channel Community development officers Public information on the website Stakeholder engagement survey 	• 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 Engagement

PERFORMANCE DATA

ECONOMIC PERFORMANCE

	2020	2021	2022	2023
Revenues (USD million)	2,283	4,124	7,693	5,159
EBITDA ^(a) (USD million)	563	1,778	3,916	1,562
Net profit (USD million)	(56)	304	1,162	160
Gross profit margin	20.0%	42.0%	53.0%	28.9%
Interest coverage ratio	2.5	5.8	9.4	2.5
Net debt to equity ratio	1.47	1.31	0.74	0.90

^(a) Earnings before interest, taxes, depreciation, and amortization

TAX PAYMENT - BY COUNTRY

	2020	2021	2022	2023
Indonesia				
• Net profit before tax (USD million)	725	621	1,545	644
• Income tax (USD million)	(35)	(146)	(345)	(144)
• Income tax paid (USD million)	(63)	(61)	(213)	(399)
• Income tax rate	22%	25%	22%	22%
China				
• Net profit before tax (RMB million)	339	51	205	69
• Income tax (RMB million)	(74)	(19)	1	(43)
• Income tax paid (RMB million)	(60)	(42)	(2)	(18)
• Income tax rate	25%	0-25%	0-25%	12.5-25%
Australia				
• Net profit before tax (AUD million)	(157)	(290)	246	322
• Income tax (AUD million)	-	-	(78)	102
• Income tax paid (AUD million)	-	-	-	-
• Income tax rate	30%	30%	30%	30%
The U.S.				
• Net profit before tax (USD million)	-	-	433	(49)
• Income tax (USD million)	-	-	(53)	24
• Income tax paid (USD million)	-	-	(7)	(4)
• Income tax rate	-	-	30%	21%
Banpu ^(a)				
• Net profit before tax (USD million)	(8)	690	2,144	490
• Income tax (USD million)	(9)	(198)	(521)	(119)
• Income tax paid (USD million)	(78)	(84)	(260)	(454)
• Income tax rate	20-25%	0-30%	0-30%	0-30%

^(a) Consolidated

CONTRIBUTIONS TO EXTERNAL ORGANIZATIONS & ASSOCIATIONS

	2020	2021	2022	2023
Lobbying or interest representation (USD thousand)	0	0	0	185
Political party or political interest (USD thousand)	0	0	0	0.8
Trade association or tax-exempt groups (USD thousand)	1,040	630	440	565
Other contributions (USD thousand)	0	0	0	0
3 largest contributions (USD thousand)				
• NSW Minerals Council	-	-	-	452
• Texas Oil & Gas Association	-	-	-	58
• Indonesia Coal Mining Association	-	-	-	18

SUSTAINABILITY TAXONOMY^(a)

	2020		2021		2022		2023	
	USD million	%	USD million	%	USD million	%	USD million	%
Revenue	-	-	-	-	-	-	5,159	-
• Taxonomy-eligible	-	-	-	-	-	-	234	5%
• Taxonomy-aligned	-	-	-	-	-	-	0	0%
• Not taxonomy-eligible	-	-	-	-	-	-	4,925	95%
Capital Expenditure	-	-	-	-	-	-	4,602	-
• Taxonomy-eligible	-	-	-	-	-	-	368	8%
• Taxonomy-aligned	-	-	-	-	-	-	0	0%
• Not taxonomy-eligible	-	-	-	-	-	-	4,235	92%
Operational Expenditure	-	-	-	-	-	-	388	-
• Taxonomy-eligible	-	-	-	-	-	-	29	7%
• Taxonomy-aligned	-	-	-	-	-	-	0	0%
• Not taxonomy-eligible	-	-	-	-	-	-	359	93%

^(a) Refers to EU taxonomy for sustainable activities

GOVERNANCE STRUCTURE

	2020	2021	2022	2023
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	11
• Female	1	1	1	2
Board of Directors - by tenures				
• >10 years	3	3	4	5
• 3-10 years	7	7	7	6
• <3 years	3	3	2	2
Average tenures of Board of Directors	12.3	13.3	13.6	14.1

GOVERNANCE MANAGEMENT

	2020	2021	2022	2023
Number of meetings				
• Board of Directors	13	13	12	12
• Corporate governance and nomination committee	4	9	11	6
• Audit committee	9	9	9	9
• Compensation committee	8	5	6	6
• ESG committee	-	3	4	4
Meeting attendance				
• Board of Directors	98%	99%	99%	99%
• Corporate governance and nomination committee	94%	100%	100%	100%
• Audit committee	100%	100%	100%	100%
• Compensation committee	100%	100%	100%	95%
• ESG committee	-	100%	100%	100%
Performance assessment ^(a)				
• Group	4.74	4.85	4.91	4.62
• Individual (average)	4.56	4.67	4.76	4.59
• Corporate governance and nomination committee	4.95	4.99	4.84	4.93
• Audit committee	4.45	4.90	4.75	4.75
• Compensation committee	4.61	4.70	4.70	4.84
• ESG committee	-	4.60	4.33	3.93

^(a) In the range of 0 to 5

BUSINESS ETHICS

	2020	2021	2022	2023
Number of significant corporate governance complaints	9	2	0	0
• Corruption and bribery	0	0	0	0
• Fraud, embezzlement, theft	1	0	0	0
• Dishonesty for own and other benefit	4	0	0	0
• Dangers to health and safety or the environment	0	0	0	0
• Intentional act causing harm or loss to the Company	1	0	0	0
• Significant breaches of the Code of Conduct	0	2	0	0
• Assistance in wrongdoing ^(a)	0	0	0	0
• Others ^(b)	3	0	0	0
Proportion of significant corporate governance complaints resolved through a dispute mechanism	100%	100%	NA ^(c)	NA ^(c)
Number of confirmed incidents of corruption	0	0	0	0
• Incidents in which employees were dismissed or disciplined	0	0	0	0
• Incidents in which contracts with business partners were terminated or not renewed	0	0	0	0
Public legal cases regarding corruption	0	0	0	0
Number of legal actions pending or completed	0	0	0	0
• Legal actions regarding anti-competitive behavior	0	0	0	0
• Legal actions regarding violations of anti-trust and monopoly legislation	0	0	0	0
Fines regarding antitrust/anti-competitive practices	0	0	0	0
• Number of fines	0	0	0	0
• 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) Includes discrimination, harassment, and conflict of interest

^(c) No significant complaints

ANTI-CORRUPTION PRACTICES

	2020	2021	2022	2023
Coverage of business units assessed for corruption risks	-	-	-	100%
Coverage of employees with anti-corruption policy communication	-	-	-	100%
• Senior management	-	-	-	100%
• Middle management	-	-	-	100%
• Junior management	-	-	-	100%
• Staff and supervisor	-	-	-	100%
Coverage of business partners with anti-corruption policy communication	-	-	-	100%
• Supplier	-	-	-	100%
• Contractor	-	-	-	100%
• Joint venture	-	-	-	100%
Coverage of employees with anti-corruption awareness training	-	-	-	100%
• Senior management	-	-	-	100%
• Middle management	-	-	-	100%
• Junior management	-	-	-	100%
• Staff and supervisor	-	-	-	100%

SUSTAINABILITY MANAGEMENT

	2020	2021	2022	2023
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%	86%	86%

ECONOMIC DISTRIBUTIONS

	2020	2021	2022	2023
Ratio of the dividend payout to net profits	NA ^(a)	27%	21%	73%
Economic value generated (USD million)				
• Sales	2,219	4,033	7,059	4,967
• Other revenues	228	274	576	243
Economic value distributed (USD million)				
• Shareholder ^(a)	63	56	135	135
• Supplier and contractor ^(b)	1,173	1,362	1,679	2,136
• Employee ^(c)	308	380	400	454
• Financial Institution ^(d)	166	167	265	473
• Government ^(e)	246	496	1,177	756
• Community ^(f)	3	5	9	7
Economic value retained (USD million)	485	1,840	3,969	1,249
Community & social investment - by objective				
• Donations to charity	46%	34%	26%	32%
• Community investments	44%	59%	68%	57%
• Commercial initiatives	10%	7%	6%	11%
Community & social investment - by type				
• Cash contribution	70%	87%	75%	35%
• Time provided by volunteer staff	22%	1%	4%	9%
• Management overhead	7%	11%	18%	17%
• In-kind giving	1%	1%	3%	39%
Community investment - by dimension				
• Economic development & income generation	32%	15%	24%	28%
• Social & cultural promotion	23%	14%	32%	26%
• Infrastructure development	17%	13%	7%	6%
• Education development	15%	9%	18%	21%
• Health and sanitation development	9%	47%	17%	14%
• Environmental conservation	4%	2%	2%	5%

