BANPU

SMARTER ENERGY FOR SUSTAINABILITY

SUSTAINABILITY REPORT 2021

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

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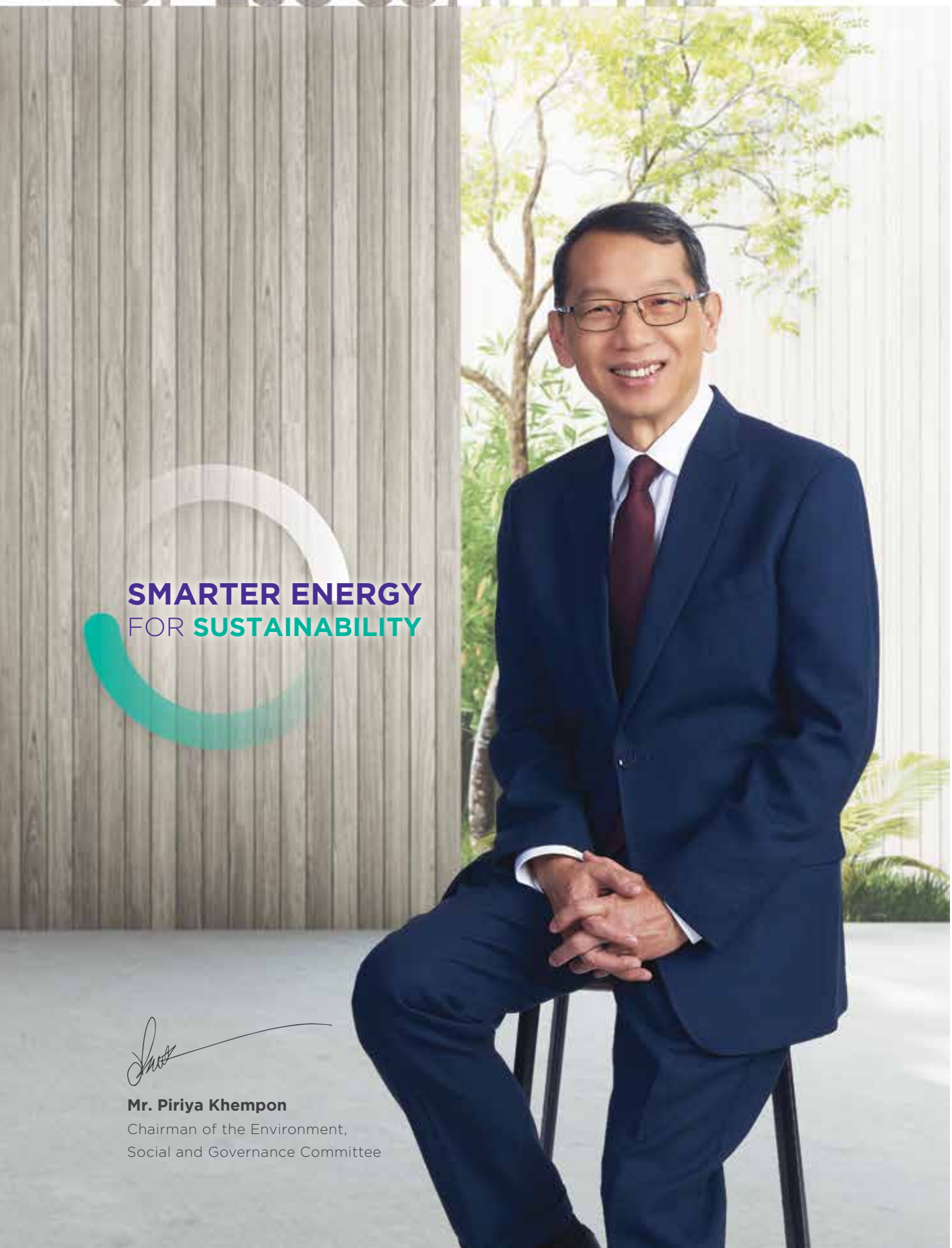
MESSAGE FROM CHAIRMAN OF ESG COMMITTEE



SMARTER ENERGY FOR SUSTAINABILITY

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

With the Company's commitment to growing business with sustainable value creation to all stakeholders, the Environment, Social and Governance Committee (ESG Committee) has been established to support the Board of Directors in overseeing the Company's ESG-related issues. All members of the ESG Committee are independent directors to ensure clarity, neutrality and the utmost benefits to the Company, shareholders and all stakeholders. One of the ESG Committee's roles are to be a radar in assessing the global trends and steer the Company in the right direction. The committee is responsible for recommending relevant ESG strategies, overseeing ESG-related policies, targets and practices, and governing the public disclosure of information in relation to ESG matters. While working closely with the management, ESG Committee is also reviewing and monitoring ESG risks and stakeholder engagement process.

As a leading international versatile energy provider, Banpu is always well prepared for any challenges presented by any global crises, mega-trends, or evolving stakeholder expectations. With a clear direction on embracing ESG best practices and the global trends, short- and long-term risk assessments including mitigations are in place. Concrete actions have been taken covering the following three aspects.

Environmental: The Company puts a priority on GHG emissions, energy, water, and air emissions. With the Greener & Smarter strategy, GHG emissions reduction initiatives and additional investment in renewable and cleaner energy are strengthening
in response to climate change. In addition, the Company has sought new business opportunities that will better address future energy demands and trends. By 2025, more than 50 percent of EBITDA will be contributed from the greener energy and energy technology businesses. The Decarbonization Working Group was established to seek opportunities toward Net Zero. Moreover, a long-term biodiversity project was initiated and launched in Indonesia, an area with high biodiversity.

Social: In addition to community development, Banpu is dedicated to health & safety and systematic human capital development. The corporate culture "Banpu Heart" bridges the immensely diverse multicultural workforce in the ten countries where Banpu operates, empowering the employees to drive their mutual sustainability goals under the ESG principle. The Company also supports various philanthropic activities, including educational promotion and assistance in crisis & disaster relief efforts. Since the outbreak of COVID-19 pandemic in Thailand, Banpu has been working closely with Mitr Phol Group in establishing the "Mitr Phol-Banpu Solidarity to Aid Thailand on COVID-19 Confrontation Endowment" with THB 1,000 million in funding to help people affected by COVID-19.

Governance: Banpu has strictly adopted the code of business ethics, transparent & fair treatment with business partners, data privacy & cybersecurity, business continuity, and digital transformation by establishing the Digital Center of Excellence (DCOE).

All the actions taken have earned Banpu strong recognition from many leading global sustainability organizations as appears throughout this report.

On behalf of the ESG Committee, I would like to thank all parties for their support and contribution to Banpu's sustainability journey. I strongly believe that the Board of Directors, ESG Committee and the management will successfully work together to drive the Company toward business and sustainability goals.

MESSAGE FROM CEO

SMARTER ENERGY FOR SUSTAINABILITY

Somruedee Chaimongkol
Chief Executive Officer and
Chairman of the Sustainability Committee

As a leading international versatile energy provider, Banpu has adopted a 'Greener & Smarter' strategy designed to achieve a rapid transition to a more sustainable business with balancing between conventional energy with lower GHG emissions and cutting-edge clean energy technologies. In the meantime, Banpu continuously seeks new opportunities and made some decisive moves to accelerate this transition to deliver "Smarter Energy for Sustainability" through our three core business groups:

- **Energy Sources:** Focus on GHG emissions reduction through various initiatives, process improvement through digital technology & cost optimization, and seeking investment opportunities in the related midstream business along the value chain.

- **Energy Generation:** Emphasis on maintaining excellence of reliability while seeking opportunities to invest in greener energy such as gas and renewable energy. The Company is expanding into new markets with high growth, such as renewable power with 2 new solar farms in Australia, the Integrated Coal Gasification Combined Cycle (IGCC) plant in Japan, and the Combined Cycle Gas Turbines (CCGT) plant in the U.S.

- **Energy Technology:** Scale-up energy technology ecosystem through product and service development, such as energy storage system business, and e-mobility platform under the Mobility-as-a-Service (MaaS) concept. The Company has also expanded the customer base to new business sectors, such as acquiring ENGIE Services (Thailand) Co., Ltd. to enhance the energy management market.

As a member of the United Nations Global Compact (UNGC), we are committed to the Ten Principles of the UNGC. To ensure building sustainable value for all stakeholders, Banpu established the Environment, Social and Governance Committee (ESG Committee) to support the Board of Directors in overseeing ESG-related issues and cooperate with the management and Sustainability Committee in driving towards sustainability targets. The ESG Committee comprises 3 independent directors who are professionals in various fields of knowledge and expertise.

With the COVID-19 pandemic continuing to have a wide impact on all sectors, Banpu and Mitr Phol Group have continued the "Mitr Phol-Banpu Solidarity to Aid Thailand on COVID-19 Confrontation Endowment" by adding another THB 500 million, bringing the total budget for the mission to THB 1,000 million. Under this fund, the Company focuses on helping people affected by economic difficulties as well as providing medical equipment. This mission will continue until the situation is resumed.

In the past year, the Company announced additional long-term ESG targets corresponding to the UN Sustainable Development Goals (SDGs) with focus on seven Goals that are directly related to the business, such as Goal 7: Affordable and clean energy, Goal 13: Climate action, and Goal 15: Life on land. The Company's strategy is aligned with the COP26 and supports the global community in handling climate change in all countries in which Banpu operates. The Company has set a target to continuously reduce greenhouse gases, from lower GHG of existing operations and expansion of clean energy portfolio. The Company has planned to disclose the first "Climate Change Report", aligning with TCFD in 2023.

In 2021, the Company achieved most of the ESG targets, such as 3% reduction of energy consumption intensity, employee engagement level at 74% and lost time injury frequency rate of employees at 1.87. However, some targets have not yet been achieved, for example, a contractor fatality, lower-than-expected GHG emissions intensity reduction and a significant environmental incident. The related action plans are being reviewed to ensure long-term target achievement.

Transparency in ESG information disclosure is one of the Company's priorities as evidenced by the recognition from related parties such as Silver Class in the Asia's Best SDG Reporting 2020 from Asia Sustainability Reporting Awards and the Silver Award from Global Corporate Sustainability Awards in 2021 presented by the Taiwan Institute for Sustainable Energy (TAISE). To confirm the reliability of ESG information for stakeholders, this Sustainability Report has been audited by an external party for the 5th consecutive year. Scope included energy, GHG emissions, air emissions, water, waste, and occupational health and safety.

With accomplishment of these commitments in business operations and ESG targets, Banpu has been recognized as one of the sustainability leaders by both Thai and international organizations, namely:

- Maintaining membership in the Dow Jones Sustainability Indices (DJSI) for the 8th consecutive year
- Rated A (on the scale of AAA to CCC) in the MSCI ESG Ratings assessment
- Recognized as one of the top 100 Best Emerging Market Performers for having outstanding ESG performance by Vigeo Eiris (V.E), a part of Moody's ESG Solutions
- Achieved Sustainability Awards of Honor in the Sustainability Excellence for the 4th consecutive year at SET Awards 2021
- Maintaining one of the companies in the Thailand Sustainability Investment (THSI) list for the 7th consecutive year
- Maintaining one of the top listed companies with excellent corporate governance scoring according to the Corporate Governance Report of Thai Listed Companies

Finally, on behalf of the management and the Sustainability Committee, I wish to express sincere thanks to all stakeholders for the trust and support given to the Company. I firmly believe that the clear Sustainable Policy and strong corporate culture are a solid foundation in driving Banpu to deliver "Smarter Energy for Sustainability" for all.

ABOUT THIS REPORT

Banpu published a sustainability report annually, which contains a comprehensive overview of the Company's sustainability performance in the aspects related to environmental, social and governance. This report has been prepared in accordance with the GRI Standards: Core option with additional indicators from the G4 mining and metals sector disclosures and the G4 electric utilities sector disclosures. This report demonstrates the Company's commitment in response to the Sustainable Development Goals (SDGs) and the United Nations Global Compact (UNGC) as well as the needs and expectations of stakeholders.

REPORTING BOUNDARY

This report covers performance from 1st January to 31st December 2021 in the business entities in which Banpu holds a greater than 50% of total shares and has management control. These entities include mining business in Indonesia, Australia and Mongolia, thermal power business in China, renewable power business in China, Japan, Vietnam and Australia, solar rooftop business in Thailand, gas business in the U.S as well as the head office in Thailand and office in Vietnam. The boundary of this report extended to partially cover data of gas business in the U.S, renewable power business in Vietnam and Australia and the office in Indonesia and Japan. This report covers 30 sustainability topics, including 14 material topics with details available on pages 14-17.

This report excludes 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. Such entities include mining business in China, thermal power business in Thailand and Lao PDR, and energy storage & system business in China. More information on each business is disclosed on pages 102-103.

ASSURANCE

This report was assured by an external party that it was prepared in accordance with the GRI Standards: Core option. In 2021, the assurance scope extended to cover the performance of air emissions and waste of mining business in Indonesia and Australia. In summary, the scope of assurance is as follows:

- Energy and GHG emissions data of mining business in Indonesia and Australia, thermal power business in China, renewable power business in China, Japan, Vietnam and Australia, and solar rooftop business in Thailand.
- Air emissions and waste data of mining business in Indonesia and Australia, thermal power business in China, and renewable power business in China and Japan.
- Water data of thermal power business in China and renewable power business in China and Japan.
- Occupational health and safety data of mining business in Indonesia, Australia, and Mongolia, thermal power business in China, renewable power business in China and Japan, solar rooftop business in Thailand, and

CONTACT DETAILS

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OUR BUSINESS

BUSINESS STRATEGY IN 2021–2025

Banpu transformation will propel the Company's sustainable growth in line with the Greener & Smarter strategy across all business groups. It will also enable the Company to fulfill the 2025 target to achieve more than 50% of total EBITDA from greener energy and energy technology businesses and effectively deliver "Smarter Energy for Sustainability" to all stakeholders.

ENERGY RESOURCES

Focus on process improvement through digital technology, cost optimization and pursue investment opportunities in the related midstream business

ENERGY GENERATION

Maintain excellence of reliability while seeking opportunities to invest in greener energy such as gas and renewable energy with focusing on the high-growth regions such as the U.S. and Southeast Asia

ENERGY TECHNOLOGY

Scale-up energy technology ecosystem through product and service development and expand the customer base to new business sectors

ENERGY RESOURCES

	NOW 2021	NEXT 2025
Mining Business	Production Volume 36 Mt	38 Mt
Gas Business	Production Capacity 700 MMcfed	800 MMcfed

ENERGY GENERATION

	NOW 2021	NEXT 2025
Thermal Power Business	Production Capacity 3,244 MW	4,500 MW
Renewable Power Business	Production Capacity 799* MW	1,100 MW

* Information as of 28 February 2022, which includes 50 MW from the purchase and sale agreement to invest in Nhon Hai and Chu Ngoc solar power plants in January 2021, in which transaction will be completed in the second quarter of 2022. In addition, the information excluded 142 MW, an equity-based capacity of Sunseap, as the purchase and sale agreement for divestment of shareholding in Sunseap Group Pte. Ltd. was completed on 22 February 2022.

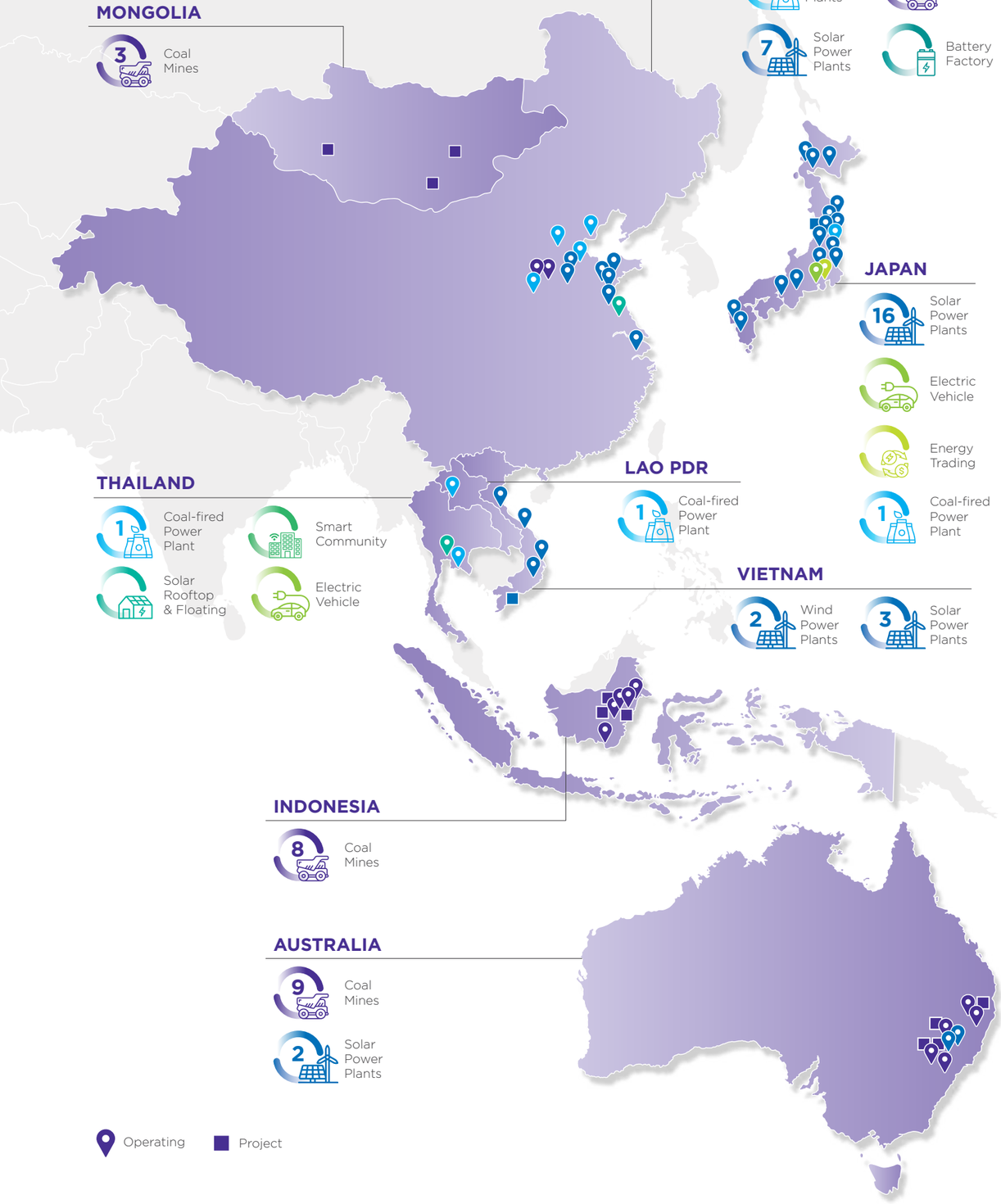
ENERGY TECHNOLOGY

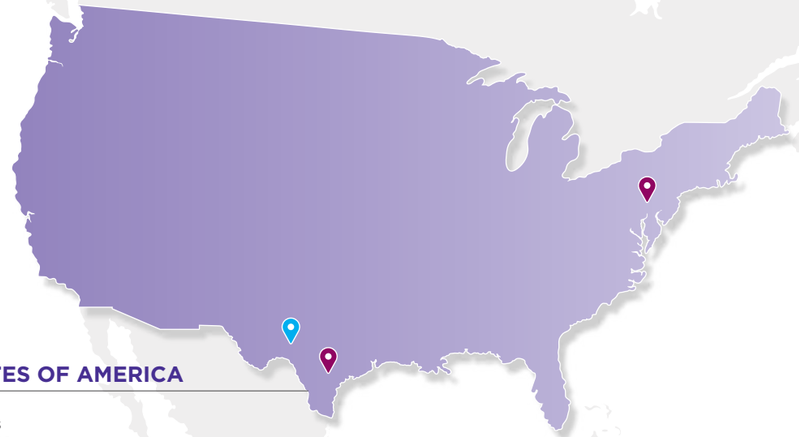
	NOW 2021	NEXT 2025
Solar Rooftop & Floating Business	Production Capacity 37* MW	500 MW

* Information as of 28 February 2022, which excluded 212 MW, an equity-based capacity of Sunseap, as the purchase and sale agreement for divestment of shareholding in Sunseap Group Pte. Ltd. was completed on 22 February 2022.