^(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

RISK MANAGEMENT

	2020	2021	2022	2023
Coverage of ESG risk management	87%	94%	95%	98%
Coverage of Board of Directors with risk management training	-	-	-	100%
• Independent Director	-	-	-	100%
• Non-executive Director	-	-	-	100%
• Executive Director	-	-	-	100%
Coverage of employees with risk awareness training	-	-	-	100%
• Senior management	-	-	-	100%
• Middle management	-	-	-	100%
• Junior management	-	-	-	100%
• Staff and supervisor	-	-	-	100%

CUSTOMER MANAGEMENT

	2020	2021	2022	2023
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	0
Total number of identified leaks, thefts, or losses of customer data.	-	-	-	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)	99% ^(c)
• Coverage of customers surveyed	-	89% ^(b)	100% ^(b)	100% ^(c)

^(a) No complaints

^(b) Includes data of thermal power business in China only

^(c) Includes data of thermal power, mining, solar rooftop, and energy trading business only

SUPPLIER MANAGEMENT

	2020	2021 ^(c)	2022 ^(d)	2023 ^(e)
Number of suppliers				
• All suppliers	3,197	1,978	909	935
• Critical suppliers	2,389	733	462	874
Proportion of suppliers assessed for ESG risks				
• All critical tier-1 suppliers	3%	6%	64	84%
• New critical tier-1 suppliers	-(b)	-(b)	-(b)	1%
Proportion of spending on local suppliers ^(a)	38%	52%	99%	86%
Proportion of contracts that include ESG clauses	15%	-(b)	-(b)	-(b)

^(a) Supplier that operates in the areas of business operations

^(b) Data collection system under standardization

^(c) Includes data of mining business in Indonesia and Australia and solar rooftop business in Thailand only

^(d) Includes data of mining business in Indonesia only

^(e) Includes data of mining business in Indonesia and Australia, and gas business in the U.S. only

RELIABILITY OF POWER PLANTS

	2020		2021		2022		2023	
	CHP	CCGT	CHP	CCGT	CHP	CCGT	CHP	CCGT
Efficiency rate								
• Electricity generation ^(a)	247	-	203	-	184	-	168	7,121
• Steam production ^(b) (kg/GJ)	37.75		37.96		37.23		37.31	
Availability factor	97.72%	-	95.05%	-	94.00%	-	95.98%	82.68%
Overall efficiency	74.70%	-	77.47%	-	79.78%	-	84.06%	47.92%
Planned outage								
• Frequency (case)	15	-	20	-	14	-	17	5
• Duration (hour/case)	174	-	229	-	427	-	296	436
Unplanned outage								
• Frequency (case)	0	-	4	-	1	-	0	5
• Duration (hour/case)	NA ^(c)	-	427	-	72	-	NA ^(c)	13.34
Unplanned outage factor	0%	-	0.05%	-	0.82%	-	0%	0.51%

^(a) g/KWh for CHP and btu/KWh for CCGT

^(b) Applicable only for CHP

^(c) No unplanned outage

DIGITAL TRANSFORMATION

	2020	2021	2022	2023
Number of digital self-service adoption cases ^(a)	-	-	-	20
Number of digital enabled business process cases	-	-	-	185
Reliability and availability of digital infrastructure services	-	-	-	99.9%

^(a) Number of self-service's information discovery and coding tool adoption

COMPLIANCE

	2020	2021	2022	2023
Significant socioeconomic non-compliance	0	0	0	0
• Number of significant fines ^(a)	0	0	0	0
• Total amount of significant fines (USD)	0	0	0	0
• Number of significant non-monetary sanctions ^(b)	0	0	0	0
Fines paid - for instance occurred in current reporting period	0	0	0	0
• Number of significant fines ^(a)	0	0	0	0
• Amount of significant fines (USD)	0	0	0	0
Fines paid - for instance occurred in previous reporting periods	0	0	0	0
• Number of significant fines ^(a)	0	0	0	0
• Amount of significant fines (USD)	0	0	0	0
Number of significant environmental non-compliance	0	1	1	0
• Effluent discharge limits	0	0	0	0
• Air emissions standards	0	0	0	0
• Others	0	1	1	0
Number of significant environmental incidents ^(c)	0	1	1	0
Spills ^(d)				
• Number of significant spills	0	0	0	0
• Total amount of significant spills (liter)	0	0	0	0

^(a) Refers to the international best practices of the fine or potential fine that is greater than USD 10,000

^(b) Refers to the instances where breaches of law and regulation lead to criminal prosecution regardless the imposition of fines

^(c) Refers to internal definition with criteria such as any damage to widespread area or potential fines that is greater than USD 10,000

^(d) Refers to internal definition with criteria such as spillage in any damage to widespread area >5 km

MANAGEMENT SYSTEM COVERAGE

	2020		2021		2022		2023	
	Site	%	Site	%	Site	%	Site	%
Environmental management system ^(a)								
• Covered by management system	-	-	-	-	-	-	43	100%
• Internally audited by specialists from headquarters	-	-	-	-	-	-	17	40%
• Audited by third-party	-	-	-	-	-	-	7	16%
• With ISO 14001:2015 certification	-	-	-	-	-	-	8	19%
OHS management system ^(a)								
• Covered by management system	-	-	-	-	-	-	43	100%
• Internally audited by specialists from headquarters	-	-	-	-	-	-	17	40%
• Audited by third-party	-	-	-	-	-	-	7	16%
• With ISO 45001:2018 certification	-	-	-	-	-	-	7	16%

^(a) Includes only business units with >50% share and has management control

BUSINESS CONTINUITY

	2020	2021	2022	2023
Coverage of CMT/IMT exercise	100% ^(a)	100% ^(a)	100%	57%
Coverage of BCP exercise for critical business functions	-	7% ^(b)	11%	49%

^(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

DATA PRIVACY & CYBERSECURITY

	2020	2021	2022	2023
Number of cybersecurity breaches	1	0	1	0
Number of IT infrastructure incidents	1	1	1	0
% of IT and IoT assets securely managed by security operation center	-	30%	60%	70%
Cybersecurity & privacy maturity score ^(a)	-	2.0	3.0	3.5

^(a) In the range of 1 to 5

PRODUCT

	2020	2021	2022	2023
Finished coal (tonnes)	31,500,685	27,803,045	25,270,108	23,540,287
Electricity sold (MWh)				
• Renewable	338,870	539,641	752,763	855,297
• Conventional fuel	1,563,091	1,178,967	2,899,628	6,540,164
Steam sold (MWh)	3,564,832	3,529,044	3,406,515	3,708,691
Heat sold (MWh)	1,346,803	1,325,845	1,366,146	1,294,400

BIODIVERSITY

	2020 ^(a)		2021 ^(a)		2022 ^(a)		2023	
	Operating	Project ^(b)	Operating	Project ^(b)	Operating	Project ^(b)	Operating	Project ^(b)
Number of business units	-	-	42	10	41	10	42	8
• Assessed for potential biodiversity impact	-	-	42	9	41	10	42	8
• Identified as high potential of biodiversity impact	-	-	7	2	7	2	7	1
• Assessed for biodiversity value	-	-	7	4	7	4	7	3
• Required biodiversity management plan ^(c)	-	-	7	2	7	2	7	1
• Implemented biodiversity management plan ^(c)	-	-	7	NA ^(d)	7	NA ^(d)	7	NA ^(d)
Business unit(s) in relation to protected area	-	-	4	3	4	3	4	2
• In the area	-	-	1	0	1	0	1	0
• Adjacent to	-	-	1	1	1	1	1	1
• Containing portions	-	-	2	2	2	2	2	1
Business unit(s) in relation to high biodiversity wilderness area	-	-	3	1	3	1	3	1
• In the area	-	-	3	1	3	1	3	1
• Adjacent to	-	-	0	0	0	0	0	0
• Containing portions	-	-	0	0	0	0	0	0
Area (hectares)	-	-	78,288	11,831	75,315	16,891	80,299	11,211
• Assessed for potential biodiversity impact	-	-	78,288	11,831	75,315	16,891	80,299	11,211
• Identified as high potential of biodiversity impact	-	-	46,031	820	46,031	820	46,031	200
• With biodiversity management plan	-	-	46,031	NA ^(d)	46,031	NA ^(d)	46,031	NA ^(d)
• Biodiversity offset area	-	-	5,623	NA ^(d)	5,623	NA ^(d)	22,154	NA ^(d)
Areas in relation to protected area (hectares)	-	-	26,825	4,903	26,825	4,903	26,825	4,283
• In the area	-	-	24,121	0	24,121	0	24,121	0
• Adjacent to	-	-	436	854	436	854	436	854
• Containing portions	-	-	2,268	4,049	2,268	4,049	2,268	3,429
Areas in relation to high biodiversity wilderness area (hectares)	-	-	19,206	200	19,206	200	19,206	200
• In the area	-	-	19,206	200	19,206	200	19,206	200
• Adjacent to	-	-	0	0	0	0	0	0
• Containing portions	-	-	0	0	0	0	0	0
Proportion of business units								
• Assessed for potential biodiversity impact	-	-	100%	90%	100%	100%	100%	100%
• Assessed for biodiversity value ^(c)	-	-	100%	100%	100%	100%	100%	100%
• With biodiversity management plan ^(c)	-	-	100%	NA ^(d)	100%	NA ^(d)	100%	NA ^(d)
IUNC Red List ^(c)								
• Critically endangered	-	-	-	-	-	3	-	5
• Endangered	-	-	-	-	-	6	-	5
• Vulnerable	-	-	-	-	-	17	-	18
• Near threatened	-	-	-	-	-	13	-	13
• Least concern	-	-	-	-	-	81	-	77
• Data deficient	-	-	-	-	-	0	-	2

^(a) Adjusted from previous report

^(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

ENERGY

	2020	2021	2022 ^{(b) (d)}	2023
Total energy consumption (TJ)	23,311	19,597	46,060	55,141
Renewable energy consumption (TJ)				
• Renewable fuel	2,843	2,750	2,534	3,647
• Electricity purchased	0	0	0	0
• Electricity self-generated	1,239	1,987	69	107
Non-renewable energy consumption (TJ)				
• Non-renewable fuel	42,641	37,412	63,287	91,498
• Electricity purchased	1,117	1,112	1,274	1,444
• Steam, heat and cooling	0	0	0	0.15
Energy consumption - by source				
• Coal	31,391	27,491	24,796	26,853
• Diesel	6,900	6,748	6,992	7,911
• Natural gas	2	0	28,510	41,707
• Waste gas	4,102	2,613	2,836	494
• Palm oil	2,843	2,750	2,534	3,610
• Electricity (from non-renewable fuel)	1,117	1,112	1,274	1,444
• Methane	183	503	0	0
• Solar	1,239	1,832	2,497	2,825
• Wind	0	155	282	361
• Others ^(a)	61	57	153	14,569 ^(c)
Renewable energy sold (TJ)				
• Electricity	1,220	1,943	2,710	3,079
Non-renewable energy sold (TJ)				
• Electricity	5,627	4,244	3,922	23,545
• Steam	12,833	12,705	12,263	13,351
• Heat	4,848	4,773	4,918	4,660
Energy consumption intensity				
• Mining business (GJ/tonne finished coal)	0.424	0.444	0.466	0.588
• Thermal power business (GJ/MWh)	1.535	1.195	4.442	2.304
• Renewable power business (GJ/MWh)	0.071	0.069	0.101	0.121
• Solar rooftop business (GJ/MWh)	0.047	0.020	0.019	0.010

^(a) Includes gasoline, petroleum-based oil, petroleum-based grease, LPG, activated carbon, and ethanol

^(b) Excludes 2 coal projects in Indonesia

^(c) Include total non-renewable fuel in gas business in the U.S.

^(d) Adjusted from previous report (incorporated thermal power business in the U.S.)

GHG EMISSIONS

	2020	2021	2022 ^{(d) (e)}	2023
GHG emissions ^{(a) (b)} (tonnes CO ₂ e)	7,654,367	7,239,161	8,776,664	8,613,863
• Scope 1 ^(a)	7,401,161	6,990,528	8,507,328	8,368,915
• Scope 2	253,206	248,633	269,336	244,948
• Scope 3	65,656,827	57,714,468	51,806,516	48,004,651
GHG emissions intensity ^{(a) (b)}				
• Mining business (tonnes CO ₂ e/tonne finished coal)	0.115	0.129	0.136	0.135
• Power business (tonnes CO ₂ e/MWh)	0.591	0.555	0.632	0.438
• Solar rooftop business (tonnes CO ₂ e/MWh)	0.003	0.002	0.001	0.001
GHG emissions ^(b) (tonnes CO ₂ e) - included biogenic CO ₂	8,015,832	7,591,449	9,023,905	8,848,406
• Scope 1 (Biogenic CO ₂)	361,466	352,288	247,241	234,543
GHG emissions intensity ^(b) - included biogenic CO ₂				
• Mining business (tonnes CO ₂ e/tonne finished coal)	0.127	0.142	0.146	0.145
• Power business (tonnes CO ₂ e/MWh)	0.591	0.555	0.632	0.438
• Solar rooftop business (tonnes CO ₂ e/MWh)	0.003	0.002	0.001	0.001
GHG emissions intensity ^(b) (tonnes CO ₂ e/MWh)				
• Electricity generation	0.151	0.132	0.324	0.274
• Steam & heat generation	0.462	0.460	0.338	0.176
SF ₆ emissions (tonnes CO ₂ e)	548	275	865	441
Proportion of electricity generated ^(c)				
• Conventional fuel	98%	96%	95%	95%
• Renewable energy	2%	4%	5%	5%

^(a) Excludes biogenic CO₂

^(b) Scope 1 & 2

^(c) Includes thermal power business and renewable power business

^(d) Excludes 2 coal projects in Indonesia

^(e) Adjusted from previous report (incorporated thermal power business in the U.S.)

WATER

	2020		2021		2022 ^(a)		2023	
	Freshwater	Other water	Freshwater	Other water	Freshwater	Other water	Freshwater	Other water
Water withdrawal (ML)								
• from all areas	1,387,991	1,184	1,218,394	1,260	255,232	3,051	284,806	13,338
• from water stress area	7,615	0	6,908	0	24,486	1,856	36,476	5,770
Water withdrawal - from all areas (ML)								
• Surface water	1,366,286	0	1,187,140	0	223,222	3	252,804	22
• Groundwater	15,759	0	26,486	0	28,640	0	29,380	0
• Seawater	0	1,184	0	1,260	0	1,191	0	1,138
• Produced water	0	0	0	0	0	0	0	2,815
• Third-party water	5,946	0	4,768	0	3,370	1,857	2,622	9,363
Water withdrawal - from water stress area (ML)								
• Surface water	0	0	17	0	797	0	5,415	0
• Groundwater	2,234	0	2,711	0	21,287	0	29,097	0
• Seawater	0	0	0	0	0	0	0	0
• Produced water	0	0	0	0	0	0	0	2,796
• Third-party water	5,381	0	4,180	0	2,402	1,856	1,964	2,975
Third-party water withdrawal - from water stress area (ML)								
• Surface water	4,117	0	3,182	0	2,402	1,599	1,592	2,975
• Groundwater	0	0	1	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)	1,263	0	997	0	0	258	371	0
Water discharge (ML)								
• to all areas	1,374,946	931	1,206,532	1,037	265,343	37,209	185,527	9,178
• to water stress area	1,779	0	1,606	0	19,516	1,230	32,272	1,383
Water discharge - to all areas (ML)								
• Surface water	1,373,166	0	1,194,438	0	252,525	34,224	169,461	6,923
• Groundwater	0	0	0	0	0	0	99	0
• Seawater	0	931	0	1,037	0	2,407	0	1,262
• Third-party water	1,780	0	12,094	0	12,818	579	15,676	993
Pollutant load - to surface water (tonnes)								
• COD	-	-	11 ^(d)	0 ^(d)	4	15	0	15
• TDS	-	-	0 ^(d)	0 ^(d)	139	791	0	954
• TSS	-	-	13 ^(d)	0 ^(d)	9,374	1,812	15,912	2,392
• Oil & Grease	-	-	0 ^(d)	0 ^(d)	0	1	0	1
• Fe	-	-	0 ^(d)	0 ^(d)	99	40	143	14
Pollutant load - to groundwater (tonnes)								
• COD	-	-	-	-	-	-	0	0
• TDS	-	-	-	-	-	-	0	0
• TSS	-	-	-	-	-	-	0	0
• Oil & Grease	-	-	-	-	-	-	0	0
• Fe	-	-	-	-	-	-	0	0
Pollutant load - to seawater (tonnes)								
• COD	-	-	0 ^(d)	0 ^(d)	0	0	0	0
• TDS	-	-	0 ^(d)	0 ^(d)	0	0	0	0
• TSS	-	-	0 ^(d)	0 ^(d)	1	1	0	3
• Oil & Grease	-	-	0 ^(d)	0 ^(d)	0	0	0	0
• Fe	-	-	0 ^(d)	0 ^(d)	0	0	0	0
Pollutant load - to third-party water (tonnes)								
• COD	-	-	0 ^(d)	54 ^(d)	5	32	2	28
• TDS	-	-	0 ^(d)	1,556 ^(d)	114	1,374	68	1,673
• TSS	-	-	0 ^(d)	33 ^(d)	1	19	1	28
• Oil & Grease	-	-	0 ^(d)	0 ^(d)	0	0	0	0
• Fe	-	-	0 ^(d)	0 ^(d)	0	0	0	0
Change in water storage (ML)								
• All areas	-(b)		-(b)		-80,968		43,795	
• Water stress area	-(b)		-(b)		-80,968		0	
Water consumption (ML)								
• All areas	13,298		12,085		36,698		59,935	
• Water stress area	5,836		5,302		5,596		8,591	
Water consumption intensity								
• Mining business (m ³ /tonne finished coal)	0.237		0.243		1.260		1.882	
• Gas business (m ³ /MMcf)	-		-		-		15,440	
• Thermal power business (m ³ /MWh)	0.901		0.877		0.818		0.958	
• Renewable power business (m ³ /MWh)	0.013		0.044		0.100		3.388	