	NOW 2021	NEXT 2025
Energy Storage & System	Battery Production Capacity 1.0 GWh	3.0 GWh
Smart Community	Number of Projects 20 Projects	30 Projects
Electric Vehicle	Ride-hailing Passengers 2,100 Passengers/Day	430,000 Passengers/Day
	EV under Fleet Management 229 EVs	5,500 EVs
	EV Charging Station 102 Stations	2,000 Stations
	e-Ferry Sold 1 e-Ferry	100 e-Ferries
Energy Trading	Electricity Sale 712 GWh	1,000 GWh

MAP OF OPERATIONS





UNITED STATES OF AMERICA

- 2 Shale Gas Operations
- 1 Coal-fired Power Plant

Banpu is an international versatile energy provider operating in 10 strategic countries across Asia-Pacific. Through the 3 core groups of businesses, Energy Resources, Energy Generation and Energy Technology, Banpu is committed to creating "Smarter Energy for Sustainability" to respond to the stakeholder's expectations toward sustainability.

ENERGY RESOURCES

Mining Business

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

Gas Business

The shale gas production is based in the U.S. in Marcellus shale in Pennsylvania and Barnett shale in Texas. All gas produced is transferred via national gas pipeline network to serve domestic customers.

ENERGY GENERATION

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 and Lao PDR.

Renewable Power Business

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

ENERGY TECHNOLOGY

Solar Rooftop & Floating Business

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

Energy Storage & System

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

Smart Community

The Company offers a variety of smart energy solutions, including smart-ware and digital platform for the community to efficiently utilize clean energy and state-of-the-art technology through services such as smart poles, solar kiosks, and EV charging stations.

Electric Vehicle

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

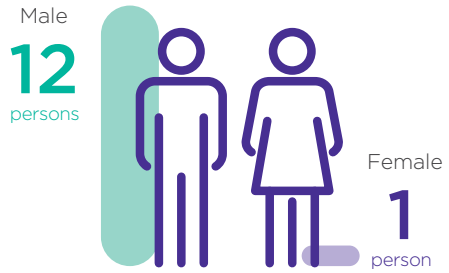
Energy Trading

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

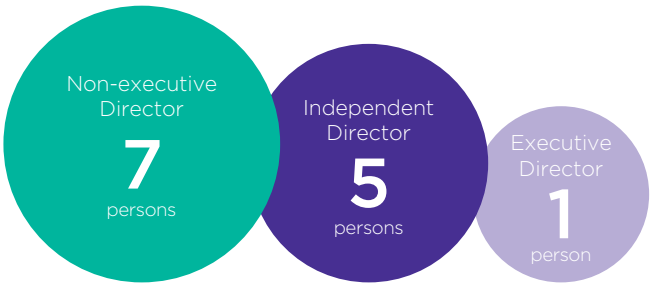
MANAGEMENT STRUCTURE

The Board of Directors of Banpu Public Company Limited is a one-tier system with 4 sub-committees. The Board of Directors is responsible for ensuring that the Company's business operations are compliant with relevant laws, the Company's objectives and regulations, and shareholder resolutions. The Board of Directors' Practice has been formulated and regularly reviewed to ensure good governance.

Gender

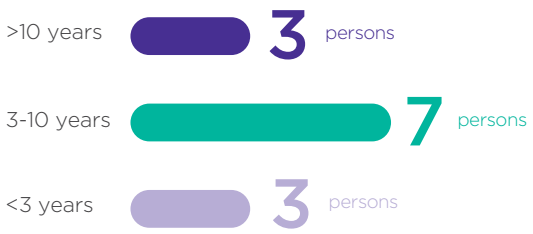


Status



Tenure*

*Average tenure 13.3 years



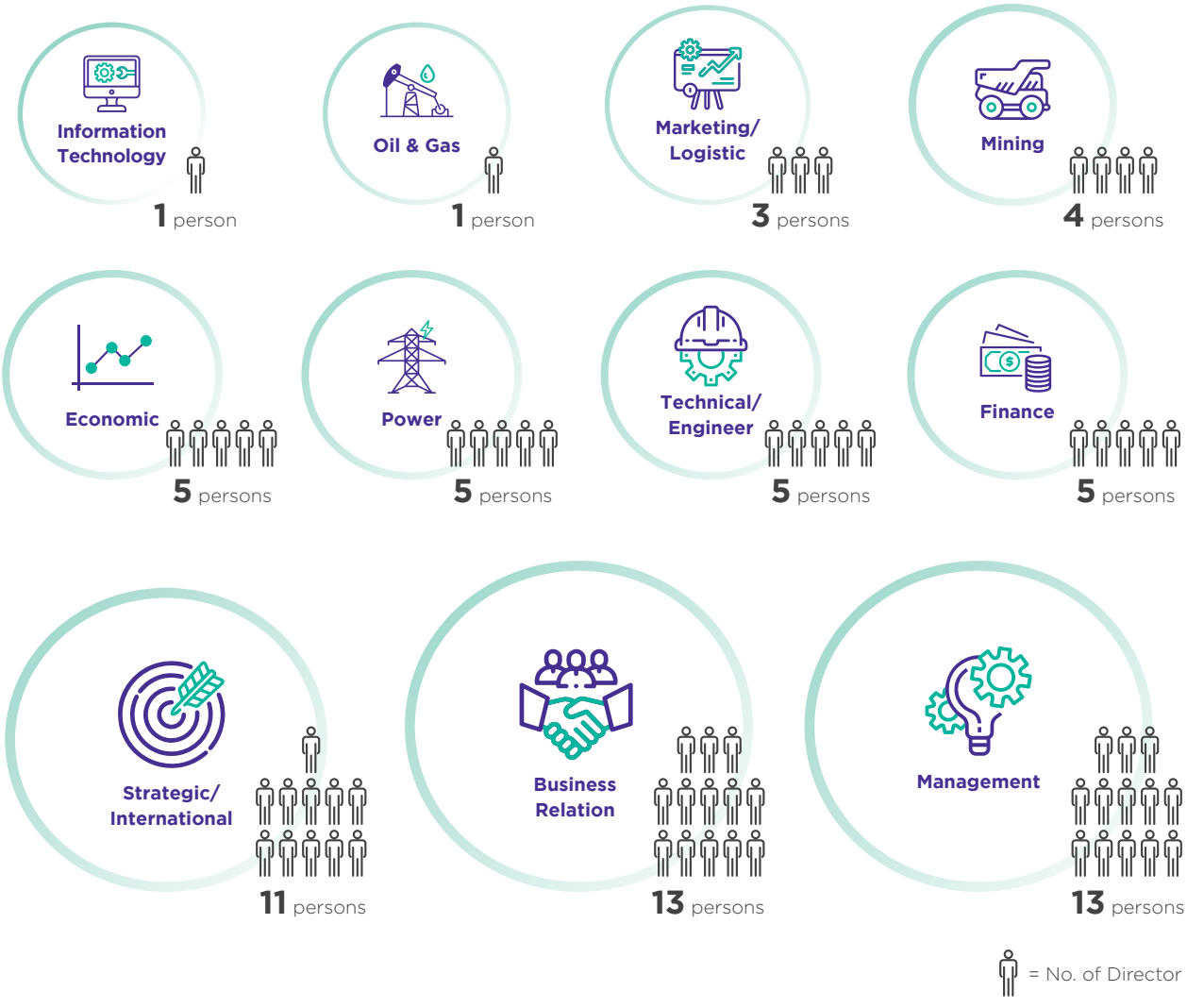
	Member	Role & Responsibility
Corporate Governance and Nomination Committee	1 Independent Director 3 Non-executive Directors	• Review and update the Corporate Governance Policy (CG Policy) and Code of Conduct • Monitor compliance through whistleblower channel • Review the Board's composition and skills matrix • Nominate directors, CEO and senior executives
Audit Committee	3 Independent Directors	• Review the financial reports, the sufficiency of internal control, internal audit, and risk management system, and regulatory compliance • Review the connected transactions or transactions that may lead to conflicts of interests
Compensation Committee	3 Independent Directors 1 Non-executive Director	• Review remuneration, compensation, and benefits of the Board of Directors, sub-committees, and the CEO • Review compensation structure and employee remuneration
ESG Committee	3 Independent Directors	• Oversee the Company's policies and practices, as well as targets and performance with respect to ESG matters • Review and monitor stakeholder engagement and materiality assessment process to ensure that all stakeholders' expectations are properly identified, prioritized, and managed • Review and monitor management practice of major ESG risks to ensure that the effective means are put in place • Oversee the Company's public disclosures in relation to ESG matters

BOARD OF DIRECTORS NOMINATION

The Corporate Governance and Nomination Committee is responsible for setting nomination criteria and reviewing the qualifications of the candidates. In general, the tenure of independent director must not exceed 9 years or 3 consecutive terms, and directors must not hold more than 5 external directorships in other listed companies. Moreover, a number of aspects are taken into consideration when each candidate is assessed, including independence, skill, experience, expertise, gender, nationality, religion and age.

The attributes of the candidates are assessed using the Board Skills Matrix to ensure benefits to the Company and expectations of stakeholders. After the screening process, the Corporate Governance and Nomination Committee will nominate the candidate for the Board's approval to propose the candidate director to be elected by shareholder's approval in the annual general meeting.

BOARD SKILLS MATRIX



BOARD OF DIRECTORS PERFORMANCE EVALUATION

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

STAKEHOLDER AND MATERIALITY MATTERS

STAKEHOLDER ENGAGEMENT

The Company places importance on the opinion of all stakeholders as it helps to strengthen the Company's management efficiency. In considering the issues that stakeholders are interested in, the Company applies the stakeholder analysis standard, which was developed based on the international AA1000 Stakeholder Engagement Standard (AA1000SES). Three principles – inclusivity, materiality, and responsiveness – underpin the stakeholder engagement framework. Results from each business unit are collected and analyzed at corporate level under supervision of the Sustainability Committee and ESG Committee. Details of engagement methods and stakeholder's issues are disclosed on pages 104-105.

More Information

MATERIALITY ASSESSMENT

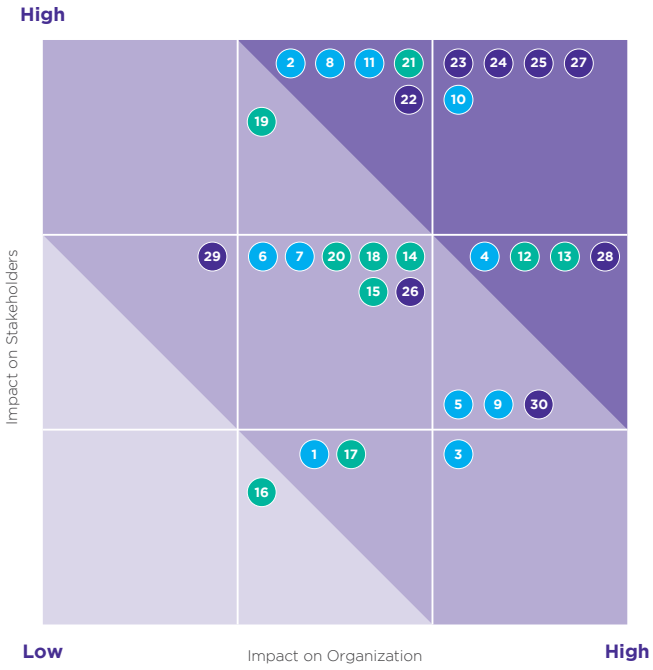
The assessment and prioritization of material topics are carried out through the corporate management standard, which was developed based on the internationally recognized GRI Standards and AA1000 AccountAbility Principles Standard (AA1000APS), while taking into consideration the governance, environment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

More Information

MATERIALITY ASSESSMENT PROCESS

RE-VALIDATION OF MATERIAL TOPICS

In 2021, the Company conducted a materiality assessment by consolidating the assessment results from the mining business in Indonesia and Australia, the global trend, and material topics of peers in related industries, as well as other issues concerned by senior executives in each business unit. The assessment results were reviewed and approved by Sustainability Committee in September 2020. At the same time, topic "Data Privacy & Cybersecurity" was added, and "Corporate Philanthropy" was removed from the materiality matrix. Topic "Specific Waste from Power Plant" was merged with the "Waste" topic. In addition, the topic "Digital Transformation" is renamed to emphasize the current business circumstances. Moreover, the Company considered raising the priority of 4 topics, including Business Continuity Management, Mine Closure, Mine Subsidence, and Corporate Culture, based on their levels of impact on the organization and stakeholders. As a result, the report contents cover 30 topics with 14 material topics.



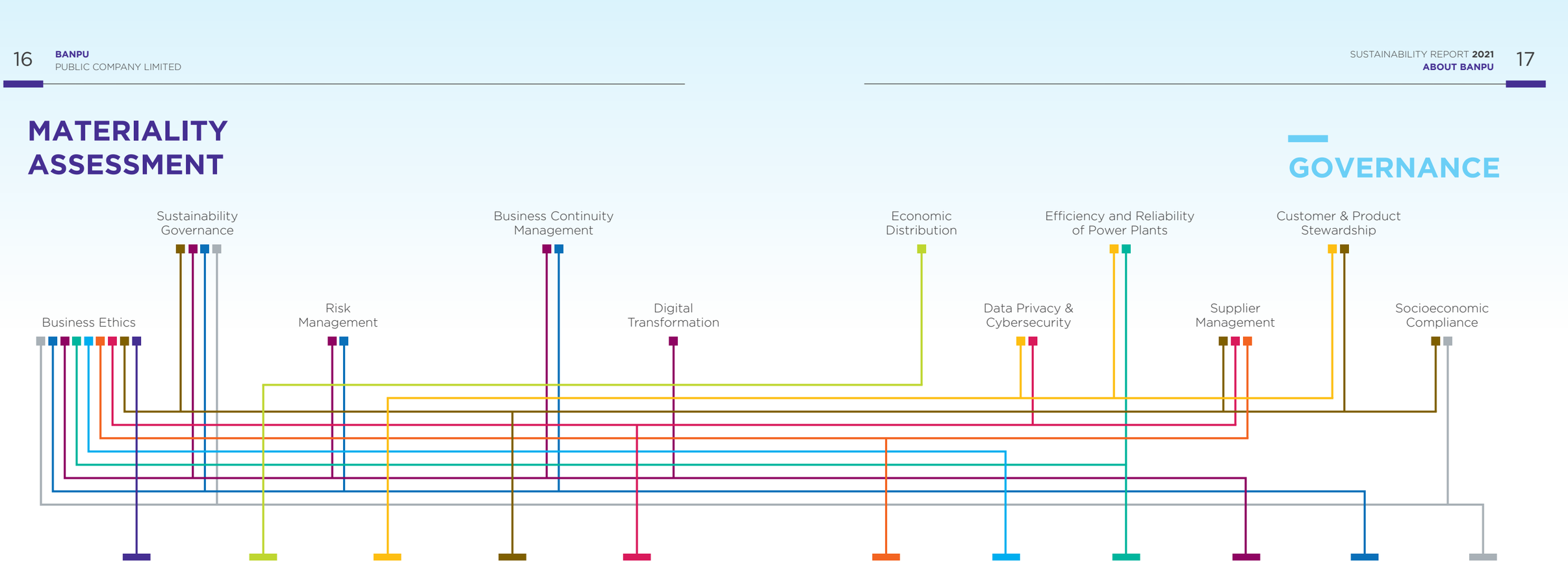
Governance	Environment	Social
1. Sustainability Governance	12. GHG Emissions	22. Employee Management
2. Business Ethics	13. Energy	23. Human Capital Development
3. Digital Transformation	14. Air Emissions	24. Corporate Culture
4. Supplier Management	15. Water	25. Occupational Health & Safety
5. Customer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

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

MATERIALITY ASSESSMENT

GOVERNANCE

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



Employee **Community** **Customer** **Government** **Supplier** **Contractor** **Financial institution** **Business partner** **Shareholder** **Investor** Media and NGOs

Employee Management
Community Engagement
Resettlement
Human Rights
Partnership
GHG Emissions
Air Emissions
Waste
Mine Closure
Banpu and SDGs
Occupational Health & Safety
Community Development
Indigenous Peoples
Human Capital Development
Energy
Water
Biodiversity
Environmental Compliance
Banpu and UN Global Compact

SOCIAL

ENVIRONMENT

SUSTAINABILITY RECOGNITIONS

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

INTERNATIONAL RECOGNITION

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

The Company has been recognized as a member of the Dow Jones Sustainability Indices (DJSI) for the 8th consecutive year.

MSCI ESG RATINGS A
CCC B BB BBB A AA AAA

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

V.E

The Company is recognized as one of the top 100 Best Emerging Market Performers for having outstanding ESG performance by Vigeo Eiris (V.E), a part of Moody's ESG Solutions.

NATIONAL RECOGNITION

THSI THAILAND SUSTAINABILITY INVESTMENT 2021

The Company maintains one of the companies in Thailand Sustainability Investment by the Stock Exchange of Thailand for the 7th consecutive year.

HONOR Sustainability Excellence 2021

The Company achieved Sustainability Awards of Honor in Sustainability Excellence at SET Awards 2021 for the 4th consecutive year.

The Company remains one of the top listed companies with excellent corporate governance scoring according to the Corporate Governance Report of Thai Listed Companies in 2021, developed by The Thai Institute of Directors Association (IOD) with support from the Stock Exchange of Thailand.

VOLUNTARY COMMITMENTS

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

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 guidance 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 2018 respectively. The findings have been used to enhance the Company's environmental management system.

Banpu publishes sustainability reports in accordance with the GRI Standards. The report is also assured by an external party based on GRI Standards: Core option.

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 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.

PARTNERSHIP

For almost four decades, the Company has been guided by ESG principles to create balance between business growth and sustainable value creation to stakeholders. The Company strives to support philanthropic activities, both direct and indirect connection to the business, focusing in 7 areas following the corporate philanthropy policy. The Company does not support activities that are in violation of laws, ethics, those which do not respect the nation or religion and other activities that are inconsistent with the Company's code of conduct.

EDUCATION
Promote sustained learning, including specialized skills & expertise

HEALTH
Prevent or relieve sickness, and promote health & healthy lifestyles

ECONOMIC DEVELOPMENT
Develop potentials in community incomes or job creation

ENVIRONMENT
Support environmental protection and conservation activities

ART AND CULTURE
Protect local cultures and cultural heritage

SOCIAL WELFARE
Promote activities with objective to help in-need individuals in society

EMERGENCY RELIEF
Provide assistance in disaster relief efforts

POWER GREEN CAMP

The Company has partnered with the Faculty of Environment and Resource Studies, Mahidol University, in organizing the "Power Green Camp" since 2006 under the thrust: "Environmental Science: Pathway to Practice". The camp aims to promote knowledge among the youth on environmental science and natural resources, including translating scientific knowledge into practice to address environmental challenges systemically. In 2021, following the impact of the COVID-19 pandemic, the 16th Power Green Camp was held online for the first time, under the theme: "ECO Living & Learning – Adapting towards a green lifestyle, in Readiness for the New Normal". Participating youth were 40 high school students, irrespective of subject stream, selected from 40 schools in 31 provinces. The selection was made by over 200 applicants nationwide. Participants took part in an innovative learning experience every weekend between 16 October and 21 November.

In the camp, youth participants learned approaches to lead daily lives that are friendly to the environment through various topics, both theory and practice. They also received 3 science experiment kits that could be used within their household, worth THB 10,000 per participant. This is to give young people the opportunity to learn from doing. Kits included grease traps, food waste management container, and a soil property test kit. Towards the end of the camp, participants integrated their learning from all activities and created environmental science group projects. They presented those projects to the camp committee and the general public through online channels to chance at a THB 100,000 scholarship award.

All 40 participating youth had increased awareness of environmental challenges and understood the importance of sustainable environmental management. They were also able to apply lessons learned in the camp into their daily life to live in harmony with the environment. At the same time, participants also received soft skill training, such as problem solving, communication, and working with others. Throughout the past 16 years, over 1,000 young people have taken part in the Power Green camp. The camp has also developed young environmental leaders, who served as camp mentors, and are part of an expanding environmental network of 174 people.