^(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

	2020			2021			2022 ^(a)			2023		
	Onsite	Offsite	Total	Onsite	Offsite	Total	Onsite	Offsite	Total	Onsite	Offsite	Total
Waste generated (tonnes)			763,366			790,559			806,522			3,864,992
• Hazardous waste			103			2,585			2,642			4,501
• Non-hazardous waste ^(a)			763,263			787,974			803,880			3,860,491
Waste diverted from disposal (tonnes)			770,827			780,678			802,394			777,003
• Hazardous waste	503	5,876	6,379	578	1,686	2,263	629	1,748	2,377	760	2,403	3,164
- Preparation for reuse	0	255	255	0	270	270	0	221	221	0	66	66
- Recycling	503	5,621	6,124	578	1,416	1,994	629	1,527	2,156	760	2,337	3,097
- Other recovery operations	0	0	0	0	0	0	0	0	0	0	0	0
• Non-hazardous waste	400	764,048	764,448	290	778,125	778,415	421	799,596	800,017	476	773,364	773,840
- Preparation for reuse	372	335,091	335,463	227	418,597	418,824	333	137	470	412	27,653	28,065
- Recycling	29	428,957	428,985	63	359,528	359,591	88	799,458	799,547	64	745,711	745,774
- Other recovery operations	0	0	0	0	0	0	0	0	0	0	0	0
Waste directed to disposal (tonnes)			5,371			5,653			7,164			3,084,838
• Hazardous waste	0	322	322	0	333	333	0	268	268	0	1,307	1,307
- Incineration (with energy recovery)	0	0	0	0	1	1	0	2	2	0	3	3
- Incineration (without energy recovery)	0	282	282	0	179	179	0	188	188	0	128	128
- Landfilling	0	1	1	0	153	153	0	78	78	0	1,176	1,176
- Other disposal	0	40	40	0	0	0	0	0	0	0	0	0
• Non-hazardous waste	1,720	3,329	5,049	1,759	3,562	5,321	1,543	5,353	6,896	3,067,124	16,407	3,083,531
- Incineration (with energy recovery)	0	0	0	0	72	72	0	228	228	0	187	187
- Incineration (without energy recovery)	0	0	0	0	0	0	0	0	0	2	0	2
- Landfilling	1,720	3,238	4,958	1,759	3,490	5,249	1,543	5,125	6,668	1,836	16,220	18,057
- Other disposal ^(b)	0	91	91	0	0	0	0	0	0	3,065,286	0	3,065,286
Hazardous waste directed to disposal intensity												
• Mining business (kg/tonne finished coal)		0.010			0.012			0.010			0.006	
• Gas business (kg/MMcf)		-			-			-			3.838	
• Thermal power business (kg/MWh)		0.001			0			0.004			0.0003	
• Renewable power business (kg/MWh)		0			0			0.001			0.022	
• Solar rooftop business (kg/MWh)		-			-			-			0.040	
Non-hazardous waste directed to disposal intensity												
• Mining business (kg/tonne finished coal)		0.139			0.162			0.244			0.186	
• Gas business (tonne/MMcf)		-			-			-			10.379	
• Thermal power business (kg/MWh)		0.101			0.131			0.120			0.026	
• Renewable power business (kg/MWh)		0.025			0.022			0.039			0.019	
• Solar rooftop business (kg/MWh)		-			-			-			0	
Proportion of hazardous waste reused & recycled		95%			87%			90%			71%	
Proportion of non-hazardous waste reused & recycled		99%			99%			99%			20%	

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

^(b) Includes deep injection of produced water

MINERAL WASTE

	2020	2021	2022	2023
Overburden ^(a)				
• Amount (million BCM)	182	176	179	219
• Amount (million dry tonnes)	-	-	-	470
Overburden in-pit backfilled ^(a)				
• Amount (million BCM)	-	-	-	210
• Proportion of in-pit backfilled	91%	81%	92%	96%
Tailings (dry tonnes)	388,658	598,071	591,091	599,356
Progress of in-pit backfilling against plan ^(a)	94%	100%	94%	112%
Proportion of mines with acid mine drainage management plan ^(b)	100%	100%	100%	100%
Number of tailings facilities				
• Active	3	3	3	4
• Closed	2	2	2	9
Number of tailings facilities				
• High risk	-	-	-	2
• Medium risk	-	-	-	0
• Low risk	-	-	-	9
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

AIR EMISSIONS

	2020	2021	2022 ^(d)	2023
Air emissions load (tonnes)				
• SO ₂	862	977	947	634
- Non-point source	698	683	645	469
- Point source	164	294	302	165
• NO _x	1,507 ^(a)	1,644 ^(a)	910 ^(a)	901
• PM ₁₀ ^(b)	250 ^(a)	255 ^(a)	331 ^(a)	302
• TSP ^(a)	33	112	84	191
• Mercury ^(c)	0.0085	0.0091	0.0079	0.0082
Air emissions intensity - mining business (g/tonne finished coal)				
• SO ₂	22.1	29.6	32.4	21.09
- Non-point source	22.1	24.5	25.5	19.92
- Point source	0	5.1	6.9	1.17
• NO _x	39.2 ^(a)	49.5 ^(a)	27.2 ^(a)	22.43
• PM ₁₀	7.9 ^(a)	9.2 ^(a)	13.1 ^(a)	12.84
• TSP ^(a)	0.5	3.4	2.7	2.02
Air emissions intensity - thermal power business (g/MWh)				
• SO ₂	25.4	25.4	21.8	11.88
- Non-point source	0	0	0	0
- Point source	25.4	25.4	21.8	11.88
• NO _x	41.9 ^(a)	44.5 ^(a)	37.9 ^(a)	32.34
• TSP ^(a)	2.7	3.1	2.6	12.41
• Mercury	0.0013	0.0015	0.0014	0.0007
Ozone-depleting substances (Kg CFC-11e)				
• ODS Consumption	181	108	9	32
• 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

MINE SUBSIDENCE^(a)

	2020	2021	2022	2023
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^(a)

	2020	2021	2022	2023	
				Person	%
Total employees	5,482	5,488	5,538	5,704	-
Employee - by gender					
• Male	85.0%	85.2%	85.5%	4,853	85.1%
• Female	15.0%	14.8%	14.5%	851	14.9%
Employee - by nationality					
• Thai	9.6%	10.1%	11.5%	697	12.2%
• Indonesian	42.8%	42.5%	42.0%	2,209	38.7%
• Chinese	16.9%	17.1%	16.7%	957	16.8%
• Australian	28.6%	28.3%	28.0%	1,740	30.5%
• Mongolian	1.5%	1.4%	1.2%	53	0.9%
• Japanese	0.2%	0.2%	0.3%	23	0.4%
• Vietnamese	0.2%	0.2%	0.2%	12	0.2%
• American ^(b)	-	0.1%	0.1%	5	0.1%
• Others	0.3%	0.2%	0.2%	8	0.1%
Employee - by age					
• Under 30	11.6%	9.5%	11.3%	683	12.0%
• 30-39	37.0%	35.0%	33.9%	1,934	33.9%
• 40-49	33.3%	34.6%	34.8%	1,933	33.9%
• Over 50	18.2%	20.8%	20.0%	1,154	20.2%
Employee - by type					
• Permanent	93.2%	83.4%	71.4%	5,157	90.4%
• Temporary	6.8%	16.6%	28.6%	547	9.6%
Management ^(c) - by age					
• Under 30	-	-	44	7	0.9%
• 30-39	-	-	1,052	143	18.5%
• 40-49	-	-	2,531	367	47.5%
• Over 50	-	-	1,911	773	33.1%
Senior Management - by nationality					
• Thai	-	-	-	73	46.5%
• Indonesian	-	-	-	28	17.8%
• Chinese	-	-	-	26	16.6%
• Australian	-	-	-	19	12.1%
• Mongolian	-	-	-	2	1.3%
• Japanese	-	-	-	5	3.2%
• Vietnamese	-	-	-	2	1.3%
• American ^(b)	-	-	-	2	1.3%
• Others	-	-	-	0	0.0%
Senior Management - by gender					
• Male	-	-	-	135	86.5%
• Female	-	-	-	21	13.5%

^(a) Number of persons at year end

^(b) Includes thermal power business only

^(c) Includes middle and senior managements

FEMALE EMPLOYEE

	2020	2021	2022	2023	
				Person	%
%Female - by business					
• All business	-	14.8%	14.5%	851	14.9%
• Revenue-generating business	-	-	-	675	11.8%
• Enabling functions	-	-	-	176	3.1%
• STEM-related positions ^(a)	-	-	-	237	4.2%
%Female - by level					
• Total management ^(b)	27.2%	26.2%	28.1%	223	28.8%
• Senior management	-	-	16.1%	21	13.5%
• Middle management	-	-	30.6%	202	32.7%
• Junior management	-	-	24.6%	227	21.3%
• Staff and supervisor	-	-	8.3%	401	10.4%

^(a) Science, technology, engineering and mathematics

^(b) Includes middle and senior managements

NEW EMPLOYEE

	2020	2021	2022	2023	
				Person	%
Total employees	168	299	1,020	553	9.7%
New employee - by age					
• Under 30	-	-	-	212	31.0%
• 30-39	-	-	-	218	11.3%
• 40-49	-	-	-	79	4.1%
• Over 50	-	-	-	43	3.8%
New employee - by gender					
• Male	115	249	871	460	9.5%
• Female	53	50	149	93	10.9%
New employee - by nationality					
• Thai	53	52	164	106	15.2%
• Indonesian	9	56	613	115	5.2%
• Chinese	62	44	70	78	8.2%
• Australian	33	135	155	239	13.7%
• Mongolian	2	2	0	4	7.5%
• Japanese	4	6	9	3	13.0%
• Vietnamese	5	3	7	4	33.3%
• American ^(a)	-	1	2	2	40.0%
• Others	-	-	-	2	25.0%

^(a) Includes thermal power business only

LOCAL EMPLOYMENT^(a)

	2020	2021	2022	2023
Local employment (all levels)				
• Thailand	-	98.7%	97.9%	87.1%
• Indonesia	-	97.7%	97.7%	99.9%
• China	-	99.0%	99.4%	99.8%
• Australia	-	99.8%	99.5%	99.4%
• Mongolia	-	90.7%	92.6%	98.1%
• Japan	-	77.8%	66.7%	95.7%
• Vietnam	-	66.7%	78.6%	100%
• The U.S. ^(b)	-	0%	20.0%	100%
Local employment (senior management level)				
• Thailand	-	94.1%	91.8%	58.9%
• Indonesia	-	100%	59.1%	100%
• China	-	25.0%	57.1%	96.2%
• Australia	-	80.0%	90.0%	89.5%
• Mongolia	-	0%	33.3%	100%
• Japan	-	100%	80.0%	80.0%
• Vietnam	-	0%	50.0%	100%
• The U.S. ^(b)	-	100%	0%	0%

^(a) Born and live in that particular country

^(b) Includes thermal power business only

EMPLOYEE PERFORMANCE REVIEW

	2020	2021	2022	2023	
				Person	Rate
Coverage of employees with regular performance review - by level				5,704	100%
• Senior management	-	-	-	156	100%
• Middle management	-	-	-	617	100%
• Junior management	-	-	-	1,064	100%
• Staff and supervisor	-	-	-	3,867	100%
Coverage of employees with regular performance review - by gender					
• Male	-	-	-	4,853	100%
• Female	-	-	-	851	100%

REMUNERATION

	2020		2021		2022		2023	
	Base salary	Total remuneration	Base salary	Total remuneration	Base salary	Total remuneration	Base salary	Total remuneration
Female to male base salary ratio - Group level	-	-	-	-	-	-	0.46	0.60
• Senior and middle management	-	-	-	-	-	-	0.55	0.64
• Junior management	-	-	-	-	-	-	0.46	0.63
• Staff and supervisor	-	-	-	-	-	-	0.38	0.44
Female to male base salary ratio - Thailand	-	-	-	-	-	-	0.59	0.60
• Senior and middle management	-	-	-	-	-	-	0.55	0.56
• Junior management	-	-	-	-	-	-	0.75	0.75
• Staff and supervisor	-	-	-	-	-	-	1.16	1.12
Female to male base salary ratio - Indonesia	-	-	-	-	-	-	6.89	6.96
• Senior and middle management	-	-	-	-	-	-	5.91	6.36
• Junior management	-	-	-	-	-	-	1.67	0.88
• Staff and supervisor	-	-	-	-	-	-	9.58	9.66
Female to male base salary ratio - China	-	-	-	-	-	-	1.17	1.09
• Senior and middle management	-	-	-	-	-	-	1.10	0.98
• Junior management	-	-	-	-	-	-	1.19	1.09
• Staff and supervisor	-	-	-	-	-	-	0.92	0.94
Female to male base salary ratio - Australia	-	-	-	-	-	-	1.06	1.08
• Senior and middle management	-	-	-	-	-	-	0.72	0.76
• Junior management	-	-	-	-	-	-	2.40	2.13
• Staff and supervisor	-	-	-	-	-	-	0.83	0.78
Female to male base salary ratio - The U.S.	-	-	-	-	-	-	1.18	1.19
• Senior and middle management	-	-	-	-	-	-	NA ^(a)	NA ^(a)
• Junior management	-	-	-	-	-	-	0.83	0.91
• Staff and supervisor	-	-	-	-	-	-	NA ^(a)	NA ^(a)

^(a) No female employees

EMPLOYEE TURNOVER

	2020	2021	2022	2023	
				Person	Rate
Total turnover	13.9%	7.3%	5.7%	2,332	40.9%
Voluntary turnover	5.8%	4.3%	4.0%	1,768	31.0%
Turnover - by country					
• Thailand	8.1%	8.7%	11.5%	190	27.3%
• Indonesia	21.1%	5.3%	1.2%	1,202	54.4%
• China	5.3%	6.6%	5.2%	136	14.2%
• Australia	10.5%	9.2%	10.0%	739	42.5%
• Mongolia	5.6%	8.1%	15.0%	41	77.4%
• Japan	9.1%	55.6%	13.5%	16	69.6%
• Vietnam	0%	33.3%	36.1%	8	66.7%
• The U.S. ^(a)	-	-	-	0	0
Turnover - by age					
• Under 30	-	-	0.8%	202	29.6%
• 30-39	-	-	2.0%	901	46.6%
• 40-49	-	-	0.9%	691	35.7%
• Over 50	-	-	1.9%	538	46.6%
Turnover - by gender					
• Male	-	-	4.6%	2,028	41.8%
• Female	-	-	1.1%	304	35.7%
Turnover - by level					
• Senior management	-	-	0.2%	11	7.1%
• Middle management	-	-	0.8%	127	20.6%
• Junior management	-	-	0.9%	568	53.4%
• Staff and supervisor	-	-	3.7%	1,626	42.0%

^(a) Includes thermal power business only

PARENTAL LEAVE

	2020	2021	2022	2023
Employee that were entitled to parental leave	5,482	5,488	5,538	5,704
• Male	-	-	-	851
• Female	-	-	-	4,853
Employee that take parental leave	146	143	58	62
• Male	-	-	-	30
• Female	-	-	-	32
Employee that returned to work in the reporting period	-	-	-	53
• Male	-	-	-	22
• Female	-	-	-	31
Employee that returned to work after the reporting period	-	-	-	5
• Male	-	-	-	4
• Female	-	-	-	1

COLLECTIVE BARGAINING AGREEMENTS

	2020	2021	2022	2023	
				Person	%
Employee who are members of labor unions ^(a)	-	-	-	3,439	60%
Employee covered by collective bargaining agreements	58%	72%	65%	4,911	86%

^(a) There are labor unions in Indonesia and Australia only

EMPLOYEE ENGAGEMENT

	2020	2021	2022	2023
Employee engagement level	76%	74%	79%	78%
• Thailand	69%	69%	72%	70%
• Indonesia	73%	73%	79%	79%
• China	92%	93%	96%	91%
• Australia	-	40%	49%	73%
• Mongolia	52%	50%	52%	63%
• Japan	38%	31%	47%	65%
• Vietnam	-	-	82%	86%

CORPORATE CULTURE

	2020	2021	2022	2023
Level of alignment between employee behavior and the corporate culture	75%	78%	79%	80%
• Thailand	72%	73%	78%	78%
• Indonesia	71%	73%	75%	78%
• China	94%	95%	92%	91%
• Australia	66%	72%	75%	87%
• Mongolia	78%	75%	69%	75%
• Japan	56%	57%	72%	67%
• Vietnam	-	-	67%	70%

HUMAN CAPITAL DEVELOPMENT

	2020	2021	2022	2023
Proportion of open positions filled by internal candidates	-	29%	26%	25%
Proportion of high critical positions with successor identified	63%	79%	57%	84%
Proportion of employees with individual development plan	57%	56%	70%	70%
Employee attending leadership development programs (cumulative)	763	817	919	1,024
Employee attending leadership development programs (annual)				
• Business leader	0	0	28	0
• First line leader	26	26	28	35
• Future leader ^(a)	27	28	29	30
• Engaging leader ^(a)	17	0	17	40
Success of leadership development programs ^(b)				
• Business leader	87%	87%	92%	98%
• First line leader	82%	84%	86%	74%
• Future leader ^(a)	94%	82%	86%	77%
• Engaging leader ^(a)	90%	90%	90%	91%