CHAMPIONS FOR CHANGE

The "Banpu Champions for Change Project" is a collaboration between Banpu and ChangeFusion, a non-profit organization under the Foundation for Rural Restoration under Royal Patronage. The project started in 2011 to support new generations of social entrepreneurs to grow their business ideas, revenue, and positive impact towards society, community, and environment. This is achieved through promoting greater understanding and knowledge on advancing social endeavors while cultivating morality and ethics in business conduct.

In 2021, the 10th cohorts convened online to select 10 enterprises with clear goals in addressing challenges or improving society, environment and demonstrating business viability. Selected enterprises receive a THB 80,000 grant to support a 3-month operation. Following this, 5 outstanding enterprises that demonstrate growth and tangible, positive, social change will each receive supporting capital of THB 250,000 for the following 6-month operation. A special activity "SE Online Meet-up" is also organized to invite network alumni to share their experiences and offer advice to new entrepreneurs - connecting their work and growing a support network of social entrepreneurs. The project's SE School website also provides an online learning platform that functions as a knowledge repository for an aspiring generation interested in starting a business and the general public. Additionally, the project's impact day activity, under the theme: "Dare for Better Change", supports the social entrepreneurs and their network to introduce enterprises and sell products and services to the general public. The activity also offers those interested in social entrepreneurship the opportunity to educate themselves through interactions with experienced personalities through activities such as special seminars, the introduction of 5 outstanding enterprises in the 10th cohort, and SE Marketplace. These offer consumers the chance to interact with entrepreneurs directly - promote awareness to make social and environmental change.

THAMMASAT-BANPU INNOVATIVE LEARNING PROGRAM

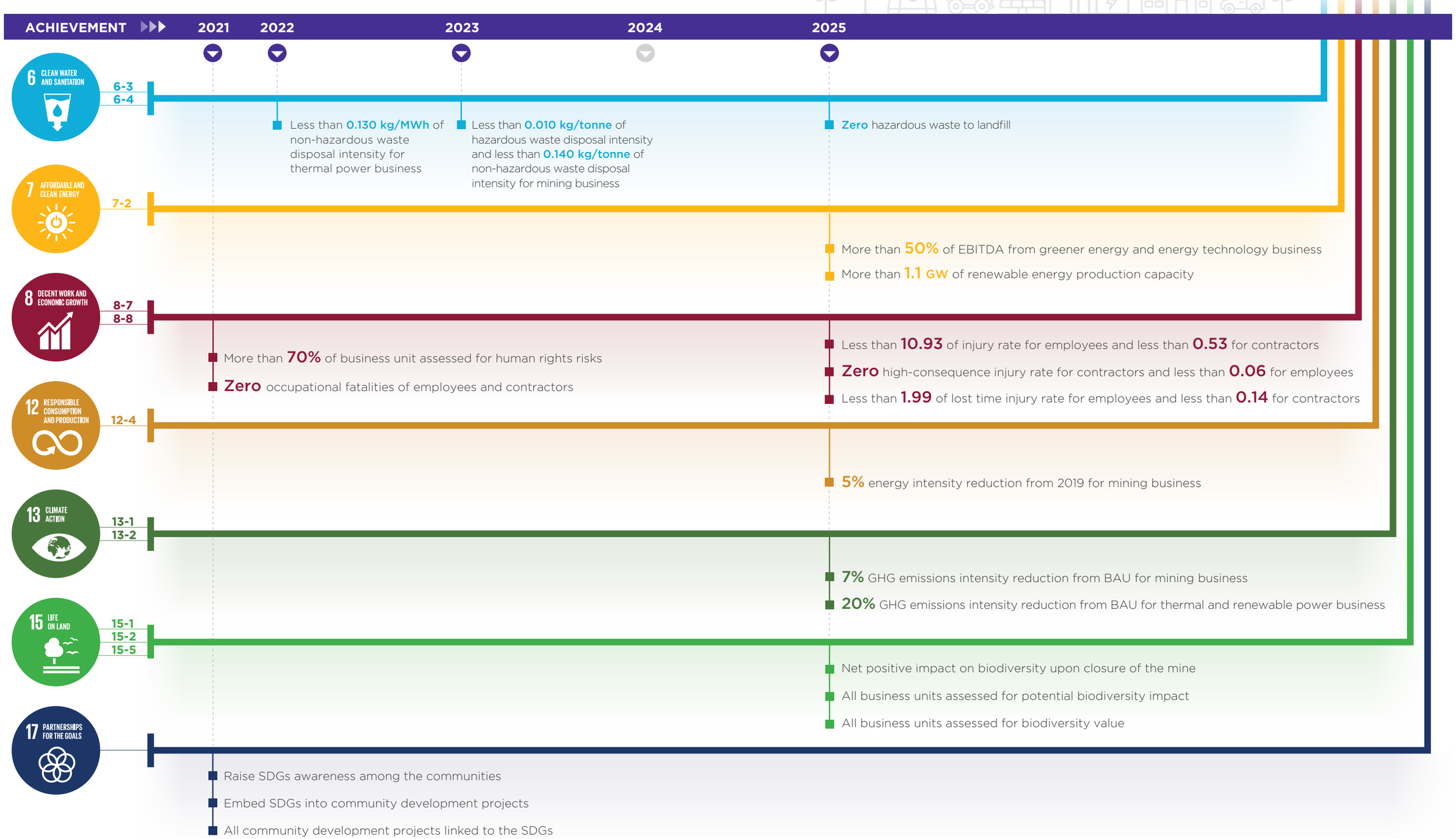
Banpu partnered with the Faculty of Learning Science and Education, Thammasat University, in organizing the "Designing Games - Redesigning Society" project or the "Thammasat-Banpu Innovative Learning Program" to equip students at the high school and vocational levels and teachers with skills that enable new generations of innovators. Skills such as critical thinking, creative thinking and communication, and leadership have been imparted through the "Learning Game" creative process since 2016.

Following conclusion of the 1st cohort in 2019, Banpu continued to support the 2nd cohort (2019-2021) with financial support of THB 8.4 million. This is to incubate 14 youth groups, selected from various schools nationwide, that have demonstrated design thinking skills and are the next generations of innovations. Selection was completed through a board game design process. This is to create change in various social dimensions. In 2021, the final year for the 2nd cohort, each team was able to test their boardgame with their target group to assess its effectiveness. A committee of experts from various fields scored their performance and an award announcement and ceremony was held to present Princess Maha Chakri Sirindhorn, Princess Debaratanarajasuda's royal trophy and other awards. "The Last Hope" team from Watcharawittaya school in Kampangphet province was awarded the royal trophy for their "Survivors from Black Snow" boardgame, which showcased the issue of sugarcane soot removal to raise awareness among farmers and communities on environmental and health management in Kampangphet.

BANPU AND SDGs

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

SUSTAINABLE DEVELOPMENT GOALS



BANPU AND UN GLOBAL COMPACT

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

HUMAN RIGHTS

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

- Respect and comply with local laws and international principles responding to human rights, especially the rights of vulnerable groups, namely children, women, the disabled, indigenous peoples, migrant workers, and the elderly
- Conduct human rights due diligence to access human rights risks in supply chain
- Provide equal opportunity, regardless of race, gender, religion, or nationality
- Provide complaint channels and grievance mechanism

P. 92 Human Rights

LABOR

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

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

P. 92 Human Rights
P. 80 Employee Management

ENVIRONMENT

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

- Comply with environmental regulations as well as actively monitor environmental risks to prevent negative impact
- Manage efficiently use of resources to preserve natural resources, reduce waste disposal and avoid waste to landfill
- Focus on investing in environmentally friendly business such as power plant with High Efficiency, Low Emissions (HELE) technology
- Access biodiversity risk and avoid operating in the area with high biodiversity value or threatened species

P. 69 Waste
P. 72 Biodiversity
P. 76 Environmental Compliance

ANTI-CORRUPTION

PRINCIPLE 10 : Work against corruption

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

P. 34 Business Ethics

OUR RESPONSE TO COVID-19

The Company has closely monitored the COVID-19 situation since its first outbreak and caused serious impact on the global economy across industrial sectors. In response to the crisis, the Company has introduced a COVID-19 management plan covering employees at all business units. The measures include prevention, response, and recovery.

PREVENTION

The Company puts in place clear measures to prevent the spread in all operation sites.

- Encouraging employees to work from home and introducing flexible working hours, where possible
- Ensuring clean zone at all common areas by regular cleaning the touchpoints, screening all persons entering the areas and closely monitoring high-risk groups
- Providing employees the COVID-19 vaccination and insurance
- Raising awareness through iSafety newsletter on personal hygiene, such as physical distancing and face mask wearing

In practice, operations at each country have adopted additional measures depending on their specific situation. In Indonesia and China, staff members are required to live on-site due to restricted travel protocol. Daily Health-check Monitor (DHM) Application was introduced in Indonesia to monitor the risk. In Australia, dedicated workers for each shift were assigned and also third-party visit was limited.

RESPONSE

Response measures are implemented as part of the business continuity plan by the activation of crisis and emergency management teams in each operational level.

- Front-line level - Emergency Response Team (ERT)
- Site level - Emergency Management Team (EMT)
- Country level - Incident Management Team (IMT)
- Corporate level - Crisis Management Team (CMT)

Business units in all countries have activated their IMT in response to COVID-19 situation. From the first outbreak until present, several meetings were regularly arranged to monitor situation and ad-hoc meetings were also held for emerging situation, such as newly reported infected case. In case that the situation is far beyond the scope of IMT, the chairman of IMT in such particular country will report to the CMT for approval of additional measures.

To ensure business continuity under crisis, the Company has prepared supporting facilities, such as online meeting platform, online approval workflow, and electronic payment and reimbursement system, etc.

RECOVERY

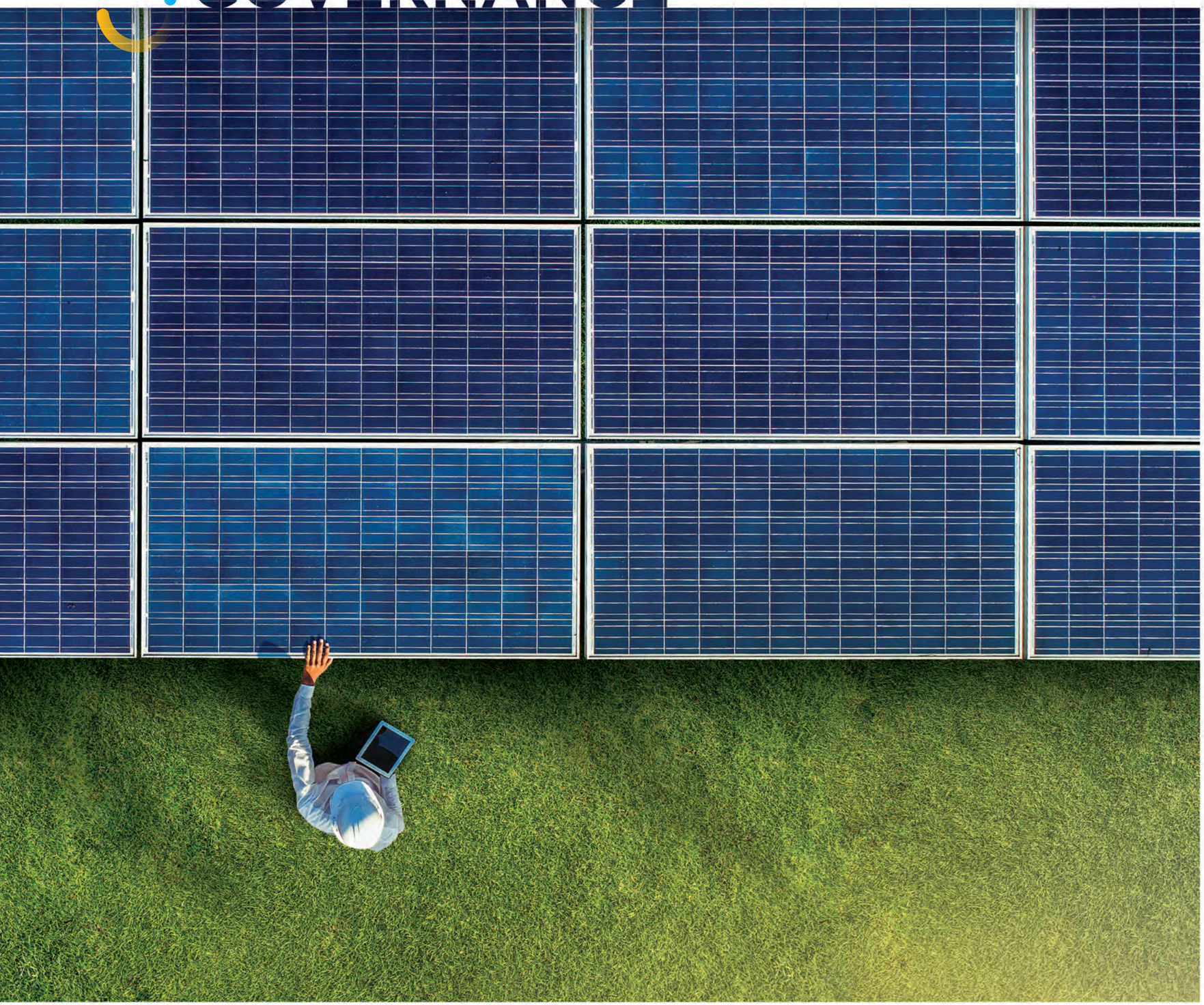
The Company supported all stakeholders to endure the crisis successfully. Internally, employees were encouraged to participate in online activities, such as online exercise, an education program on physical and mental healthcare during work from home, and provision of psychological consultation services. The Company also encourages employees to help other impacted parties through various activities, such as "Banpu Heartwarming Kitchen" which allowed employees to volunteer to support foods to affected communities, both by self-cooking or through local restaurants.

The Company also cooperates with Mitr Phol Group through the "Mitr Phol-Banpu Solidarity to Aid Thailand on COVID-19 Confrontation Endowment". The program was established in March 2020 to deliver necessary medical equipment, such as digital mobile X-ray machines, respirators, and protective equipment for medical personnel. In 2021, when COVID-19 was widespread and had severe impact on all sectors, the "Mitr Phol-Banpu Solidarity to Aid Thailand on COVID-19 Confrontation Endowment" focused its efforts on helping and ensuring the quality of life of people who suffered economic impact from the pandemic.

HUMAN RIGHTS DUE DILIGENCE AND COVID-19 IN INDONESIA

With a strong commitment to operating business without human rights violations throughout the supply chain, in 2021, ITM, a subsidiary in Indonesia, participated in the "Human Rights Due Diligence and COVID-19: Rapid Self-Assessment for Business" or "C19 RSAB", together with 12 other companies from various sectors across Indonesia. The C19 RSAB was organized by the United Nations Development Programme (UNDP) and Foundation for International Human Rights Reporting Standards (FIHRRST) to evaluate and manage human rights impacts resulting from business operations during the COVID-19 context. The assessments covered 6 areas: occupational health and safety, workers' rights, environmental and community impact, privacy protection, protection against discrimination, and management policy and engagement. Assessment results revealed that ITM is conformant with standards on human rights in employment welfare during COVID-19 with no significant human rights risks. Additionally, FIHRRST provided recommendations to ITM to improve its efforts in human rights management.

GOVERNANCE



PERFORMANCE HIGHLIGHT

		2021	Target 2021	Target 2025
Coverage of material ESG aspect embedded in CEO's KPI and deployed to senior management	✓	100%	100%	100%
Proportion of significant corporate governance complaints resolved through a dispute mechanism	✓	100%	100%	100%
Proportion of spending on local suppliers	✓	52%	>50%	>50%
Complaint regarding customer privacy	✓	0	0	0
Complaint regarding safety & environmental issues from the use of products	✓	0	0	0
Ratio of the dividend payout to net profits	✗	27%	≥50%	≥50%
Availability factor of power plant	✓	95%	≥90%	≥90%
Unplanned outage factor of power plant	✓	4.87%	<5%	<5%
Significant socioeconomic non-compliance	✓	0	0	0
Significant fines from socioeconomic non-compliance	✓	0	0	0
Coverage of ESG risk management	✓	94%	≥90%	100%
Coverage of BCP exercise for critical business functions	✓	7%	≥5%	≥64%
Coverage of CMT/IMT Exercise	✓	42%	≥42%	100%
IT and IoT assets securely managed by security operation center	✓	30%	≥30%	-
Cybersecurity & privacy maturity score	✓	2.0	2.0	-
Number of cybersecurity breaches	✓	0	0	-
Number of IT infrastucture incidents	✗	1	0	-

SUSTANABILITY GOVERNANCE

Management Approach

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.

Coverage of material ESG aspects embedded in CEO's KPI and deployed to senior management

2021	Target 2021
100%	100%

PERFORMANCE

The Company has integrated all material ESG aspects into KPIs of the CEO as well as senior executives across all business units. In addition, the performance appraisal of the Board of Directors is held annually, consisting of the performance of the entire group, each sub-committees and individual directors. In 2021, appraisal results were as follows:

ENVIRONMENTAL SOCIAL AND GOVERNANCE COMMITTEE

The Company established the Environmental, Social and Governance Committee (ESG Committee) to support the Board of Directors' ongoing commitment to ESG by fulfilling its oversight responsibilities regarding occupational health and safety, climate change, human rights, cybersecurity, etc. The committee is responsible for recommending relevant ESG strategies, overseeing related policies, targets, practices, reviewing and monitoring ESG risks, stakeholder engagement, including governing the Company's public disclosure in relation to ESG matters. The ESG Committee comprises 3 independent directors who are professionals in various fields of knowledge and expertise and well-positioned to express unbiased and valuable views. The ESG committee supports management team to achieve the balance between financial performance and ESG goals for the utmost benefits of the Company, its shareholders as well as all stakeholders, both in the short-term and the long-term.

	Board of Directors	Corporate Governance and Nomination Committee	Audit Committee	Compensation Committee	ESG Committee
No. of meeting	13	9	9	5	3
Meeting attendance*	99%	100%	100%	100%	100%
Performance**	Group 4.85 Individual 4.67	4.99	4.90	4.70	4.60
Coverage of ESG risks considered by Audit Committee	-	-	100%	-	-
Coverage of ESG topics considered by ESG Committee	-	-	-	-	100%

* Minimum meeting attendance criteria is 50%
** Full appraisal score of 5

SUSTAINABILITY COMMITTEE MEETINGS IN 2021

The Sustainability Committee Meeting is convened twice a year to review the progress of ESG performance against the target. Besides, the global sustainability trends are also highlighted to seek the business impact and opportunities.