^(a) Data covers only employee in Thailand

^(b) % Applied learning according to the program evaluation

TRAINING^(a)

	2020	2021	2022	2023
Average cost of training - by nationality (USD)	-	-	568	1,379
• Thai	1,115	850	940	8,576
• Indonesian	47	115	194	519
• Chinese	271	227	209	231
• Australian	1,865	1,100	1,157	1,186
• Mongolian	5	111	100	77
• Japanese	-	-	-	8,973
• Vietnamese	-	-	-	410
• American	-	-	-	-
• Other ^(b)	-	-	-	-
Average cost of training - by level (USD)				
• Senior management	2,402	620	2,092	18,838
• Middle management	771	735	871	3,223
• Junior management	643	629	546	1,034
• Staff and supervisor	951	458	568	502
Average cost of training - by program (USD)				
• Technical/functional	-	-	414	528
• Leadership	-	-	154	850
Average hours of training - by nationality	-	-	22.9	31.4
• Thai	21.0	29.7	24.3	44.1
• Indonesian	7.5	9.4	14.1	19.6
• Chinese	35.0	28.5	36.9	49.9
• Australian	27.0	25.0	25.4	41.2
• Mongolian	4.6	14.0	12.0	1.8
• Japanese	-	-	-	46.6
• Vietnamese	-	-	-	30.3
• American	-	-	-	-
• Other ^(b)	-	-	-	-
Average hours of training - by level				
• Senior management	27.2	11.6	22.7	53.0
• Middle management	18.0	19.1	23.4	37.4
• Junior management	24.1	20.6	19.7	27.2
• Staff and supervisor	24.9	21.1	23.7	30.7
Average hours of training - by program				
• Technical/functional	-	-	18.0	20.0
• Leadership	-	-	4.9	11.4

^(a) Average by number of persons at year end

^(b) Includes Singapore, Japan and Lao PDR

OCCUPATIONAL HEALTH & SAFETY

	2020 ^(c)		2021 ^(c)		2022 ^(d)		2023	
	Employee	Contractor	Employee	Contractor	Employee	Contractor	Employee	Contractor
Total number of workers ^(a)	18,478		21,841		31,949		25,353	
	5,028	13,450	4,781	17,060	5,238	26,711	5,477	19,876
Number of hours worked	56,995,326		54,207,231		52,144,381		56,720,971	
	9,696,278	47,299,048	9,080,183	45,127,048	9,562,762	42,581,619	10,287,000	46,433,972
Workers covered by OHS management system	18,439		21,841		21,731		25,163	
	4,989	13,450	4,781	17,060	5,238	16,493	5,287	19,876
Coverage of workers covered by OHS management system	100%		100%		68%		99%	
	99%	100%	100%	100%	100%	62%	97%	100%
Workers covered by OHS management system that has been internally audited	17,335		20,055		17,746		18,874	
	4,045	13,290	4,244	15,811	4,321	13,425	4,256	14,618
Coverage of workers covered by OHS management system that has been internally audited	94%		92%		56%		74%	
	80%	99%	89%	93%	82%	50%	78%	74%
Workers covered by OHS management system that has been audited or certified by third-party	13,125		12,359		13,660		12,114	
	2,143	10,982	2,043	10,316	2,203	11,457	2,179	9,935
Coverage of workers covered by OHS management system that has been audited or certified by third-party	71%		57%		43%		48%	
	43%	82%	43%	60%	42%	43%	40%	50%
Number of fatalities from work-related injury	0		1		1		1	
	0	0	0	1	1	0	0	1
Fatality rate (person/million man-hour)	0.00		0.02		0.02		0.02	
	0.00	0.00	0.00	0.02	0.10	0.00	0.00	0.02
Number of recordable work-related injuries	201		168		161		191	
	164	37	145	23	133	28	161	30
Total recordable injury frequency rate (TRIFR) (person/million man-hour)	3.53		3.10		3.09		3.37	
	16.91	0.78	15.97	0.51	13.91	0.66	15.65	0.65
Number of lost time injury	39		22		32		26	
	29	10	17	5	23	9	16	10
Lost time injury frequency rate (LTIFR) (person/million man-hour)	0.68		0.41		0.61		0.46	
	2.99	0.21	1.87	0.11	2.41	0.21	1.56	0.22
Number of high-consequence work-related injuries	1		2		1		2	
	0	1	2	0	0	1	0	2
High-consequence work-related injury frequency rate (person/million man-hour)	0.02		0.04		0.02		0.04	
	0.00	0.02	0.22	0.00	0.00	0.02	0.00	0.04
Tier-1 process safety event ^(b)	2		2		2		4	
Tier-1 process safety event rate ^(b) (case/million man-hour)	0.04		0.04		0.04		0.07	
Number of fatalities as a result of work-related ill health	0		0		0		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	0	0	0
Number of lost day	1,627		7,055		7,067		6,814	
	758	869	948	6,107	6,850	217	313	6,501

^(a) Number of persons at year end

^(b) Refers to internal definition with criteria such as fatality, catastrophic damage to ecosystems, or property damage >100,000 USD

^(c) Excludes employees & contractors of renewable power business in Japan, Vietnam, and Australia

^(d) Excludes employees & contractors of renewable power business in Japan and Vietnam

COMMUNITY ENGAGEMENT

	2020		2021		2022		2023	
	Operation	Project	Operation	Project	Operation	Project	Operation	Project
Total number of business units	-	-	-	-	21	8	43	8
Social Impact Assessment (SIA)								
• Proportion of business units with SIA	-	-	-	-	67%	63%	42%	100%
• Proportion of business units with SIA report publicly disclosed	-	-	-	-	33%	25%	16%	50%
• Number of business units with significant actual and potential negative impacts	-	-	-	-	1	0	1	0
Community Consultation (CC)								
• Number of operations required CC	-	-	-	-	17	2	21	7
• Proportion of operations required CC	-	-	-	-	81%	25%	49%	88%
• Proportion of operations with CC committee	-	-	-	-	48%	38%	33%	75%
• Proportion of operations with CC committee that includes vulnerable groups	-	-	-	-	48%	38%	33%	75%
• Number of CC committee meetings	-	-	-	-	44	0	52	3
Community complaints								
• Total number of significant issues	-	-	-	-	3	-	0	0
• Proportion of issues resolved through dispute mechanism	-	-	-	-	33% ^(c)	-	NA ^(a)	NA ^(a)
• Total number of significant complaints	-	-	-	-	97	-	0	0
• Proportion of complaints resolved through dispute mechanism	100%	-	NA ^(a)	-	92% ^(c)	-	NA ^(a)	NA ^(a)
Community engagement								
• Proportion of operations with stakeholder mapping	-	-	-	-	81%	-	49%	75%
• Proportion of operations with stakeholder engagement plans	-	-	-	-	81%	-	49%	75%
• Proportion of operations with community perception surveys	-	-	-	-	48%	-	23%	0%
• Community perception level	-	-	-	-	Satisfied	-	Satisfied	NA ^(d)
• Proportion of operations with formal local community dispute mechanism	-	-	-	-	100%	-	100%	100%
Community development ^(b)								
• Proportion of operations with community development programs	-	-	-	-	57%	-	28%	-
• Proportion of annual stakeholder satisfaction survey	-	-	-	-	50%	-	12%	-
• Average stakeholder satisfaction level	78%	-	76%	-	85%	-	83% ^(e)	-

^(a) No significant complaints

^(b) There are community development activities at mining business in Indonesia and renewable power business in China only

^(c) Completely resolved in 2023

^(d) No perception survey conducted

^(e) Only for mining business in Indonesia

INDIGENOUS PEOPLES

	2020	2021	2022	2023
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

	2020	2021	2022	2023
Number of resettlements	0	0	0	0
Number of people physically or economically displaced and compensation	-	-	-	0
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

HUMAN RIGHTS

	2020	2021	2022	2023
Coverage of business units assessed for human rights risks ^(a)	92%	86%	98%	77%
Number of operations assessed for human rights risks ^(a)				
• Thailand	1	1	1	1
• Indonesia	5	5	5	5
• China	10	10	10	10
• Australia	5	5	5	0
• Japan	12	15	12	12
• Vietnam	0	0	0	2
• The U.S.	0	0	0	0
Coverage of operations assessed for human rights risks ^(a)				
• Thailand	100%	100%	100%	100%
• Indonesia	100%	100%	100%	100%
• China	100%	100%	100%	100%
• Australia	100%	100%	100%	0%
• Japan	100%	100%	100%	100%
• Vietnam	0%	0%	0%	100%
• The U.S.	0%	0%	0%	0%
Coverage of business units with risk management plans ^(b)	NA ^(c)	NA ^(c)	NA ^(c)	100%
Number of significant human rights incidents	0	0	0	0
• Forced labor	0	0	0	0
• Human trafficking	0	0	0	0
• Child labor	0	0	0	0
• Freedom of association	0	0	0	0
• Right to collective bargaining	0	0	0	0
• Equal remuneration	0	0	0	0
• Discrimination and harassment	0	0	0	0
• Others	0	0	0	0
Proportion of significant human rights complaints resolved through a dispute mechanism	NA ^(d)	NA ^(d)	NA ^(d)	NA ^(d)

^(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

MINE CLOSURE

	2020	2021	2022	2023
Number of mines				
• Mining phase	12	12	9	10
• Care & maintenance status	-	-	2	2
• Mine closure phase	8	7	14	14
• Post closure phase	-	-	-	-
Mine closure plan				
• Number of mines with mine closure plan	20	19	19	20
• Proportion of mines with mine closure plan	100%	100%	100%	77%
Progress of revegetation against plan ^(a)	91%	100%	98%	114%
Progress of mine closure activity against plan ^(b)	100%	100%	96%	100%
Disturbed area (hectare)				
• Total land own at year end	92,775	92,775	93,106	93,106
• Total disturbed area at year end	20,748	25,283	23,946	28,712
• Newly disturbed area during the year	1,154	557	680	659
Rehabilitated area (hectare)				
• Total rehabilitated area at year end	13,189	14,841	14,272	14,750
• Newly rehabilitated area during the year	733	825	699	362
• Total area disturbed and not yet rehabilitated	7,559	10,443	9,674	13,962
Progress of land management				
• Total disturbed area to total land own	22%	27%	26%	31%
• Total rehabilitated area to total disturbed area	64%	59%	60%	51%

^(a) For open-pit mine only

^(b) For underground mine only

SDGs CONTRIBUTION MATRIX

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

- Direct Contribution
- Indirect Contribution

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GRI INDEX

Statement of use

Banpu has reported reference with GRI standards for the period January 1st to December 31st 2023

NA: Not Applicable:

IU: Information unavailable/incomplete:

GRI 1 used

GRI 1: Foundation 2021

Applicable GRI Sector Standard (s)

Coal Sector

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308: Supplier Environmental Assessment 2016	308-1	New suppliers that were screened using environmental criteria		-	a	IU	In process of development and will be disclosed in SD Report 2025	
	308-2	Negative environmental impacts in the supply chain and actions taken		-	a, b, c, d, e	IU	In process of development and will be disclosed in SD Report 2025	
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	In process of development and will be disclosed in SD Report 2025	
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					Requirement	Reason	Details	
Reliability of Power Plants								
Electric Utilities	3-3	Management of material topics		52				
	EU11	Average generation efficiency of thermal plants by energy source and by regulatory regime		106				
	EU30	Average plant availability factor by energy source and by regulatory regime		106				
Business Continuity								
	3-3	Management of material topics		53				
Compliance								
	3-3	Management of material topics		48				
		Critical incidents	12.13.3	107				
Risk Management								
	3-3	Management of material topics		38				
Data Privacy & Cybersecurity								
	3-3	Management of material topics		37				
GHG Emissions								
305: Emissions 2016	3-3	Management of material topics	12.2.1	56				
	305-1	Direct (Scope 1) GHG emissions	12.1.5	109			Data excluded e-mobility business because data is under standardization and will be disclosed in SD Report 2025.	
	305-2	Energy indirect (Scope 2) GHG emissions		109	b	NA	Data excluded e-mobility business because data is under standardization and will be disclosed in SD Report 2025.	
	305-3	Other indirect (Scope 3) GHG emissions		109	b,c,d,e	IU	Include emissions from Coal Sold of Mining business in Indonesia and Australia and Scope 3 emission from cloud platform leasing of Mining business in Indonesia & Australia, and Banpu NEXT & Banpu Corporate in Thailand. Other data will be disclosed in SD report 2025.	
	305-4	GHG emissions intensity		57, 109			Data excluded e-mobility business because data is under standardization and will be disclosed in SD Report 2025.	
	305-5	Reduction of GHG emissions	12.2.3 12.2.4	-	a,b,c,d,e	IU	In process of development and will be disclosed in SD Report 2024	
Energy								
302: Energy 2016	3-3	Management of material topics		60				
	302-1	Energy consumption within the organization		109			Data excluded e-mobility business because data is under standardization and will be disclosed in SD Report 2025.	
	302-2	Energy consumption outside of the organization		-	a,b,c	NA		
	302-3	Energy intensity		61, 109			Data excluded e-mobility business because data is under standardization and will be disclosed in SD Report 2025.	
	302-4	Reduction of energy consumption		-	a,b,c,d	IU	In process of development and will be disclosed in SD Report 2024	
	302-5	Reductions in energy requirements of products and services		-	a,b,c	IU	In process of development and will be disclosed in SD Report 2025	

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	68				
	305-6	Emissions of ozone-depleting substances (ODS)		112			Included mining business in Indonesia only	Yes
	305-7	Nitrogen oxides (NO _x), sulfur oxides (SO _x), and other significant air emissions	12.4.2	112			Mining business: NO _x and PM emitted from non-point source are excluded and will be disclosed in SD Report 2024. Power business: non-point source is not significant for power business. PM emitted from point source will be disclosed in SD Report 2026.	
Waste								
306: Waste 2020	3-3	Management of material topics	12.13.1	64-65				
	306-1	Waste generation and significant waste-related impacts	12.6.2	64				Yes
	306-2	Management of significant waste-related impacts	12.6.3	64				Yes
	306-3	Waste generated	12.6.4	111				Yes
	306-4	Waste diverted from disposal	12.6.5	111				Yes
	306-5	Waste directed to disposal	12.6.6	111				Yes
		Tailings facilities	12.13.4	111				
Biodiversity								
304: Biodiversity 2016	3-3	Management of material topics	12.5.1	66				
	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	108				
	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	-	a,b,c,d	IU	In process of development and will be disclosed in SD Report 2025	
	304-4	IUCN Red List species and national conservation list species with habitats in areas affected by operations	12.5.5	67				
Water								
303: Water and Effluents 2018	3-3	Management of material topics	12.7.1	62				
	303-1	Interactions with water as a shared resource	12.7.2	62				Yes
	303-2	Management of water discharge related impacts	12.7.3	62				Yes
	303-3	Water withdrawal	12.7.4	110				Yes
	303-4	Water discharge	12.7.5	110			Pollutant load for Centennial are not available and will be disclosed in SD Report 2024	Yes
	303-5	Water consumption	12.7.6	110				Yes
Mine Subsidence								
	3-3	Management of material topics		69, 112				

GRI Standards	Disclosure		Sector	Page	Omission			External Assurance
					Requirement	Reason	Details	
Employee Engagement								
202: Market Presence 2016	3-3	Management of material topics	12.15.1	72				
	202-1	Ratios of standard entry level wage by gender compared to local minimum wage	12.19.1	-	a,b,c,d	IU	In process of development and will be disclosed in SD Report 2025	
	202-2	Proportion of senior management hired from the local community	12.19.2	114				
401: Employment 2016	401-1	New employee hires and employee turnover	12.15.2	114-115				
	401-2	Benefits provided to full-time employees that are not provided to temporary or part-time employees	12.15.3	74				
	401-3	Parental leave	12.15.4 12.19.4	116				
402: Labor/ Management Relations 2016	402-1	Minimum notice periods regarding operational changes	12.3.2 12.15.5	-	a, b	IU		
405: Diversity and Equal Opportunity 2016	405-1	Diversity of governance bodies and employees	12.19.6	113				
	405-2	Ratio of basic salary and remuneration of women to men	12.9.7	115				
Human Capital Development								
404: Training and Education 2016	3-3	Management of material topics		76				
	404-1	Average hours of training per year per employee	12.15.6 12.19.5	117				
	404-2	Programs for upgrading employee skills and transition assistance programs	12.3.3 12.15.7	77-79				
	404-3	Percentage of employees receiving regular performance and career development reviews		114				
Occupational Health & Safety								
403: Occupational Health & Safety 2018	3-3	Management of material topics	12.14.1	80				Yes
	403-1	Occupational health and safety management system	12.14.2	80				Yes
	403-2	Hazard identification, risk assessment, and incident investigation	12.14.3	80			Information available on website	Yes
	403-3	Occupational health services	12.14.4	80			Information available on website	Yes
	403-4	Worker participation, consultation, and communication on occupational health and safety	12.14.5	80, 83			Information available on website	Yes
	403-5	Worker training on occupational health and safety	12.14.6	80, 83			Information available on website	Yes
	403-6	Promotion of worker health	12.14.7	80			Information available on website	Yes
	403-7	Prevention and mitigation of occupational health and safety impacts directly linked by business relationships	12.14.8	80			Information available on website	Yes
	403-8	Workers covered by an occupational health and safety management system	12.14.9	80			Information available on website	Yes
	403-9	Work-related injuries	12.14.10	118				Yes
	403-10	Work-related ill health	12.14.11	118				