	Meeting No. 1 4 March 2021	Meeting No. 2 23 September 2021
Key Agenda	• Review 2020 ESG performance • Review ESG risks • Review progress with the preparation of climate-related information disclosure following TCFD guideline • Consider long-term ESG targets	• Review materiality matrix • Review progress with the preparation of climate-related information disclosure following TCFD guideline • Consider long-term ESG targets
Approval	• Water management policy • 2021-2025 ESG Targets	• 2022 materiality topics • 2021-2025 ESG Targets

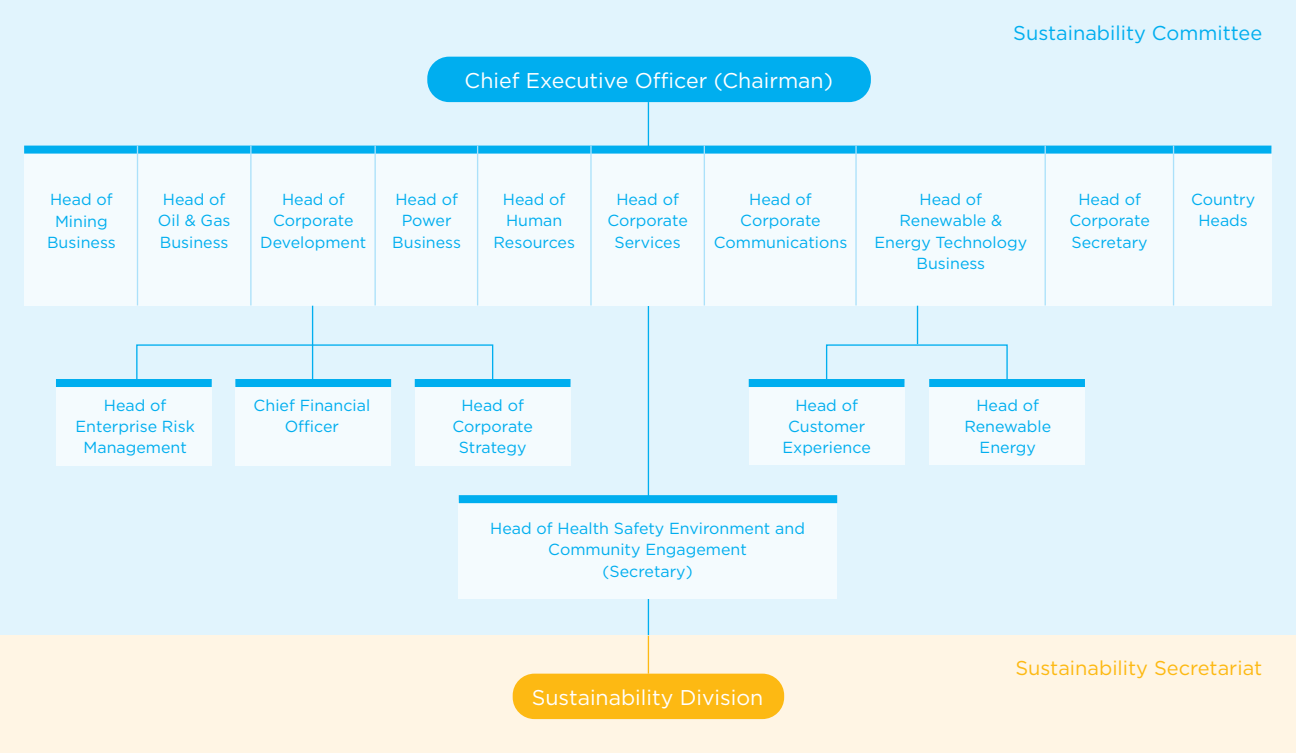
MANAGEMENT APPROACH

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

Sustainability Policy

	Role & Responsibility	Performance Indicator
Board of Directors	• Ensure compliance with related laws and regulations • Determine KPIs and performance appraisal of CEO • Review and monitor significant ESG risks • Review and monitor stakeholder engagement and materiality assessment process	• Meeting attendance • Performance assessment • Coverage of ESG risks considered by Audit Committee • Coverage of ESG topics considered by ESG Committee
Chief Executive Officer (CEO)	• Manage business according to the sustainability policy and integrate ESG strategy into day-to-day business operations • Determine KPIs and performance appraisal of senior executives	• Coverage of material ESG aspects in the corporate targets • Coverage of material ESG aspects in the KPIs of senior executives • Corporate ESG performance
Senior Executives and Heads of Business Unit	• Consider related policies and strategies • Consider results of stakeholder analysis and material topics • Consider global sustainability trend • Monitor sustainability performance of all business units • Strengthen day-to-day operations for achievement of ESG targets	• ESG performance of each business unit

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



COMPETENCY DEVELOPMENT OF THE BOARD OF DIRECTORS

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

Program	Organization	Number of Directors Attending
New Energy Outlook 2020	BloombergNEF (BNEF)	10
ERM Forum "Energy transition towards net - zero"	KPMG	12
Innovation Ecosystem	Ricoh Singapore, Allsense Technology and Chulalongkorn School of Integrated Innovation	7
Corporate Transformation - The Traps	Krungthai Bank	9
PDPA Virtual Sharing	Tilleke & Gibbins International	8
Ethical Leadership Program (ELP) # 22/2021	Thai Institute of Directors	1
Thailand Energy Academy (TEA) No. 16/2021	Thailand Energy Academy	1
The Cooler Earth Sustainability Summit 2021	CIMB Group	1
Cyber Resilience	Bank of Thailand	1
Sustainability Board Training 2021	CIMB Group	1
Director Briefing 2/2021: AGM - Dividend payment and issuance of debentures: What needs to be considered?	Thai Institute of Directors	1
National Director Conference 2021 (NDC 2021) "Leadership behind closed door"	Thai Institute of Directors	1
Deep Dive into Climate Related Disclosures	The Securities and Exchange Commission	1

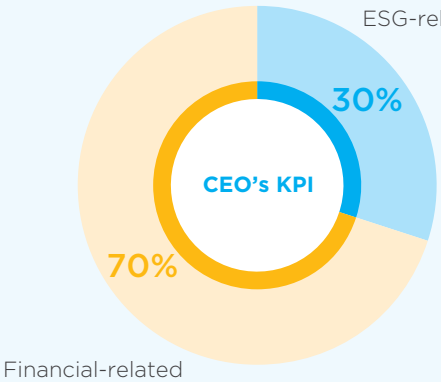
ESG SUMMIT 2021

In 2021, the Company held an ESG-related corporate meeting named "ESG Summit" for the first time. Formerly known as HSEC Summit, the meeting was upgraded to cover more ESG agendas. The ESG Committee, the CEO and the senior executives involved with ESG management from all business units attended the summit with a common goal to strengthen partnership across the group in uplifting ESG management practices.

The ESG Summit 2021 was held on 12 October virtually. Themed "ESG: from Strategy to Action," the summit welcomed 188 participants from Australia, China, Indonesia, Japan, Mongolia, Vietnam, the U.S., and Thailand. The corporate strategy and roadmap to achieve long-term ESG targets of each business unit were announced. In addition, the Company invited experts from Deloitte to share information and knowledge about global ESG trends and ESG management best practices.

SUSTAINABILITY IN PERFORMANCE EVALUATION

CEO's KPIs, approved by the Board of Directors, are tied to the Company's performance, both in terms of financial and ESG aspects. ESG-related KPIs account for 30% of total KPIs. Examples of ESG-related KPIs are employee engagement score, significant corporate governance complaints, cybersecurity incidents, GHG emissions intensity reduction, occupational fatalities, etc. In parallel, the KPIs of senior executives are established with alignment to the KPIs of CEO. The performance of the CEO is reviewed annually by the Board of Directors while the CEO evaluates the performance of senior executives.



Example of ESG-related KPIs	
Environment	• Significant environmental incident • GHG emissions intensity • Air emissions intensity (SO_2 NO_x and TSP) • Water consumption intensity • Hazardous waste to landfill
Social	• Occupational fatality and injury rate • Brand perception • Stakeholder relationships • Corporate citizenships • Significant complaints (in community, resettlement, human rights, indigenous peoples' rights) • Level of employee engagement • Proportion of high critical positions with successor identified
Governance	• Significant corporate governance complaints • Complaints regarding customer privacy • Complaints regarding safety & environmental issues from the use of products • Cybersecurity incident • Local procurement

Example of Financial-related KPIs	
Performance	• Net Profit After Tax: NPAT • Total Shareholder Return: TSR • Average IRR spread • Net D/E
Strategy	• TRIS Rating • Renewable power production capacity • Business impact value from digital initiatives • Efficiency and reliability of power plants

16 PEACE, JUSTICE AND STRONG INSTITUTIONS

BUSINESS ETHICS

Management Approach

Business ethics is a material issue interested by all stakeholders. Operating the business without adhering to ethical practices may result in damage to the reputation of the Company and stakeholders' confidence. Upholding business ethics is therefore, the cornerstone of any business operations.

Number of significant corporate governance complaints

2021	Target 2021
2	0

Proportion of significant corporate governance complaints resolved through a dispute mechanism

2021	Target 2021
100%	100%

PERFORMANCE

In 2021, the Company reviewed and announced the new Corporate Governance Policy and Code of Conduct. To comply with the Corporate Governance Principle of Thai listed companies 2017 issued by the Securities and Exchange Commission, 2 key improvement points were added, including the CEO's directorship in other companies, and the time frame for silent period and for reporting of changes in securities holding of directors and executives. In addition, the Company has improved the Anti-corruption Policy by referring to the guideline of Thailand Private Sector Collective Action against Corruption (CAC).

In adhering to business ethics, the Company has renewed its membership in CAC for the second term, each last for three years. Moreover, the Company remains one of the top listed companies with excellent CG scoring according to the 2021 Corporate Governance Report of Thai Listed Companies. In 2021, the Company received 2 significant corporate governance complaints. Both complaints are about a breach of the Code of Conduct. However, all of which have been investigated and completely dissolved.

CG DAY 2021

Annually the Company arranges an event named "CG Day" to promote employee awareness of business ethics and emphasize the importance of doing business by adhering to ethical practices. In 2021, the event was held on 18 October under "CG Be My Guest" theme. Working team invited Mr. Chanin Vongkusolkit, Chairman of the Board, to speak on "CG and Organizational Management during COVID-19 period". In addition, employees were invited to participate in the infographic design contest to demonstrate an understanding of corporate governance principles, especially anti-corruption and whistleblower.

CORRUPTION RISK ASSESSMENT

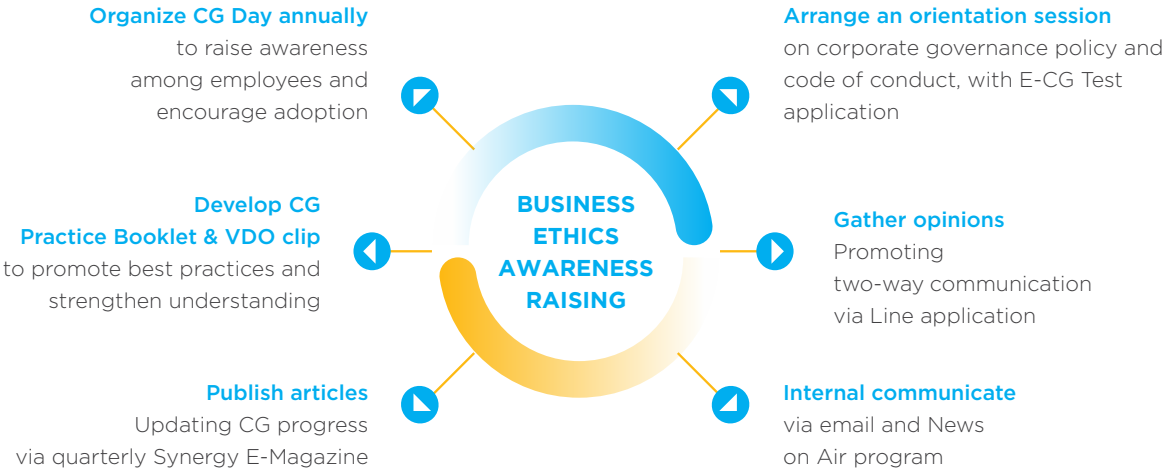
According to the anti-corruption policy, corruption risk related to business operations is assessed and reported to the Audit Committee annually. In the third quarter of last year, the Company assessed corruption risk and reviewed preventive measures of all business units across the group, including subsidiaries and joint ventures.

Anti-Corruption Policy

MANAGEMENT AND ADMINISTRATION DIRECTION

The Company has announced a Corporate Governance Policy and Code of Conduct that aligns with international standards, such as the ASEAN Corporate Governance Scorecard, the Organization for Economic Co-operation and Development (OECD), and the CG principles of Thai listed companies according to the Securities and Exchange Act, the Securities and Exchange Commission, and the Stock Exchange of Thailand. The Company has regularly reviewed the Corporate Governance Policy and Code of Conduct with the latest update in 2021. Awareness of business ethics has been continuously promoted through various activities.

Corporate Governance Policy



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

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

COMPLAINT CHANNELS

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

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

COMPANY WEB PORTAL:
http://portal.banpu.co.th

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

Reporting and Whistleblower Policy

GRIEVANCE MECHANISM

1
Conduct a full investigation in accordance with the guidelines of the Corporate Fraud Management manual once there is sufficient evidence

2
Inform the complainant the investigation outcome through appropriate communication channels

3
Decide what action to take when the allegation was proven

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

8 DECENT WORK AND ECONOMIC GROWTH

DIGITAL TRANSFORMATION

Management Approach

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

Number of use-cases & initiatives

2021	Target 2021
102	15

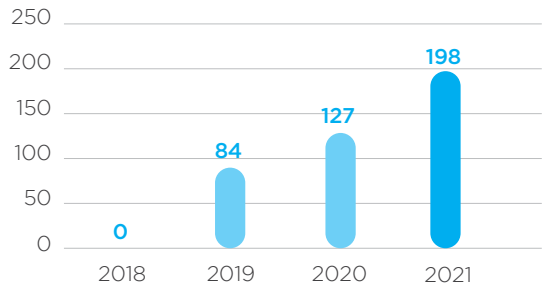
Amount of business impact value (USD million)

2021	Target 2021
71	50

PERFORMANCE

In 2021, there were 102 ongoing projects under development through 5 stages from G1 to G5. The business impact from those projects was significantly increased, with an impact value of USD 71 million. Moreover, the Company also collaborated with over 15 partners in utilizing digital technology in organizational transition.

ACUMULATED AMOUNT OF IMPACT VALUE (USD Million)



MINE OPERATION COLLABORATION APPLICATION (MOCA)

MOCA is an application ideated from the design thinking workshop of employees working with mining contractor management in Indonesia since 2019. The design concept is to utilize application in the daily check-in activity. Instead of using hard copy of checklist, responsible persons use a digital checklist via mobile phone or tablet. This helps employees report daily performance to related functions, as well as onsite staff can promptly submit requests regarding technical issues to experts. This information is directly delivered to the mine management center, comprising various departments, such as Mine Operation, Mine Planning, Geology, Geotech, Safety & Health, and Survey, allowing the issues to be resolved even more swiftly.

With an investment of USD 29,000, MOCA was able to create a business impact to the Company of as much as USD 1.4 million annually. This originated from greater work productivity. Moreover, this strengthens the innovative culture among employees across the group. Additionally, with real-time information, MOCA also enhances data transparency. As of 2021, 2 mines commenced the implementation of MOCA. The Company intends to extend coverage to encompass all mines across Indonesia shortly.

DIGITAL CAPABILITY CENTER

To foster the digital transformation strategy, the Company has established Digital Capability Center (DCC) in 2018 with 4 key objectives: 1) Building awareness and adoption of digital technology by engaging with various partners across the business value chain, 2) Developing digital skills with training courses and promoting internal innovation in the short-term, 3) Showcasing the digital transformation journey, and 4) Unlocking business potential with commercialization. Presently, there are 4 Digital Capability Centers, locating in Thailand, Australia, Indonesia and China.

BANPU DIGITAL ACADEMY

To strengthen digital capacity for all employees, the Company established "Banpu Digital Academy", coupled with the development of 16 online training courses. The curriculum comprises 12 mandatory courses and 4 optional courses, with the overall duration totals to over 40 hours. The initial phase focuses on capacity development of the Digital Center of Excellence (DCOE) team, with the plan to rollout the skill development to all employees in the next phase. Furthermore, the Company also promoted DCOE team to participated in 5 certificate training courses, consisting of Scrum master, Professional product owner, Professional agile leadership, Design thinking, and Advance business analytic.

Moreover, the Company also strengthening digital awareness of employees via numerous activities, such as Thirsty Thursday, a weekly podcast which augments digital-related knowledge in Thai and English. There is also Product Showcase activity, which is a monthly forum for digital teams in 4 countries to share knowledge and achievement.

DIGITALIZATION OF PORT LOGISTIC OPERATION

Due to the nature of mining business in Indonesia, whose product shipment is conducted via rivers, availability and effectiveness of the port logistic is thus the Company's priority. In 2021, the Company developed a digital platform, IMM Port Logistic Optimization, an all-in-one logistic management system in a visualized & comprehensive format. With this new platform, the Company can minimize risks and avoid demurrage charges, in which potential value could be as high as USD 50,000 annually.

Furthermore, Port Operation and Maintenance Management or POMM has also been developed by Melak port team in Indonesia. This project aims to ensure the maximum efficiency of port operation in response to the variety of customers' demands. With digital technology, the ultimate goal of POMM is to uplift port management to an automated level. In addition, POMM facilitates related parties in accessing relevant information through website and mobile phone. This enhances efficiency of day-to-day work, such as onsite equipment daily checks. Since the status of port and shipment can be monitored online, this prevents any potential incident leading to business interruption and reduces OHS risks for frontline operators as well.

8 DECENT WORK AND ECONOMIC GROWTH

SUPPLIER MANAGEMENT

Management Approach

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

Proportion of spending on local suppliers

2021	Target 2021	Target 2025
52%	>50%	>50%

Proportion of critical tier-1 suppliers assessed for ESG risks

2021	Target 2021	Target 2025
6%	>20%	100%

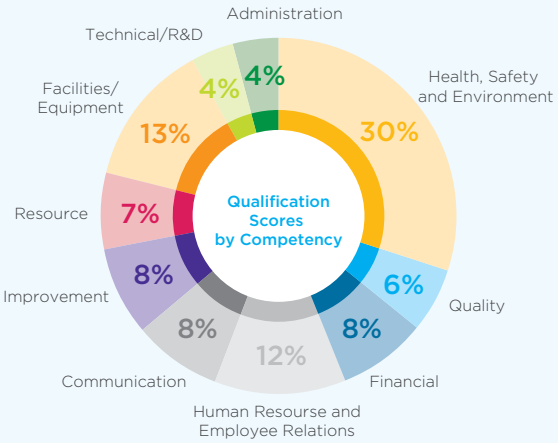
PERFORMANCE

In 2021, the Company completed supplier segmentation following the Kraljic Matrix method for mining business in Indonesia and solar rooftop business in Thailand. The segmentation criteria are being standardized for the thermal power and renewable power businesses in China. Moreover, the spending analysis process is being improved by utilizing global database system for strategic decision making, which is expected to be completed in 2022.

Since the supplier ESG risk assessment process is under standardization, only 6% of total critical tier-1 suppliers were assessed for ESG risks in 2021, mainly from the mining contractors who perform the main operational activities of mining business in Indonesia.

ESG INTEGRATION IN SUPPLIER SELECTION

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



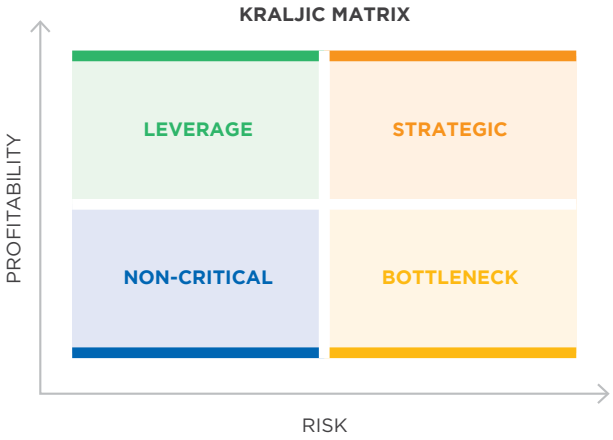
MANAGEMENT APPROACH

With a commitment to creating long-term value for stakeholders, the Company announced the Sustainable Supply Chain Policy and published the Supplier Code of Conduct, which serves as a guideline for all suppliers to ensure that they operate their business in adherence to ESG principles. At present, the supplier ESG risk assessment standard is being developed, starting from the headquarter and related business in Thailand, and mining business in Indonesia. This standard will then be further extended to power business in China, mining business in Australia, and other businesses across all countries.

Sustainable Supply Chain Policy

Supplier Code of Conduct

The Company's supplier management system is developed based on international standards, such as ISO 20400 Sustainable Procurement, with utilization of digital technology. This is implemented as part of the long-term plan. The plan started with supplier segmentation by considering multipronged information, including procurement value, interdependency, impact on business operations, and risks. This information is analyzed using the Kraljic Matrix method and within the clearly defined criteria. In doing so, the Company can put priority on the strategic supplier.