GRI Standards	Disclosure		Sector	Page	Omission			External Assurance
					Requirement	Reason	Details	
Human Rights								
406: Non-discrimination 2016	3-3	Management of material topics	12.12.1 12.16.1 12.17.1	84				
	406-1	Incidents of discrimination and corrective actions taken	12.19.8	85, 120				
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	120				
408: Child Labor 2016	408-1	Operations and suppliers at significant risk for incidents of child labor	12.16.2	120				
409: Forced or Compulsory Labor 2016	409-1	Operations and suppliers at significant risk for incidents of forced or compulsory labor	12.17.2	85, 120				
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 2025	
Community Engagement								
413: Local Communities 2016	3-3	Management of material topics	12.9.1 12.10.1 12.10.2 12.11.1	86				
	413-1	Operations with local community engagement, impact assessments, and development programs	12.9.2	119				
	413-2	Operations with significant actual and potential negative impacts on local communities	12.9.3 12.9.4	119				
	EU22	Number of people physically or economically displaced and compensation, broken down by type of project		119				
	411-1	Incidents of violations involving rights of indigenous peoples	12.11.2 12.11.3 12.11.4	119				
Mine Closure								
	3-3	Management of material topics	12.3.1	92				
		Closure and rehabilitation	12.3.4 12.3.5 12.3.6	-	12.3.4 12.3.5 12.3.6	IU	In process of development and will be disclosed in SD Report 2026	

REPORT ASSURANCE



LRQA Independent Assurance Statement Relating to Banpu Public Company Limited's Sustainability Report for the calendar year 2023

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 2023 ("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 303-1 Interactions with water as a shared resource (2018)⁽²⁾
 - GRI 303-2 Management of water discharge-related impacts (2018)⁽²⁾
 - GRI 303-3 Water withdrawal (2018)⁽²⁾
 - GRI 303-4 Water discharge (2018)⁽²⁾
 - GRI 303-5 Water consumption (2018)⁽²⁾
 - GRI 305-6 Emissions of ozone-depleting substances (ODS) (2016)⁽³⁾
 - GRI 306-1 Waste generation and significant waste-related impacts (2020)⁽⁴⁾
 - GRI 306-2 Management of significant waste related impacts (2020)⁽⁴⁾
 - 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 reporting boundary excludes the business entities where Banpu holds less than 50 percent of either direct or indirect investment and does not directly participate in their management; in other words, only supervised through their Board of Directors. Examples of such entities are mining business in China and thermal power business in Thailand and Lao PDR. Banpu's reporting boundary also excludes business entities where Banpu holds a greater than 50% of shares and has management control, but the data collection system is under standardization i.e. Durapower, the energy storage system business in China.
2. Banpu's reporting boundary and our scope of verification for water includes mining business in Indonesia and Australia; gas business in USA, thermal power business in China & in USA; renewable power business in China, Japan, Vietnam and Australia.
3. Reporting boundary for emissions of ODS includes mining business in Indonesia only.
4. Banpu's reporting boundary and our scope of verification for waste includes mining business in Indonesia and Australia; gas business in USA, thermal power business in China & in USA; renewable power business in China, Japan, Vietnam and Australia, solar rooftop and floating business in Thailand, and smart city and energy management business in Thailand. Whereas reporting boundary of waste in Japan's renewable business covers only management approach (i.e. performance data is excluded).
5. Banpu's reporting boundary and our scope of verification for occupational health and safety data includes mining business in Indonesia, Australia and Mongolia; gas business in USA, thermal power business in China & in USA; renewable power business in China, Japan, Vietnam and Australia; solar rooftop and floating business in Thailand; and smart city and energy management business in Thailand.

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

^a <https://www.accountability.org/>

^b <https://www.globalreporting.org/>

^c GHG quantification is subject to inherent uncertainty.



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, except for some omissions in the reported data. However, the omission, and the reason for omission, is 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.
- 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 Banpu's Health, Safety, Environmental and Community Engagement Division team, who is responsible for identifying stakeholder groups and the processes for stakeholder engagement.
- Reviewing documents and associated records i.e. Banpu stakeholder engagement survey and its summary & analysis results.
- 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 researching the global focus of sustainability issues within Banpu's relevant business sector, as well as 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 onsite for a selection of Banpu's subsidiary companies (i.e. Luannan Thermal Power Plant and Deyuan Solar Farm in China, PT Trubaindo Coal Mining (TCM) in Indonesia and Mandalong Coal Mine in Australia).
- Verifying data and information remotely, via online meetings, for a selection of Banpu's subsidiary companies' (i.e. Temple I and Temple II natural gas-based power plant of Thermal Power Business in the USA, and Nepa & Barnette site of Gas Business in the USA, and Nhanhai Solar Farm (LCE-NH) of Renewable Business in Vietnam).
- 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 stakeholders.
However, instead of engaging with stakeholders through a questionnaire used solely for the purpose of this Sustainability Report, Banpu should also collect and analyse data which is continuously coming in via other engagement forums, such as focus groups, advisory meetings, seminars, etc., within each Business unit. These additional forums would ensure that stakeholder views and expectations are complete and representative of each and every Business unit.
- **Materiality:**
Banpu has established criteria for determining which issue is material by considering stakeholders' views and expectations, as well as global sustainability trends, and peers' sustainability strategies. These material issues have then been prioritised, used to set strategy, and influenced performance disclosures.



However, additional clarity on impact assessment criteria, thresholds and measures used in determining materiality would help reduce the potential for inconsistency in results due to variability in interpretation/judgement when applying these criteria.

- **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. This will add to Banpu's responsiveness in addressing water related impacts.
- **Impact:**
Banpu has monitored, measured and been accountable for how their actions affect the broader ecosystems, as related to their material issues.
- **Reliability:**
Data management systems are established and centralised for the collection and calculation of data associated with the selected performance indicators.
However, more vigorous and systematic internal verification by each Business unit, and at the corporate level, will improve the reliability of reported data and information. Effectively this should prevent inconsistencies within data related to:
 - employees' man-hours in Monica IT system, finger scan and HR database of ITM (Coal Mining Business in Indonesia)
 - waste generated and especially general wastes and food waste of ITM (Coal Mining Business in Indonesia).

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 Hengsrirawat
LRQA Lead Verifier

Dated: 10 April 2024

On behalf of LRQA Group Limited.
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LRQA reference: BGK00001007

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FEEDBACK SURVEY



Please provide your feedback by scanning the QR Code or sending an email to sustainability@banpu.co.th

1. Which of the following groups best describes you?

- | | | | |
|--|--|--|--|
| <input type="radio"/> Employee | <input type="radio"/> Customer | <input type="radio"/> Supplier | <input type="radio"/> Contractor |
| <input type="radio"/> Business partner | <input type="radio"/> Shareholder | <input type="radio"/> Financial capital provider | <input type="radio"/> Government and regulator |
| <input type="radio"/> Investor | <input type="radio"/> Investment analyst | <input type="radio"/> Media | <input type="radio"/> NGOs |
| <input type="radio"/> Academic institution | <input type="radio"/> Community | | |

2. How did you receive this report?

- ☐ Annual general meeting ☐ Company's website ☐ Company's employee ☐ Seminar
☐ Other (Please specify.....)

3. What is your reason for reading this report?

- ☐ To acknowledge the Company's business ☐ To get information for investment decision-making
☐ For research and education purposes ☐ For sustainability report preparation guideline
☐ Other (Please specify.....)

4. Which section in the report interests you the most?

- ☐ About Banpu ☐ Governance ☐ Environment ☐ Social
☐ Additional information

5. Are there any additional topic(s) that report should be covered?

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6. Satisfaction on the Sustainability Report 2023

- | | | | | |
|--------------------------------------|----------------------------|------------------------------|---------------------------|--|
| Appropriate and complete content | <input type="radio"/> High | <input type="radio"/> Medium | <input type="radio"/> Low | <input type="radio"/> Need improvement |
| Content easy to understand | <input type="radio"/> High | <input type="radio"/> Medium | <input type="radio"/> Low | <input type="radio"/> Need improvement |
| Attractive and aesthetic infographic | <input type="radio"/> High | <input type="radio"/> Medium | <input type="radio"/> Low | <input type="radio"/> Need improvement |
| Overall satisfaction | <input type="radio"/> High | <input type="radio"/> Medium | <input type="radio"/> Low | <input type="radio"/> Need improvement |

7. Additional suggestions or comments for improving the sustainability report

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Thank you for your opinion and feedback.



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Sustainability
Report 2023