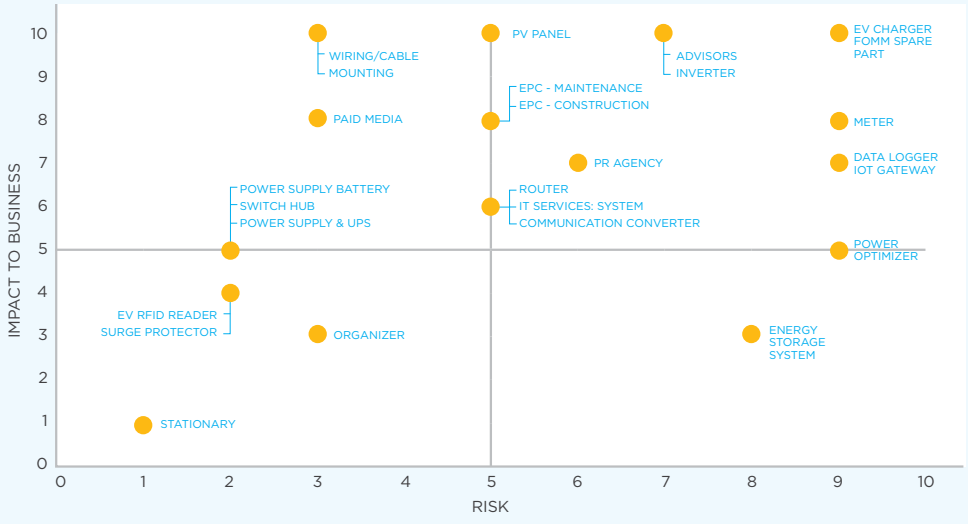


To strengthen supplier management and ensure that ESG risks across supply chain are properly managed, the Company plans to improve the spend management platform, the main system related to supplier management, which includes supplier ESG due diligence. More importantly, the Company supports local procurement by seeking to engage goods and services from local suppliers for all business units.

When the standard is fully implemented, the Company will conduct a preliminary ESG risk assessment on all critical suppliers before the procurement process starts. In the case where a critical supplier is identified as high ESG risk, the supplier shall prepare preventive or corrective measures with a comprehensive audit plan. The Company then conducts an audit as specified in the plan once a year.

SUPPLIER SEGMENTATION FOR SOLAR ROOFTOP BUSINESS IN THAILAND

In 2021, the Company conducted supplier segmentation following Kraljic Matrix method for solar rooftop business in Thailand. The analysis revealed a list of strategic suppliers with that the Company can nurture a long-term relationship such as cooperation on process improvement opportunities and technology transfer.



16 PEACE, JUSTICE AND STRONG INSTITUTIONS

CUSTOMER & PRODUCT STEWARDSHIP

Management Approach

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

Customer satisfaction rate

2021	Target 2021
91%*	>90%

Coverage of customers surveyed

2021	Target 2021
75%*	>90%

Number of complaints regarding customer privacy

2021	Target 2021
0	0

Number of complaints regarding safety and environmental issues from the use of products

2021	Target 2021
0	0

* Includes data of mining business in Indonesia, thermal power business in China and gas business in the U.S. only

PERFORMANCE

In 2021, the Company can maintain a good performance in customer & product stewardship. The customer satisfaction rate was achieved with a satisfaction level at 91%. In addition, there were no complaints received regarding product and service delivery, customer privacy as well as safety and environmental issues from the use of the Company's products.

DIGITAL POWER PLANT IN JAPAN

As a leading international versatile energy provider, the Company had developed Digital Power Plant (DPP) platform in 2021. DPP is a platform to monitor the status and track performance of all 16 solar power plants in Japan. With DPP, the efficiency and availability of power plant are real-time monitored to avoid unexpected circumstances. Presently, DPP is in-between installing additional equipment in 2 pilot plants, which are Nari Aizu and Mugawa solar power plants, with planned to scale up and cover all solar power plants in Japan soon after.

COMPLAINT MANAGEMENT

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

CUSTOMER SATISFACTION MANAGEMENT

The customer satisfaction survey is regularly conducted. The individual interview is also performed to gain insights into the specific issues and customer's expectations. In practice, the management approach may vary according to each business context in the following examples:

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

MICROGRID SYSTEM AT "MALI RESORT"

With the commitment to deliver environmentally friendly products and services, while continuing to foster sustainable business growth, in 2021, Banpu NEXT launched the all-in-one "Microgrid" system, the first private power grid system in Thailand. With microgrid, 100% renewable energy is generated, stored, and supplied in a single system. The Company piloted a microgrid system for "Mali Resort" on Lipe Island, Satun province. As the microgrid can operate both independently without relying on the electricity from the grid (off-grid) or can be installed on-grid, it serves as an alternative energy source with high stability and flexibility. Since it can continuously supply electricity all day and night, the resort can operate and welcome tourists at any given time or circumstance. In tandem, this reduces reliance on diesel generators, reduces energy costs and also GHG emissions. Microgrid also enhances business values of the resort as an attraction point for tourism, as well as elevating business towards sustainability.

Energy cost reduction

30 per month
or **THB 1 million** annually

Fuel consumption reduction

45,000 liters per year
equivalent to GHG emissions reduction
by **90 tonnes** CO_2e annually

8 DECENT WORK AND ECONOMIC GROWTH

ECONOMIC DISTRIBUTION

Management Approach

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

The ratio of the dividend payout to net profits

2021	Target 2021
27%	50%

TAX MANAGEMENT

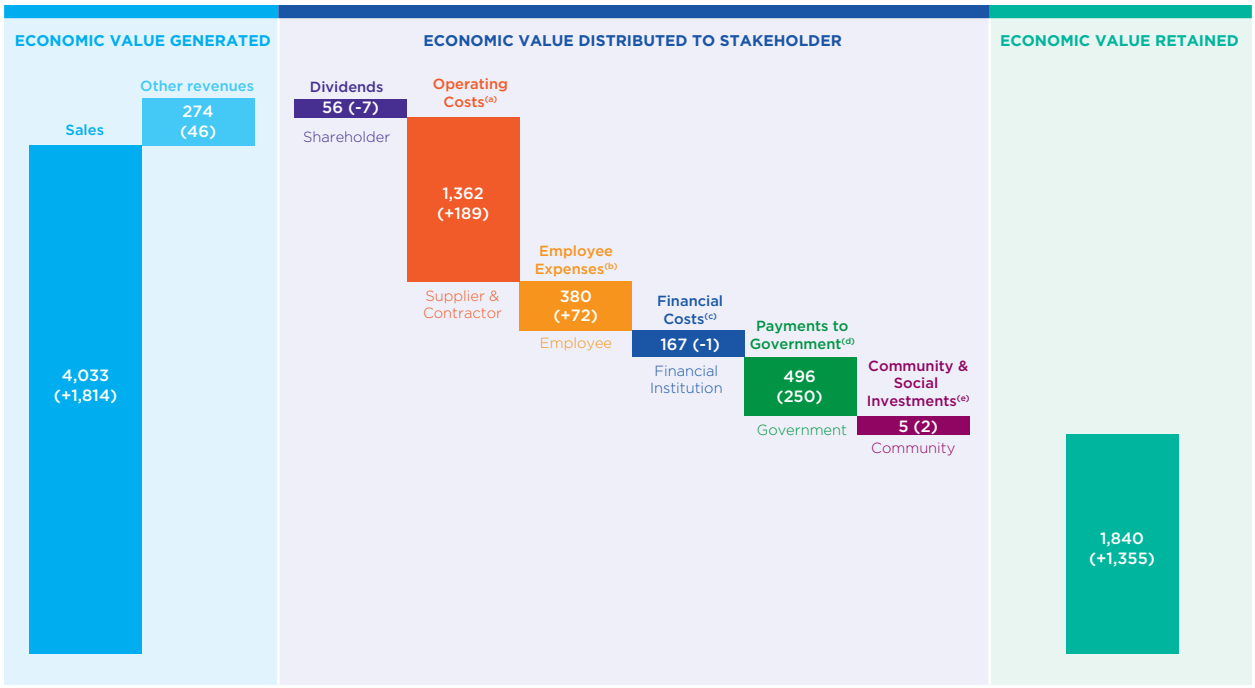
Being a good corporate citizen in every country where it operates is the Company's top priority. In addition to compliance with applicable laws and regulations, the Company demonstrates its commitment to transparency through the disclosure of tax payments. Moreover, the transfer price for intra-group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

Tax Management Approach

Transfer Pricing Guidebook

PERFORMANCE

In 2021, total sales revenue was USD 4,033 million and the Company paid dividends to shareholders in the amount of USD 56 million, which was below the target. However, the Company maintained economic value distributed among all key stakeholders with details as follows:



Units: USD millions

(a) Include contractor costs, fuel costs, and all other operating costs
(b) Include remuneration and benefits, provident fund contributions, employee development expenses
(c) Include interest and financial expenses
(d) Include royalty fee, corporate income tax, local maintenance tax, property tax, specific business tax, and other taxes and payment to the government
(e) Include community development expenses, corporate social responsibility activities and land compensation

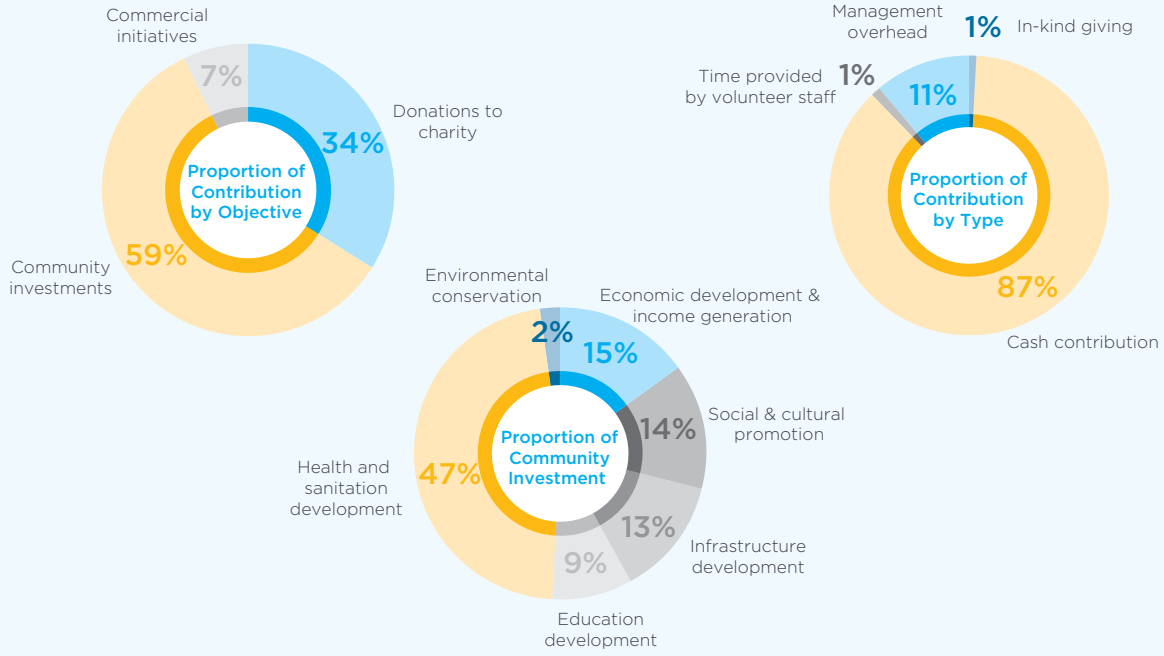
MANAGEMENT APPROACH

The Company aims to share wealth 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. The key channels that the Company distributed economic value generated are as follows:

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

CORPORATE COMMUNITY AND SOCIAL INVESTMENT

The Company places great importance on supporting and investing in the development of communities and society with the goal 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 guideline in categorizing the corporate community investment.



8 DECENT WORK AND ECONOMIC GROWTH

EFFICIENCY & RELIABILITY OF POWER PLANTS

Management Approach

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

Availability factor of power plants*

2021	Target 2021
95.05%	≥90%

Unplanned outage factor*

2021	Target 2021
4.87%	<5%

* Includes 3 combined heat and power plants in China only

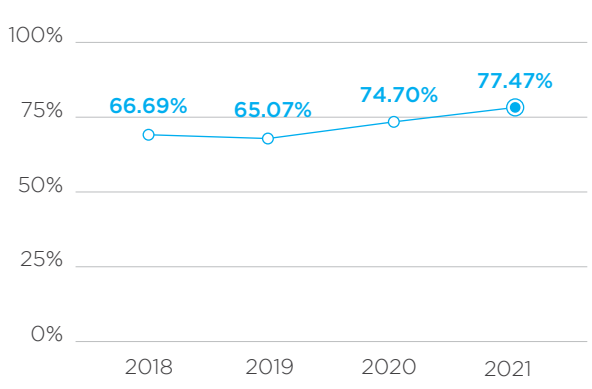
MAINTENANCE OF POWER PLANT

To ensure the reliability during peak season with high demand in winter, all maintenances are planned to complete within summer. There are 2 types of maintenance. The major maintenances are scheduled every two years, taking 30-45 days, while the minor maintenances are scheduled annually, taking 10-20 days each time. The planned maintenances are performed to prevent unplanned outage, maintain reliability and enhance the efficiency of the plants.

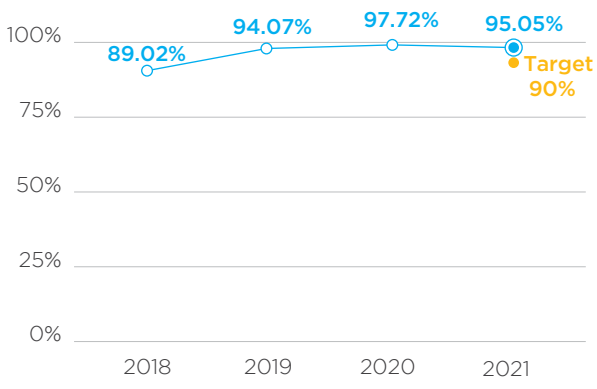
PERFORMANCE

In 2021, the Company can maintain excellent performance in both efficiency and reliability. The average availability factor for 3 CHP plants was 95.05%, achieving the target of 90%, while overall efficiency was 77.47%. Moreover, the unplanned outage factor was also better than plan.

OVERALL EFFICIENCY



AVAILABILITY FACTOR



16 PEACE, JUSTICE AND STRONG INSTITUTIONS

SOCIOECONOMIC COMPLIANCE

Management Approach

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

Significant socioeconomic non-compliance

2021	Target 2021
0	0

Number of significant fines

2021	Target 2021
0	0

Number of significant non-monetary sanctions

2021	Target 2021
0	0

PERFORMANCE

In 2021, the Company had neither significant fines nor non-monetary sanctions from socioeconomic non-compliance in all business units.

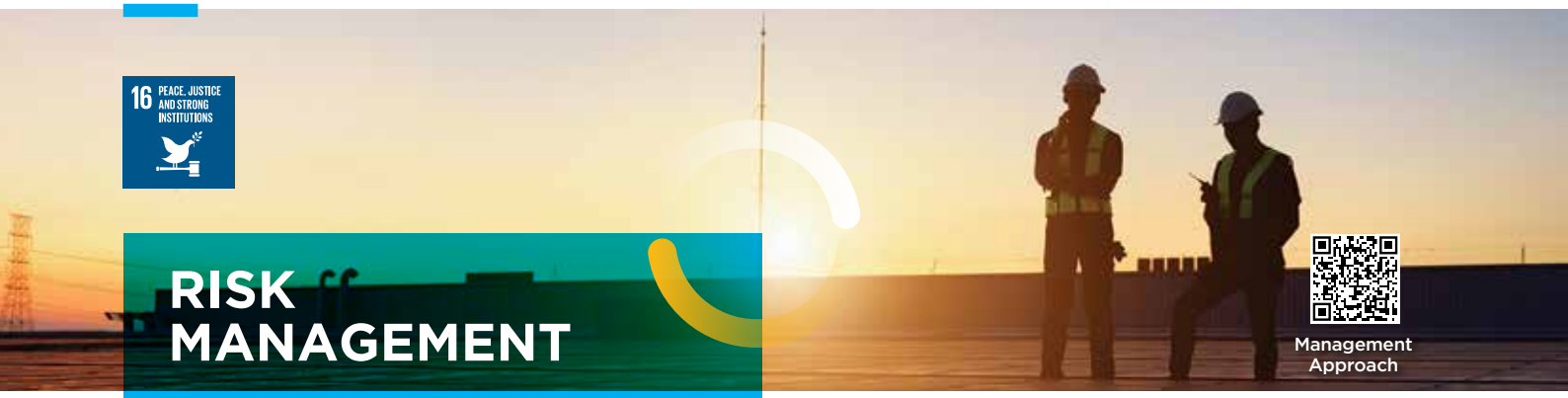
MANAGEMENT APPROACH

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

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

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

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



16 PEACE, JUSTICE AND STRONG INSTITUTIONS

RISK MANAGEMENT

Management Approach

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.

Coverage of ESG issues in the enterprise risk management

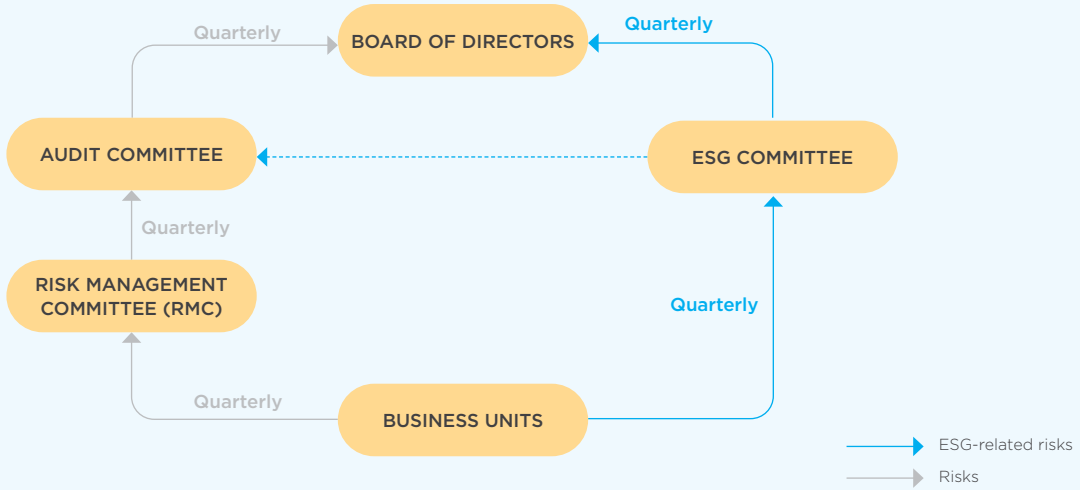
2021	Target 2021	Target 2025
94%	>90%	100%

PERFORMANCE

The review of long-term ESG risks and risk management plan in the past year revealed that there were 2 ESG-related risks classified with high priority, including climate change risk and policy & regulatory change risk, such as human rights-related policies. In 2021, the Company therefore reviewed the risk management plan related to climate change, including water-related risks. Moreover, the long-term roadmap on human rights risk management has also been prepared, including a plan to conduct human rights due diligence in 2022. In addition, the coverage of ESG issues in the enterprise risk management was beyond target at 94%.

ESG RISK MANAGEMENT

The Company has integrated the Environment, Social and Governance (ESG) aspects as part of the risk identification and management process. All business units with high ESG risks are required to prepare related risk management plans. Apart from the quarterly report to the Audit Committee, ESG risks and its management plan have been specifically reviewed by ESG Committee on a quarterly basis to ensure that ESG risks are properly managed. In addition, to make sure that risk management is integrated into day-to-day operations, the Company has developed Compliance Risk Management (C-Rim) application to monitor compliance status and promotes employee awareness through various communication channels, including e-newsletters and townhall.



EMERGING RISK - RISKS FROM THE ADVANCEMENT OF ENERGY TECHNOLOGIES

The advancement of energy technology and increased awareness of the importance of renewable energy and the environment led to the promotion of using alternative energy by the government. Also, it attracted the private sector to increase R&D budget. This provides the Company with both opportunities and challenges in driving its business along with the rapidly changing of business environment. Therefore, the Company has accelerated transformation process under the "Greener & Smarter" strategy. The Digital Capability Center (DCC) has been set up to increase employee cooperation in innovative initiatives.

EMERGING RISK – RISKS FROM CLIMATE CHANGE

The risk related to climate change is one of the Company's priorities due to the emerging change in climate-related regulations across countries. Climate change, therefore, has been considered as part of the KPIs of the CEO and senior executives. The Climate Change Committee was also established to ensure implementation of climate change management strategy, focusing on 4 measures: Mitigating GHG emissions, Being adaptive, Being a part in a low carbon society, and Participation in a climate change community.

Besides, the Company has officially announced to be a supporter of the Task Force on Climate-related Financial Disclosure (TCFD Supporter) in 2020. Following this move, the Company established a TCFD working group to identify risks and financial impact related to climate change, including measures to reduce such impact. The Company has planned to disclose the first "Climate Change Report" in 2023.

COMMODITY RISK MANAGEMENT APPLICATION

Fluctuations of coal and oil prices, including exchange and interest rates are risks in which the Company prioritizes as important. One of the strategies to minimize impacts includes derivatives futures trading. To increase work efficiency, in 2021, the Company developed Commodity Risk Management Application (CERES). CERES is an online database system that collates financial information related to various derivatives into a single platform. It includes both a transaction approval process and analysis report of related information. CERES helps improve accuracy, reduce errors in complex processes, and improve ease of data verification as related functions can easily access relevant information and transaction status. Additionally, CERES has tools that help manage risks, such as sensitivity analysis. Currently, CERES is undergoing systems testing to be fully function in 2022.

BUSINESS CONTINUITY MANAGEMENT

Management Approach

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

Coverage of CMT/IMT exercise

2021	Target 2021	Target 2025
42%*	≥42%	100%

Coverage of BCP exercise for critical business functions

2021	Target 2021	Target 2025
7%**	≥5%	64%

* The real activation of CMT/IMT during COVID-19 pandemic considered as a BCP exercise
** The real exercise of BCP of critical business functions during COVID-19 pandemic considered as a BCP exercise

PERFORMANCE

In 2021, the Company conducted BCP exercises for incident management team at the head office in Thailand and Beijing office in China. To align with the emerging threat, cyber-attack incidents were simulated during the drill. Moreover, there was also a real activation of CMT and IMT teams during COVID-19 pandemic. In addition, despite limitations imposed by COVID-19, all critical business functions can operate their key business activities smoothly. The Company can continue its business operations with no business interruption and no impacts to either product or service delivery as all levels of crisis and emergency management team can effectively address the situations.

MANAGEMENT APPROACH

Business Continuity Policy

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

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

In addition, the sessions to share best practices and lessons learned are regularly arranged to ensure a continuous improvement of the business continuity management system. This was conducted in the form of meetings among business units in each country, as well as the annual corporate strategic meetings. The knowledge obtained would be adopted with consideration to the local context in each country.

16 PEACE, JUSTICE AND STRONG INSTITUTIONS

DATA PRIVACY & CYBERSECURITY

Management Approach

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

Number of cybersecurity breaches

2021	Target 2021
0	0

Number of IT infrastructure incidents

2021	Target 2021
1	0

Percentage of IT and IoT assets securely managed by Security Operation Center (SOC)

2021	Target 2021
30%	≥30%

Incident response rate

2021	Target 2021
2.0	2.0

PERFORMANCE

In 2021, the Company experienced one IT incident. In November, an infrastructure incident occurred, resulting in temporarily suspending the accounting and finance system. However, none of the significant information was lost. The Company was able to recover the system without significant impact on the business operations.

To upgrade system reliability and long-term cost management, the Company initiated the project to transfer all applications to cloud service. It is expected that the entire project will be completed in 2022. In addition, to reduce cybersecurity risk, the Company established the Security Operation Center to enhance its capability to timely detect any cyberthreat so that an immediate response can be taken.

MANAGEMENT APPROACH

The Company announced the Information and Cybersecurity Policy based on the ISO/IEC 27001 framework. By integrating cybersecurity management into enterprise risk management under the supervision of the Audit Committee. Leaks of customer data and cyber-attack are considered as one of emerging risks. To ensure that cybersecurity is effectively managed, Global Information Security Officer (GISO) has been appointed to lead the data privacy and cybersecurity governance across the group, with support from IT department of all business units.

To ensure the same practice across all businesses, the Company also develops IT security management standard. In regard to the standard, when employees face any events or risks related to cybersecurity, the person shall immediately inform the head of IT department in his/her own business unit and then further report to concerned parties for determining mitigation measures accordingly. In addition, the Disaster Recovery Plan (DRP) drill for critical information, such as financial data, is annually organized. The effectiveness of exercise is then assessed by a third party as part of ISO 22301 certification to ensure that the incident is properly responded. The Company also announced IT incident response procedure and established an investigation team. Such incident and response actions shall be reviewed and followed up by management monthly.

To ensure privacy and the protection of all information, especially for those of customers and business partners, the privacy policy is introduced as a framework in defining the purpose of data collection, disclosure of information, and security of personal data. Cybersecurity awareness is one of topics in the orientation package, and cybersecurity news is also regularly communicated to all employees via email.

ROLES OF THE BOARD OF DIRECTORS IN CYBERSECURITY

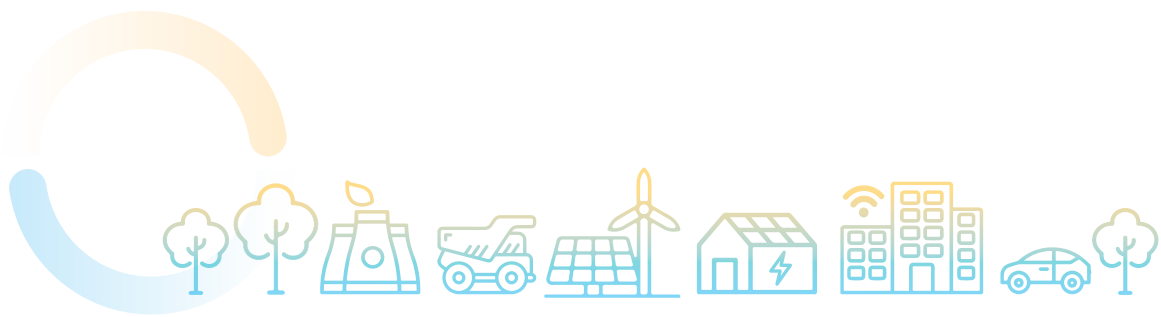
The Company's Board of Directors assigned the Audit Committee to be directly responsible for data privacy and cybersecurity governance, as explicitly stipulated within the Audit Committee Charter. This includes the risk assessment process, of which cybersecurity is an emerging risk the Board considers, as well as risks of regulatory changes, such as PDPA. The performance is quarterly updated to the Board of Directors.

To ensure that the Company has sufficient and appropriate internal control for data protection and cybersecurity in place, the Audit Committee assigned IT Governance team to present cybersecurity risks, mitigation plans, and progress regularly. Recommendations are also provided to further advance the work process. For example, in 2021, the Committee recommended the official appointment of Global Information Security Officer (GISO) to govern this risk specifically.

THE BOARD OF DIRECTORS' EXPERIENCE IN CYBERSECURITY

As the Audit Committee is a committee directly responsible for data privacy and cybersecurity management, the 3 directors' relevant experience is thus a matter the Company prioritizes. The details are as follows:

Director	Relevant experience in data privacy and cybersecurity
Mr. Teerana Bhongmakapat	Experienced in anti-money laundering auditing as an expert board member of the Anti-Money Laundering Office (AMLO), thus proven specialty in IT Governance audits. Previously, he held a position as an auditing director for companies in banking sector, such as TISCO Financial Group PCL, which gives great priority to cybersecurity.
Mr. Suthad Setboonsarng	Experienced in supervising, reviewing, and monitoring risks, including information technology risks as a director to the Bank of Thailand and part of the Public Sector Audit and Evaluation Commission, under the Office of the Public Sector Development Commission (OPDC). This enables for notable capacity to make recommendations for the Company's IT management, particularly concerning risks of non-compliance against Personal Data Protection Act (PDPA).
Mr. Pichai Dusdeekulchai	Extensive experience of over 16 years as a director at Sumitomo Mitsui Banking Corporation, with the last position held being the general manager and deputy chief for Thailand business unit, enables him expertise in governing over data protection and cybersecurity risks, as well as compliance to laws relating to corporate information technology. Presently, he serves as the auditing director and risk management director of Land and Houses Bank PCL, as well as LH Financial Group PCL, which are financial services that give great attention to cybersecurity and information technology.



IT-RELATED EXPERIENCE IN THE BOARD OF DIRECTORS NOMINATION

Knowledge, expertise, and experience concerning information technology and cybersecurity is one of the skills the Company considers in the Board of Director nomination process, as apparent from the Board nomination in 2019, as presented to Mr. Teerapat Sanguankotchakorn, for shareholders' consideration. Mr. Teerapat also has academic background in Doctor of Philosophy Program in Information Processing from Tokyo Institute of Technology. He has IT experience as an Associate Professor, Telecommunications Field of Study, at the School of Engineering and Technologies, Asian Institute of Technology (AIT) and the chair as a Board of Governors at Thai Public Broadcasting Service (Thai PBS).

DEVELOPMENT OF THE BOARD OF DIRECTORS IN CYBERSECURITY

The Company regularly encourages all directors to update their skills and knowledge in data privacy and cybersecurity governance, as following examples.

Director	Training course/Seminar on data privacy and cybersecurity	Year
Mr. Teerana Bhongmakapat	• IT Governance Program (ITG) #2, Thai Institute of Directors Association (IOD) • Cyber Incident Management for Executive Committees of Listed Companies, the Securities and Exchange Commission • IT Security Awareness for Top Management, ACIS Professional Center Co., Ltd. • PDPA Virtual Sharing, Tilleke & Gibbins International • Cybersecurity Update and Awareness	2016 2017 2020 2021 2021
Mr. Rawi Corsiri	• PDPA Virtual Sharing, Tilleke & Gibbins International	2021
Mr. Suthad Setboonsarng	• Cyber Resilience Leadership, Bank of Thailand • PDPA Virtual Sharing, Tilleke & Gibbins International • Cybersecurity Update and Awareness	2017 2021 2021
Mr. Metee Auapinyakul	• PDPA Virtual Sharing, Tilleke & Gibbins International	2021
Ms. Somruedee Chaimongkol	• PDPA Virtual Sharing, Tilleke & Gibbins International • Cybersecurity Update and Awareness	2021 2021
Mr. Anon Sirisaengtaksin	• Cyber Resilience, Bank of Thailand	2021
Mr. Pichai Dusdeekulchai	• PDPA Virtual Sharing, Tilleke & Gibbins International	2021
Mr. Teerapat Sanguankotchakorn	• PDPA Virtual Sharing, Tilleke & Gibbins International	2021
Mr. Piriya Khempon	• PDPA Virtual Sharing, Tilleke & Gibbins International	2021

ENVIRONMENT

PERFORMANCE HIGHLIGHT

		2021	Target 2021	Target 2025
GHG emissions intensity reduction - Mining business	✗	-0.1%	-1%	-7%
GHG emissions intensity reduction - Thermal & renewable power business	✗	-3%	-4%	-20%
Energy consumption intensity reduction - Mining business	✓	-3%	-1%	-5%
Air emissions intensity (SO_2) - Mining business	✓	25.7	≤30	≤30
Air emissions intensity (SO_2) – Thermal power business	✓	25.4	≤76.6	≤76.6
Air emissions intensity (NO_x) - Thermal power business	✓	44.5	≤118.4	≤118.4
Air emissions intensity (TSP) - Thermal power business	✓	3.1	≤23	≤23
Water consumption intensity - Mining business	✗	0.243	≤0.144	-
Water consumption intensity - Thermal power business	✗	0.877	≤0.868	-
Hazardous waste to landfill - Mining business	✗	153	0	0
Hazardous waste to landfill - Thermal power business	✓	0	0	0
Proportion of synthetic gypsum reused & recycled - Thermal power business	✓	100%	100%	100%
Business units assessed for potential biodiversity impact	✓	100%	100%	100%
Business units assessed for biodiversity value	✓	100%	100%	100%
Progress of in-pit backfilling against plan	✓	100%	≥80%	≥80%
Mines with acid mine drainage management plan	✓	100%	100%	100%
Significant tailings spill	✓	0	0	0
Mines with mine closure plan	✓	100%	100%	100%
Significant environmental incident	✗	1	0	0

GHG EMISSIONS

Management Approach

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

GHG emissions reduction intensity - **Mining business***

2021	Target 2021	Target 2025
-0.1%	-1%	-7%

GHG emissions reduction intensity - **Power business***

2021	Target 2021	Target 2025
-3%	-4%	-20%

GHG emissions intensity - **Mining business** **(tonne CO_2e/tonne finished coal)**

2021	Target 2021	Target 2025
0.141	≤0.128	-

GHG emissions intensity - **Power business** **(tonne CO_2e/MWh)**

2021	Target 2021	Target 2025
0.555	≤0.549	-

* Against the business as usual (BAU)
** Calculated from the business as usual (BAU) in December 2021

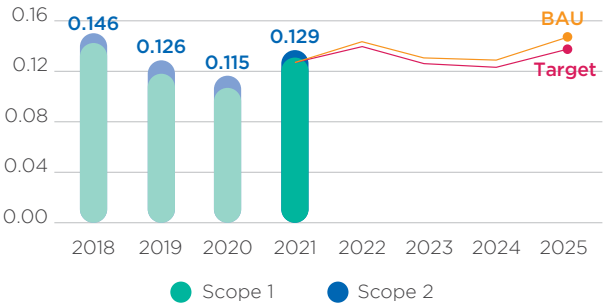
PERFORMANCE

The Company is in the process of preparing to disclose information corresponding to Task Force on Climate-related Financial Disclosures (TCFD) recommendation. In 2021, the internal TCFD working group was established, which comprises the representative from all related functions. In addition, the Company also announced new long-term GHG emissions reduction targets - 7% reduction from BAU for mining business and 20% reduction from BAU for power business, which is the consolidation of thermal power business and renewable power business.

Mining Business

In 2021, the GHG emissions intensity was 0.129 tonnes CO_2e/tonne finished coal. Due to some GHG reduction projects being delayed, the reduction was only 0.1% from BAU.

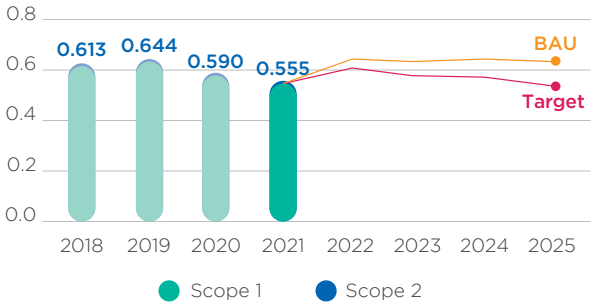
GHG EMISSIONS INTENSITY - MINING BUSINESS
(tonnes CO_2e/tonne finished coal)



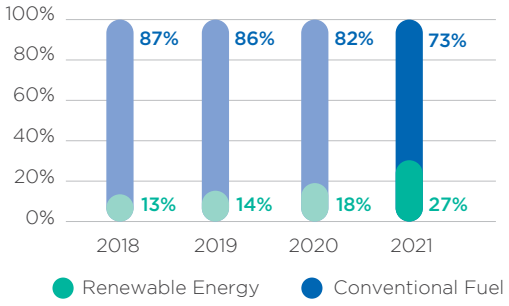
Power Business

In 2021, the GHG emissions intensity was 0.555 tonnes CO_2e/MWh, which was slight below the target. However, the Company is seeking opportunities for additional investment in renewable power business to ensure the achievement of GHG reduction target.

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



PROPORTION OF ELECTRICITY GENERATED

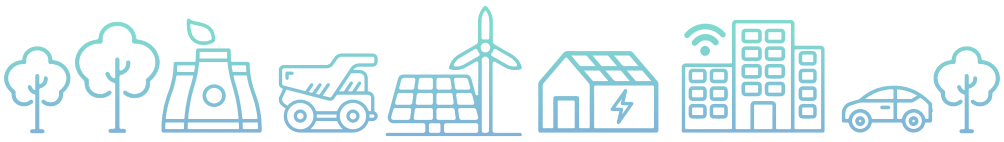


CLIMATE-RELATED RISKS AND OPPORTUNITIES

In 2021, the Company completely assessed risks and opportunities related to climate change and was conducting a scenario analysis for the financial impact against the business as usual. The assumptions include STEP (4 degree) and 2DS (2 degree), according to the International Energy Agency (IEA). The result will serve strategic formulation as well as long-term target setting. Initially, significant climate-related risks and opportunities are as follows.

Risk	Risk/Opportunity	Related business			
		Mining	Gas	Thermal power	Renewable power
Transition risk	Regulatory changes	✓	✓	✓	✓
	Carbon technology investment	✓	✓	✓	✓
	Change of energy consumption behavior	✓	✓	✓	✓
	Ban on fossil fuels	✓	✗	✓	✗
Physical risk	Change in precipitation patterns	✓	✗	✗	✗
	Change in frequency & severity of natural disasters	✓	✓	✓	✓

Remark: ✓ Related
✗ Not related



CLIMATE GOVERNANCE

In 2020, Banpu officially announced as a supporter of the Task Force on Climate-related Financial Disclosure (TCFD Supporter) and was preparing to disclose the first Climate Change Report, aligning with TCFD in 2023. In 2021, the Company established the Environment, Social and Governance Committee (ESG Committee), comprising 3 independent directors. ESG Committee represents the Board of Directors in overseeing matters related to ESG to ensure that ESG-related issues are properly managed and ongoing commitments to ESG are fulfilled. In brief, roles and responsibilities of the Board of Directors related to climate change are as follows:

	Roles and responsibilities related to climate change
ESG Committee	Oversee policy, management, targets and practices related to ESG, including climate change, and public disclosure in relation to ESG matters. The committee convenes every quarter.
Audit Committee	Review and monitor management activities of significant ESG risks through the quarterly meeting with Risk Management Committee. This includes climate-related risks such as change of policies and actions in each country.

BUSINESS OPPORTUNITY FROM EMISSIONS TRADING SCHEME IN CHINA

Under commitment to achieve the net-zero emission goal by 2060, the Chinese Government has established the Emissions Trading Scheme (ETS) which is applicable to 8 business sectors, including the energy industry. This directly impacts 3 combined heat and power plants in China that have to join the emission trading program as required by the Chinese Government. The plants also have to participate in the emission trading starting in 2021 for the emission released during 2019-2020. The internal assessment showed that the emissions from Luannan and Zouping in 2019 exceeded the government allowances. However, emissions were brought down under allowances in 2020 as a result of the improvement initiatives. This provided opportunities for the Company to trade the remaining emissions quota and led to additional initiatives for emissions account management.

FREQUENCY CONVERSION FOR INDUCED DRAFT FAN

Budget	USD 232,130
No. of involved employees	3 persons
Financial impact (annual)	
• Energy consumption reduction	USD 121,009
• GHG emissions reduction	USD 7,932

In support of the Chinese Government's net-zero emissions goal, Zouping power plant initiated an emission reduction project to install the frequency conversion inverter at the induced draft fan. Previously, even when during a low production period, the plant could not control frequency of the induced draft fan, causing excessive consumption of energy. The inappropriate fan speed also causes higher vibration, which shortens the fan life. The frequency conversion inverters were installed at two (out of five) stacks, enabling the plant to save 1,980 MWh of energy or USD 121,009 per year, and can reduce GHG emissions of 1,025 tonnes CO_2e or USD 7,932 annually.

INDIRECT GHG (SCOPE 3) EMISSIONS

The Company has defined indirect GHG emissions (Scope 3) at 4 key businesses according to the Technical guidance for calculating scope 3 emissions guideline (version 1.0). The business activities relating to GHG emissions (Scope 3) were identified as follows:

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

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

Remark: ✓ Related
✗ Not related

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

MANAGEMENT APPROACH

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

Climate Change Policy

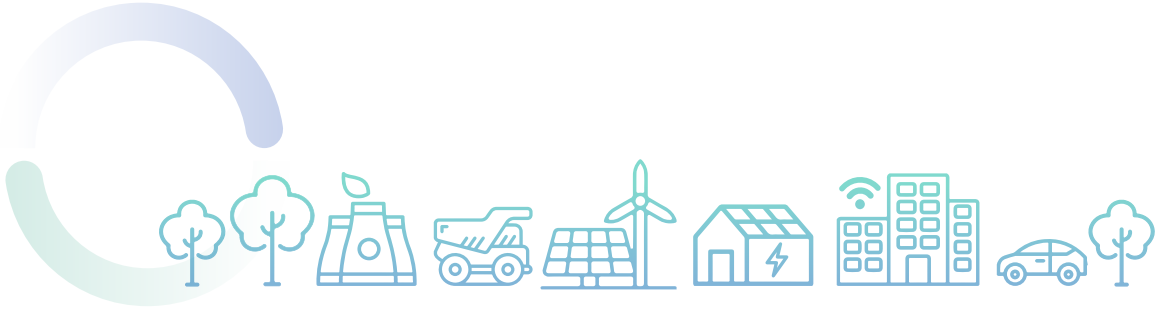
Measure	Operating direction	Key progress
Mitigating GHG emissions	• Ensuring compliance with related laws	• Announced climate change policy since 2010 and revised in 2018
	• Seeking to reduce GHG emissions	• Announced long-term GHG reduction targets since 2010 (2015 targets announced in 2010, 2020 targets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

To determine the GHG emissions, the Intergovernmental Panel on Climate Change (IPCC) Fifth Assessment Report (AR5) was used on Global Warming Potential (GWP). The emission factors were derived from the revised edition of the Corporate Accounting and Reporting Standards and if applicable, the specific emission factors taken from the regional guidelines were used.

In this report, 5 gases are discussed due to their relationship with normal operational activities including carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), and sulfur hexafluoride (SF_6). The GHG reduction targets for both mining and power businesses were set against the Business As Usual (BAU). Furthermore, the Company also takes into account other indirect GHG emissions (Scope 3) and is defining GHG emissions (Scope 3) for all businesses, with planned to be completed in 2022. Currently, the Company disclosed only one category of GHG emissions (Scope 3) - from the use of sold products from mining business. The sources of GHG emissions for each business were identified as follows:

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	●		●									

Besides, the Company has officially been a TCFD supporter since 2020 and established a TCFD working group to identify risk and financial impact related to climate change, including measures to reduce such impact. The Company has planned to disclose the first “Climate Change Report”, aligning with TCFD in 2023.



ENERGY

Management Approach

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

Energy consumption intensity – **Mining business (GJ/tonne finished coal)**

2021	Target 2021	Target 2025
0.444	≤0.447	≤0.428

Energy consumption intensity – **Thermal power business (GJ/MWh)**

2021	Target 2021	Target 2025
1.19	-	-

Energy consumption intensity – **Renewable power business (GJ/MWh)**

2021	Target 2021	Target 2025
0.069	-	-

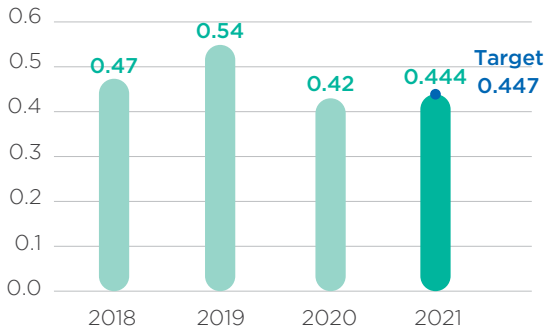
PERFORMANCE

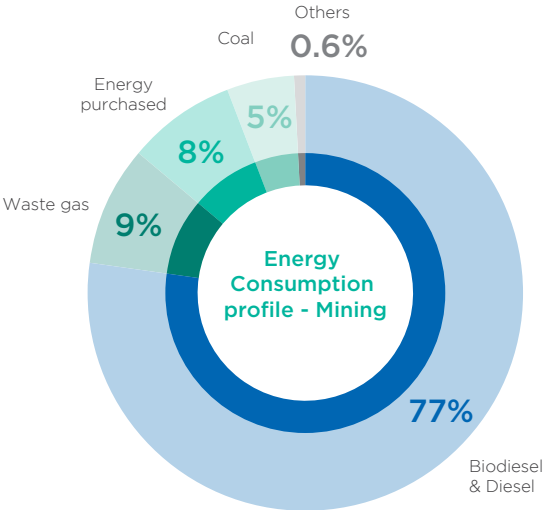
In 2021, the Company integrated an energy management plan as a part of the GHG management, driving energy consumption for maximum efficiency. In China, the energy efficiency improvement projects are being implemented at combined heat & power plants with a forecast to save 3,000 MWh annually. While, in Indonesia, the Company maintained a proportion of alternative energy through the consumption of biodiesel B30.

Mining Business

In 2021, the Company achieved the energy consumption target, with the energy consumption intensity at 0.444 GJ/tonne finished coal. However, the intensity increased by 6% compared to the previous year.

ENERGY CONSUMPTION INTENSITY
MINING BUSINESS
(GJ/tonne finished coal)





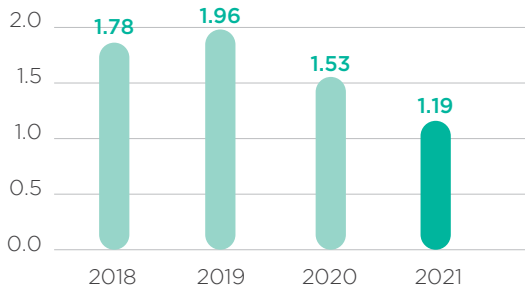
Thermal Power Business

In 2021, the energy consumption intensity was 1.19 GJ/MWh, decreasing by 22% from the year prior. This was a result of process efficiency optimization in response to the customer demand and waste heat recovery project.

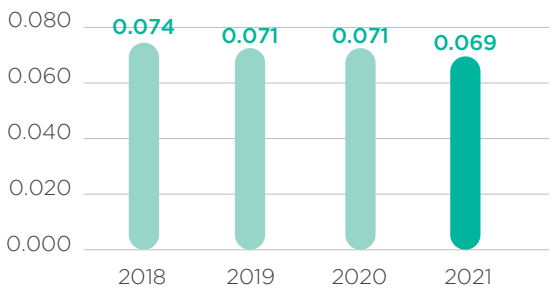
Renewable Power Business

In 2021, the energy consumption intensity was 0.069 GJ/MWh, which decreased 3% compared to the previous year due to the improvement of vehicle fuel consumption and lower electricity purchased.

ENERGY CONSUMPTION INTENSITY THERMAL POWER BUSINESS (GJ/MWh)



ENERGY CONSUMPTION INTENSITY RENEWABLE POWER BUSINESS (GJ/MWh)



MANAGEMENT APPROACH

The Company aims to maximize energy efficiency by integrating an energy management plan with the GHG emissions management strategy. The key energy-consuming activities for each business are described below:

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

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

OPEN-PIT MINING BUSINESS

Most of the energy consumption is in overburden removal and coal hauling activities. Accordingly, the energy conservation projects focus on improving the energy efficiency of these transportation systems, for example, change of haul trucks to conveyor belts, improvement of transportation routes for maximum efficiency of fuel consumption, etc.

UNDERGROUND MINING BUSINESS

Most energy is consumed for coal cutting with heavy machines and coal transportation by conveyor belts. Therefore, the energy conservation projects focus on enhancing the efficiency of electricity consumption, for example, the use of automatic control systems to calculate the optimal speed in coal cutting and conveying, and regular machine inspections to maintain equipment efficiency.

THERMAL POWER BUSINESS

Most of the energy is consumed in the boiler to generate electricity. The Company, accordingly, emphasizes the efficiency improvement by properly balancing the proportion of electricity and heat production in order to meet the changing customer demand across different seasons.

RENEWABLE POWER AND SOLAR ROOF BUSINESS

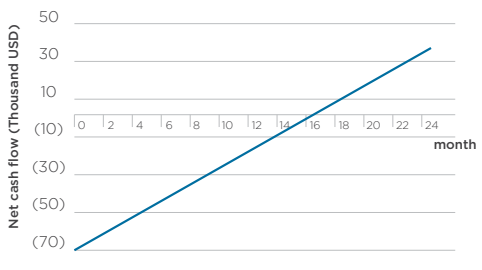
Most of the energy is primarily consumed through transportation activities. The Company therefore places emphasis upon the proper traveling plan to maximize fuel consumption efficiency.

To determine energy consumption, the volume of diesel, biodiesel and gasoline is gathered from a monthly receipt. The Company then converts them to the energy unit by energy conversion factors from "GHG Protocol: Emission Factors from Cross Sector Tools". The weight of coal is collected at the conveyor belt scale, and the volume of waste gas is collected from the gas flow rate, which was summarized in a form of monthly report.

SPEED CONTROL AT COAL PULVERIZER

Luannan power plant has installed frequency conversion inverter to control the motor speed at coal pulverizer. The equipment maximizes efficiency of the machine while reducing energy consumption. Since the installation in July 2021, the plant can lower the speed during a low production period. Compared to 2020, it is estimated that the plant will save 974 MWh of energy or USD 47,927 per year. This can also reduce GHG emissions by 666 tonnes CO_2e or USD 5,154 annually. This project will be breakeven within only 16 months.

Budget	USD 69,333
No. of involved employees	10 persons
Financial impact (annual)	
• Electricity reduction	USD 47,927
• GHG emissions reduction	USD 5,154



AIR EMISSIONS

Management Approach

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

Air emissions intensity (nonpoint source) - **Mining business (g/tonne finished coal)**

2021	Target 2021	Target 2025
SO_2 = 25.7	≤30	≤30

Air emissions intensity (point source) – **Thermal power business (g/MWh)**

2021	Target 2021	Target 2025
SO_2 = 25.4	≤76.6	≤76.6
NO_x = 44.5	≤118.4	≤118.4
TSP = 3.1	≤23.0	≤23.0
Hg = 0.0015	-	-

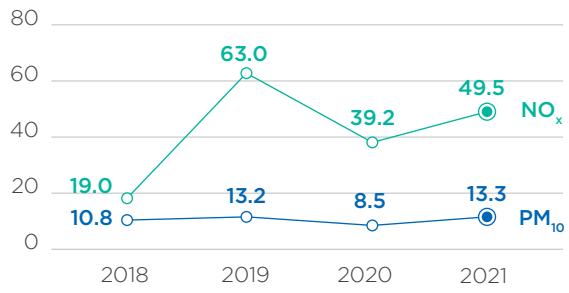
PERFORMANCE

Due to the pollutant's intensity being significantly low compared to the level of stipulated regulations, as well as continuous reduction in pollutant load released in recent years, in 2021, the Company thus placed emphasis on control measures to ensure that intensity is maintained at the same levels of the year prior. Currently, the data collection system on nonpoint source emissions is being developed. It is expected that nonpoint source data will be fully disclosed in Sustainability Report 2023.

Mining Business

The target of nonpoint source SO_2 emissions was achieved as emissions intensity was 25.7 g/tonne finished coal. The point source emissions intensity was 5.1, 49.5 and 13.3 g/tonne finished coal for SO_2, NO_x, and PM_{10}, respectively.

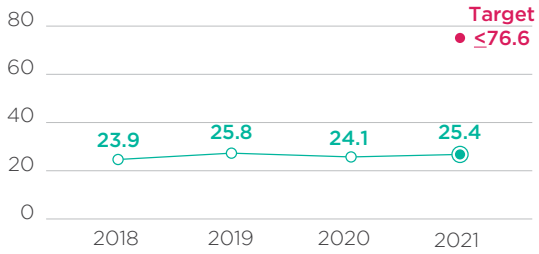
AIR EMISSIONS INTENSITY
MINING BUSINESS
(g/tonne finished coal)



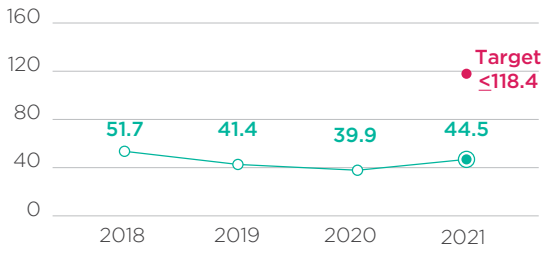
Thermal Power Business

The point source emissions intensity was 25.4, 44.5 and 3.1 g/MWh for SO_2, NO_x, and TSP, respectively. In addition, the Company also measured Hg and discovered the emissions intensity was extremely low at 0.0015 g/MWh, which imposes no impact upon the environment. Notably, as the emissions intensity continuously declined in recent years, the Company emphasized on controlling measures to maintain the intensity at present levels.

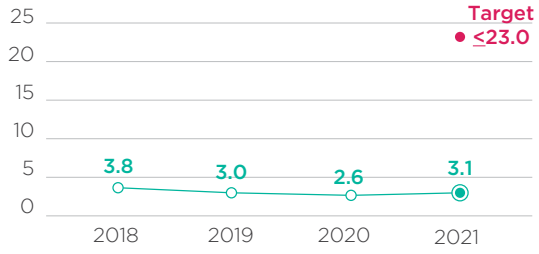
SO_2 EMISSIONS INTENSITY THERMAL POWER BUSINESS (g/MWh)



NO_x EMISSIONS INTENSITY THERMAL POWER BUSINESS (g/MWh)



TSP EMISSIONS INTENSITY THERMAL POWER BUSINESS (g/MWh)



MANAGEMENT APPROACH

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

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

Mining Business

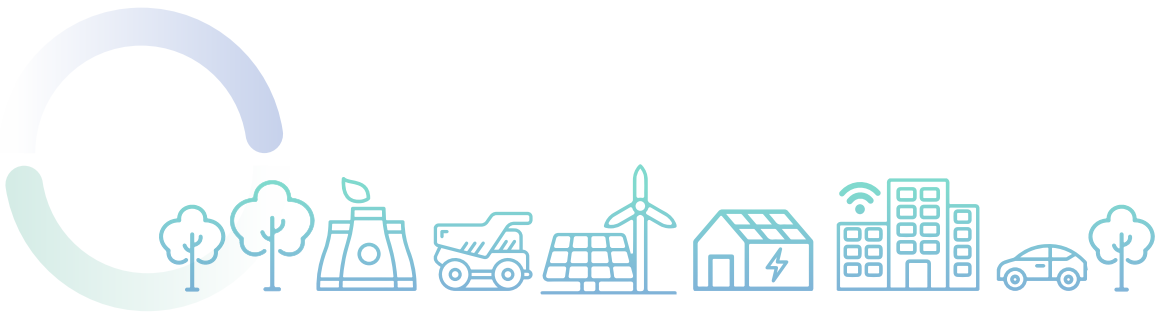
There are 2 types of emissions: point source and nonpoint source. The point source emissions, typically generated from diesel generator, are controlled by preventive maintenance to reduce the chance of incomplete combustion. For nonpoint source, the main pollutant is sulfur dioxide (SO_2) from fuel combustion at the hauling trucks from coal hauling and storage activities. Several initiatives to manage SO_2 are undertaken, such as using conveyor belts instead of trucks, water spraying at haul roads and coal stockyards, regular engine maintenance, and truck speed control.

Furthermore, the Company regularly conducts air quality monitoring by a third party, in both operational areas and nearby communities in quarterly and yearly basis. The results were used to calculate total emissions load under the assumption that the quarterly result represents intensity of that quarter, or that the yearly result represents that intensity of such a year.

Thermal Power Business

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

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



WATER

Management Approach

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

Water consumption intensity – **Mining business (m³/tonne finished coal)**

2021	Target 2021
0.243	≤0.144

Water consumption intensity – **Power business (m³/MWh)**

2021	Target 2021
0.877	≤0.868

SPRINGVALE WATER TREATMENT PLANT

Centennial, a subsidiary in Australia, joined with Energy Australia Company Limited in developing a project to treat mine water from Springvale and Angus Place, and reused as cooling water for the Mount Piper Power Plant. The project creates co-benefits for both parties as Springvale can control the volume of water discharge to the Coxs River, and Mount Piper can reduce the volume of water withdrawal. With full operation since June 2019, this water treatment plant can treat 32 million liters of water daily. The project help to maintain the natural resources for other stakeholders and increases biodiversity value, both flora and fauna in the areas. At the same time, it benefits Lake Lyell, which is a significant water source for tap water supplied to Sydney. Moreover, the local employment also strengthened relationship with the local community.

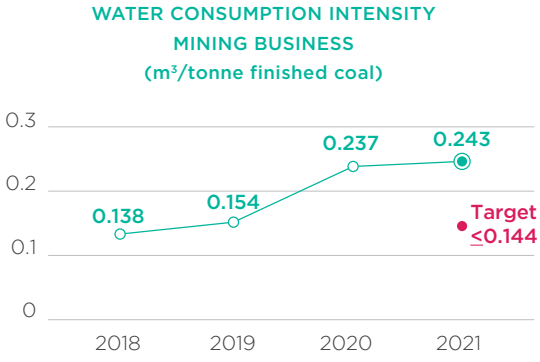
PERFORMANCE

In 2021, the Company was working on improving the data collection system according to GRI 303 (2018) for mining businesses in Indonesia and Australia, as well as establishing water balance of each business unit. This was conducted simultaneously with a water footprint study of thermal power business. The water risk assessment conducted last year revealed that 33% of all business units are situated on water-stressed areas.

Business	Parameter					
	pH	Oil & Grease	Total suspended solid (TSS)	Total dissolved solids (TDS)	Chemical oxygen demand (COD)	Iron (Fe)
Mining - Indonesia	●	-	●	●	-	●
Mining - Australia	●	●	●	●	-	●
Thermal power - China	●	●	●	●	●	-

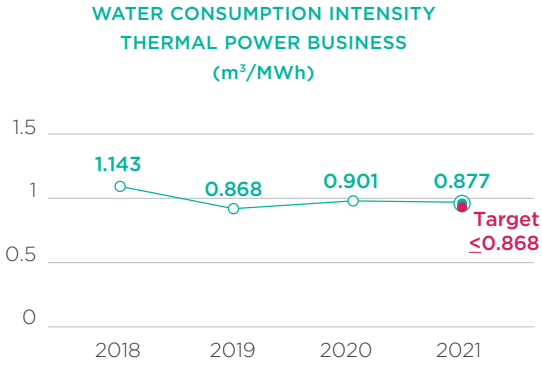
Mining Business

In 2021, the Company did not achieve the target as water consumption intensity was 0.243 m³/tonne finished coal. To ensure the achievement, the Company is improving the water management plan by initiating to update the water flow diagram.



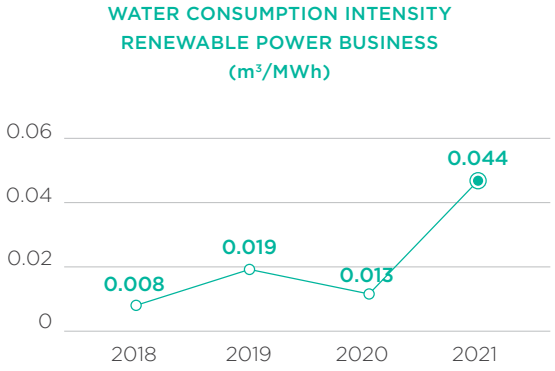
Thermal Power Business

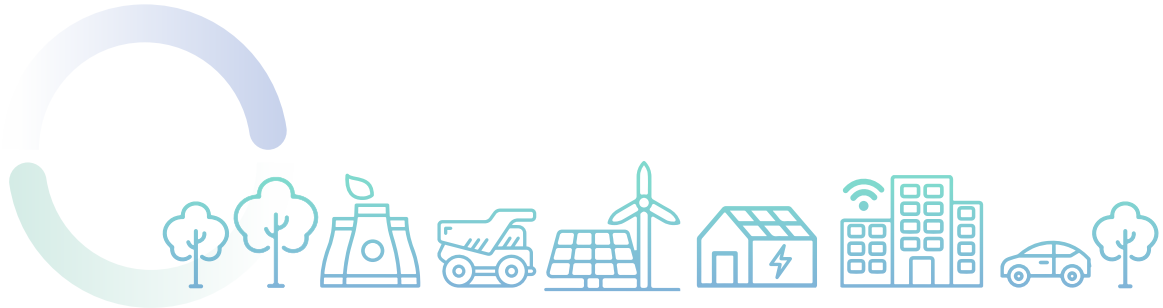
In 2021, the water consumption intensity was 0.877 m³/MWh, which decreased by 3% compared to the previous year. However, the intensity slightly exceeded the target due to the commencing operations of extension units at Luannan power plant in 2020. The process improvement is ongoing to ensure the intensity rate against the target.



Renewable Power Business

In 2021, the water consumption intensity was 0.044 m³/MWh, significant increased from the previous year because 2 new businesses - solar power plants in Australia and wind power plant in Vietnam, were just consolidated in which the water consumption profile are significant different from the solar power plants in China and Japan.





MANAGEMENT APPROACH

With sustainable water management, the Company aims to be part of the UNSDGs, Goal 6 - Clean Water and Sanitation. The Company's water management covers the process of water withdrawal, water consumption, and water discharge. The Company promotes stakeholder engagement to minimize potential impacts from water scarcity, and to preserve sufficient water resources for every sector. Some of the measures are encouraging critical suppliers to conduct a water risk assessment and develop mitigation plans to minimize impact from the use of water.

Water Management Policy

With concerns about the climate-related impact on severe drought, the increasing trend of water demand from all sectors and water scarcity, both in terms of quantity and quality is one emerging risk of the Company. To ensure business continuity, the Company requires all business units to conduct a water risk assessment whose one of the criteria is to determine whether the operational sites are located in a water-stressed area, referring to Aqueduct Water Risk Atlas of World Resource Institute. This is to reduce water withdrawal from water sources in water-stressed areas.

Business	Operational status	No. of business unit		
		Total	Assessed	In water-stressed areas
Mining - Indonesia	Operating	5	5	-
	Project	2	2	-
Mining - Australia	Operating	5	5	3
	Project	4	4	2
Gas - The U.S.	Operating	2	2	1
Thermal power - China	Operating	3	3	3
Renewable power - China	Operating	7	7	6
Renewable power - Japan	Operating	15	13*	-
	Project	1	1	-
Renewable power - Vietnam	Operating	4	1	-
	Project	1	1	-
Renewable power - Australia	Operating	2	2	-

* Excluding one power plant in which there is no management control, as Banpu holds less than 50%

To achieve the long-term goal in water footprint reduction, water consumption intensity targets were set for mining business and thermal power business. Even though the targets do not cover renewable power business, due to the low consumption, therefore considering as insignificant, the Company still collects water consumption profile of renewable power business to improve the water management. Generally, data collection may differ among business. For example, in thermal power business, water withdrawn comprises surface water, groundwater, and water from third-party. This is under the assumption that water storage in the area is at a very low capacity compared to the total water withdrawal. The rainfall in the areas is also excluded as it directly bypassed the areas.

Besides, the Company has also closely monitored the quality of water discharge, by both internal and external parties. The parameters, frequency and monitoring method are basically varied from one site to another based on local regulatory requirements. For example, in Indonesia, the monitoring is in accordance with the Government Decree No. 82/2011. To ensure compliance, the Company sets internal discharge limit for each business units specifically to the local requirements as well as issues concerned by related stakeholders.

WASTE

Management Approach

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

MINING BUSINESS

Hazardous waste to landfill **(tonne)**

2021	Target 2021
153	0

Hazardous waste directed to disposal intensity **(kg/tonne finished coal)**

2021	Target 2021
0.012	≤0.010

Non-hazardous waste directed to disposal intensity **(kg/tonne finished coal)**

2021	Target 2021
0.162	≤0.140

THERMAL POWER BUSINESS

Hazardous waste to landfill **(tonne)**

2021	Target 2021
0	0

Hazardous waste directed to disposal **(tonne)**

2021	Target 2021
1.28	≤6

Non-hazardous waste directed to disposal intensity **(kg/MWh)**

2021	Target 2021
0.131	≤0.130

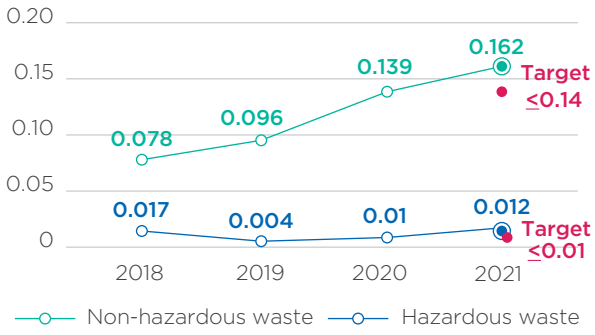
PERFORMANCE

In 2021, the Company focused on strengthening waste management to ensure alignment with corporate standard that strives to avoid waste generation and increase the proportion of reuse and recycling. Moreover, data collection system was upgraded to align with GRI 306 (2020) with clear definitions on each disposal method.

Mining Business

In 2021, the waste directed to disposal intensity was 0.012 and 0.162 kg/tonne finished coal, for hazardous and non-hazardous waste respectively. This slightly exceeded targets. Hazardous waste directed to disposal intensity increased because certain portions of waste from mining business in Australia were disposed by landfill, following the government guideline. By the way, ash and synthetic gypsum generated from the captive power plant in Indonesia were stored onsite in the area approved by the government and will be delivered to external party for reuse in 2022.

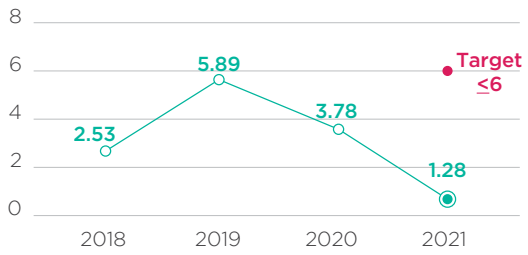
WASTE DIRECTED TO DISPOSAL INTENSITY
MINING BUSINESS
(kg/tonne finished coal)



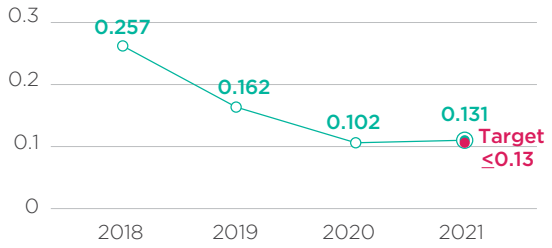
Thermal Power Business

In 2021, the hazardous waste directed to disposal was 1.28 tonnes, a significant reduction from the previous year due to a change from direct disposal to reuse. Moreover, the target was achieved as no hazardous waste was sent to landfills. Meanwhile, the non-hazardous waste directed to disposal intensity slightly exceeded the target, since there was a significant amount of the wastewater treatment sludge from Luannan. While bottom ash, fly ash, and synthetic gypsum from 3 CHP plants in China, which are classified as non-hazardous, have been 100% sold to the third parties for reuse in the cement production.

HAZARDOUS WASTE DIRECTED TO DISPOSAL
THERMAL POWER BUSINESS
(tonne)



NON-HAZARDOUS WASTE DIRECTED TO DISPOSAL INTENSITY
THERMAL POWER BUSINESS
(kg/MWh)



Renewable Power Business

While amount of waste generated from renewable power business is significantly low when compared to other businesses, the Company still collects the data to further develop management plans. In 2021, waste directed to disposal intensity was 0.0003 and 0.022 kg/MWh, for hazardous and non-hazardous waste respectively, a slight reduction from the previous year.

WASTE MANAGEMENT STANDARD

1 **Planning**
Identify source of waste, hazardous characteristic, and disposal method

2 **Storage**
Ensure proper waste storage facility with regular inspection

3 **Transportation**
Ensure proper waste handling and track all transportation

4 **Treatment and disposal**
Maximize the reuse & recycle and avoid landfill

5 **Monitoring**
Ensure compliance of waste management against standard

MANAGEMENT APPROACH

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

Waste Management Policy

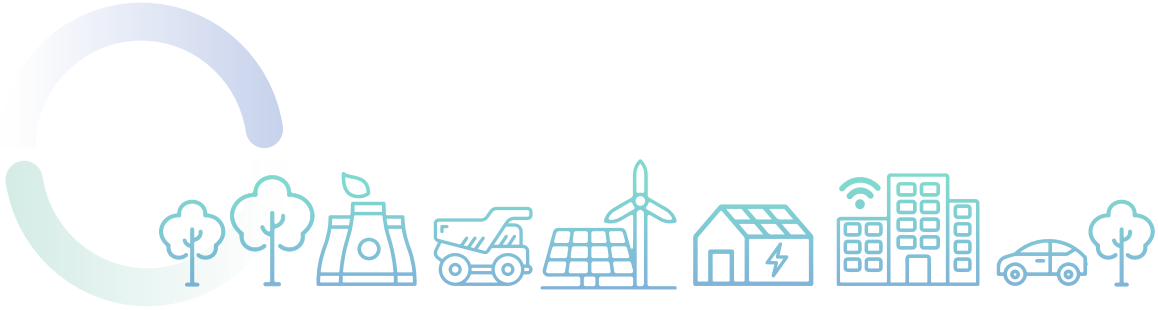
With respect to waste managed by external parties, the Company has selected agencies authorized by each local government to transport and dispose them. This is to ensure that waste management is carried out per standards with the least environmental impact. Additionally, the Company has developed a waste management flow to be used as reference in monitoring that waste management is conducted in alignment with specific local requirements and the Company's waste management standards.

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

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

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

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



BIODIVERSITY

Management Approach

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

MINING BUSINESS

Proportion of business units assessed for potential biodiversity impact

2021	Target 2021
100%	100%

Proportion of business units assessed for biodiversity value*

2021	Target 2021
100%	100%

THERMAL POWER BUSINESS

Proportion of business units assessed for potential biodiversity impact

2021	Target 2021
100%	100%

Proportion of business units assessed for biodiversity value*

2021	Target 2021
NA**	100%

RENEWABLE POWER BUSINESS

Proportion of business units assessed for potential biodiversity impact

2021	Target 2021
100%	100%

Proportion of business units assessed for biodiversity value*

2021	Target 2021
NA**	100%

* For business unit(s) in operating status identified as high potential for biodiversity impact only
** No business units identified as high potential of biodiversity impact

PERFORMANCE

In 2021, the Company completely revised the biodiversity impact criteria for the potential biodiversity impact assessment and performed an annual review considering the new criteria at all business units. According to the assessment, 4 operating mines, 1 mining project, and 1 solar power plant project were identified as high potential for biodiversity impact.

FOREST EDUCATION CENTER FOR MINE REHABILITATION AT EMBALUT

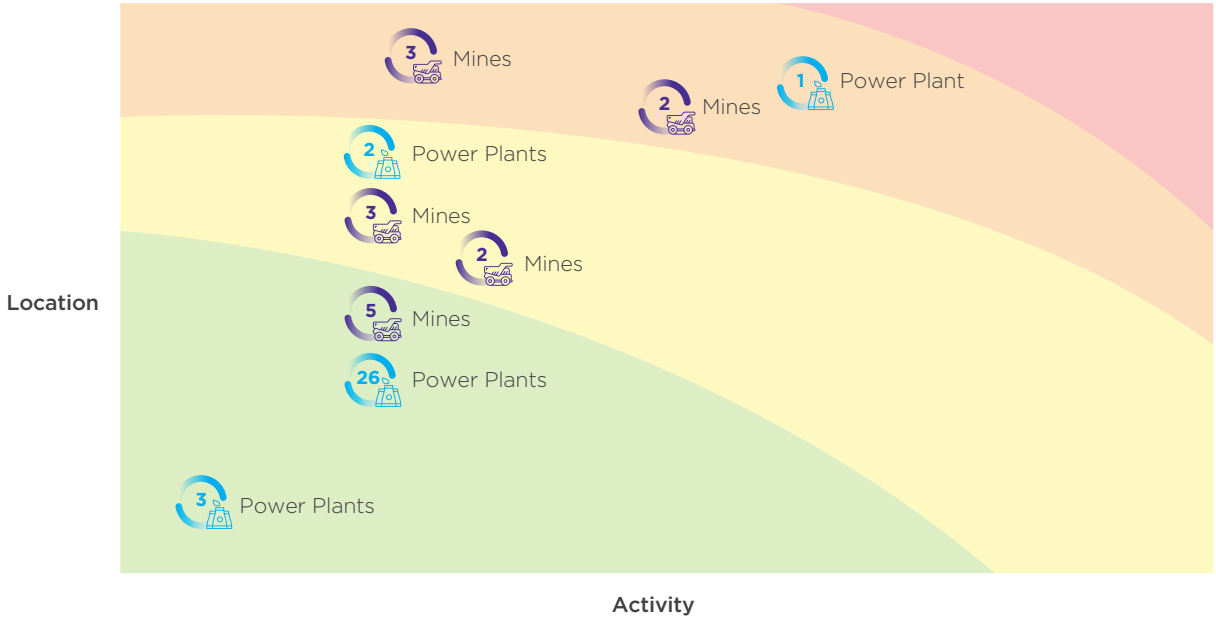
Realizing the importance of and with commitment to minimizing negative impact on biodiversity from mining activities, Embalut has been working with Mulawarman University to study the utilization of native species in rehabilitation works. Out of the four parts of the rehabilitation areas, Embalut has dedicated one zone to be an education center for the nearby communities and individuals where people can visit and learn more about native species. Before the rehabilitation began, a biodiversity survey showed that there were 236 trees (7 species), 25 saplings (4 species) and 975 seedlings (31 species) with biodiversity value in low to medium levels (0.99-2.06). The Company then grew 23,000 trees from December 2020-October 2021. Resulting from this activity, the biodiversity value has increased to 2.6, which is significantly higher than the beginning of the project. With the success of this program, the Company is committed to continuing to increase a positive impact on biodiversity at all business units.

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

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

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

RESULT OF BIODIVERSITY IMPACT ASSESSMENT



MANAGEMENT APPROACH

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

Biodiversity Policy

1 **Avoidance**
Avoid engaging in actions with adverse biodiversity impact

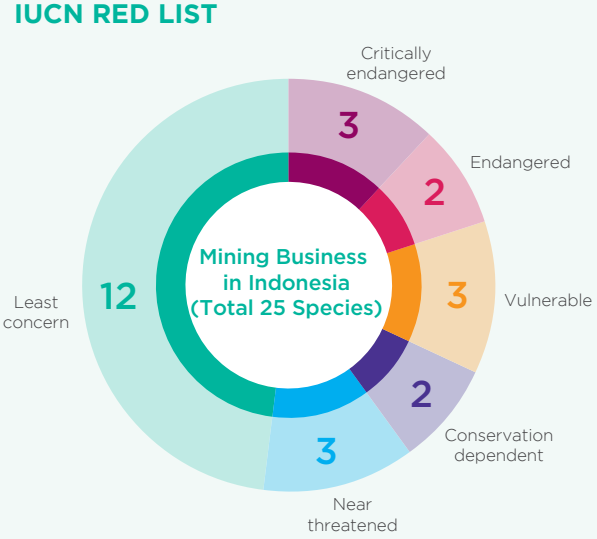
2 **Minimization**
Minimize impacts where adverse consequences cannot be avoided

3 **Rehabilitation**
Rehabilitate by planting native trees

4 **Offset**
Offsets the impacts by planing trees outside the portion areas

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

IUCN RED LIST



12 RESPONSIBLE CONSUMPTION AND PRODUCTION

MINERAL WASTE

Management Approach

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

Progress of in-pit backfilling against plan*

2021	Target 2021
99.6%	≥80%

Proportion of mines with acid mine drainage management plan**

2021	Target 2021
100%	100%

Number of significant tailings spills

2021	Target 2021
0	0

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

PERFORMANCE

Overburden

In 2021, the mining business in Indonesia had progress of in-pit backfilling at 99.6% against plan, which is far beyond the target. An increase compared with the previous year is a result of effective mine planning.

Tailings

At present, there are 3 active tailings facilities at Clarence mine, Newstan mine, and Western Coal Services in Australia, and 2 closed facilities in Indonesia. In 2021, the amount of tailings in Australia slightly increased from the previous year. Moreover, all the tailings facilities are properly managed and there is no report on significant tailings spills.

Acid Mine Drainage Management

The acid mine drainage management plans are available at all the mines which have potential acid forming materials. All mines proceeded AMD management as planned and the quality of treated water met the local standards.

ENVIRONMENTAL COMPLIANCE

Management Approach

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

Number of significant environmental incidents

2021	Target 2021
1	0

Number of significant fines from environmental non-compliance

2021	Target 2021
0	0

MINE CLOSURE

Due to the distinctive nature of the mining business, with continuously decreasing coal reserves at each site since production commencement, the Company thus prioritizes mine closure before the project launch, to return the area to the original natural state with the community and stakeholders' acceptance. The mine closure standard is developed in line with the International Council on Mining & Metals (ICMM) guideline, with considerations of potential environmental impacts that may arise from mining activities. For each site, the environmental impact assessment is performed, and the mine closure plans are developed, substantiated by progress monitoring, to ensure no impacts occur.

Mine Closure

PERFORMANCE

In 2021, one significant environmental incident has occurred at Mandalong mine in Australia. Since the widening of a small existing joint in a rock bar adjacent to the grinding groove was identified during the post-mining surveys, the Company notified the regulators and relevant stakeholders. At the same time, the restoration plan was prepared with engagement of Aboriginal groups and Heritage NSW. This plan has been endorsed for implementation and restoration work is undertaken.

Pre-mining (July 2020)

Initial post-mining (April 2021)

MANAGEMENT APPROACH

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

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

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

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

ENVIRONMENTAL MANAGEMENT SYSTEM CERTIFICATION

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

Business	No. of business unit			
	Total*	System coverage	Independent audit by the third-party	Third-party certification (ISO 14001:2015)
Mining - Indonesia	5	5	4	4
Mining - Australia	5	5	5	-
Thermal power - China	3	3	3	3
Renewable power - China	7	7	-	-
Renewable power - Japan	15	14**	-	-
Renewable power - Vietnam	4	4	-	-
Renewable power - Australia	2	2	-	-

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

COMPLIANCE SELF-ASSESSMENT APPLICATION

The Company is committed to improving the corporate risk management system, especially the regulatory compliance risk. In order to respond to remote work environments and enhance effectiveness in regulatory compliance monitoring, in 2021, the Company thus developed Compliance Self-assessment Application. This application was developed under the collaboration of compliance departments across the countries. This application ascertains that all relevant parties are fully informed of any changes in the relevant laws and regulations, able to assess risks and develop mitigation measures promptly. Furthermore, this application also aids in minimizing potential mishaps, as well as reduction in working time.

MINE SUBSIDENCE

Subsidence is common over underground mines. Inefficient subsidence management may lead to fatal injury to miners, and surface subsidence may also affect the environment. The Company integrates subsidence management into mine plans and then submits to related government agencies for approval. Moreover, subsidence management plans are available at all mines in Australia with regular review, especially if there are any significant changes.

Mine Subsidence

SOCIAL

PERFORMANCE HIGHLIGHT

		2021	Target 2021	Target 2025
Employee engagement level	✗	74%	≥80%	≥80%
High critical positions with succession plan	✗	79%	100%	100%
Employees with individual development plan	✗	56%	≥83%	100%
Banpu Heart Score	✓	78%	≥70%	≥80%
Occupational Fatalities - Employees	✓	0	0	0
Occupational Fatalities - Contractors	✗	1	0	0
Total Recordable Injury Frequency Rate - Employees	✗	15.79	≤15.26	≤10.93
Total Recordable Injury Frequency Rate - Contractors	✓	0.51	≤0.74	≤0.53
Lost Time Injury Frequency Rate - Employees	✓	1.87	≤2.77	≤1.99
Lost Time Injury Frequency Rate - Contractors	✓	0.11	≤0.19	≤0.14
Coverage of business units assessed for human rights risks	✓	86%	>70%	-
Significant human rights complaint	✓	0	0	0
Significant community complaint	✓	0	0	0
Coverage of social impact assessment	✓	30%	>30%	>90%
Coverage of community perception survey	✓	45%	>15%	>80%
Coverage of annual stakeholder satisfaction survey on community development project	✓	100%	>60%	>80%
Community satisfaction level on community development project	✓	76%	>70%	>75%
Significant resettlement complaint	✓	0	0	0
Indigenous peoples and ethnic minorities' rights violation	✓	0	0	0

8 DECENT WORK AND ECONOMIC GROWTH

EMPLOYEE MANAGEMENT

Management Approach

Human capital is at the heart of enhancing the Company's competitive edge. Also, work efficiency and work achievement are reflected by the level of employee engagement. As such, respect for equality and employee engagement plays an important role in sharpening the Company's competitive advantage.

Level of employee engagement

2021	Target 2021
74%	≥80%

Total turnover rate

2021	Target 2021
7.3%	-

Male to female remuneration ratio

2021	Target 2021
1.06	-

PERFORMANCE

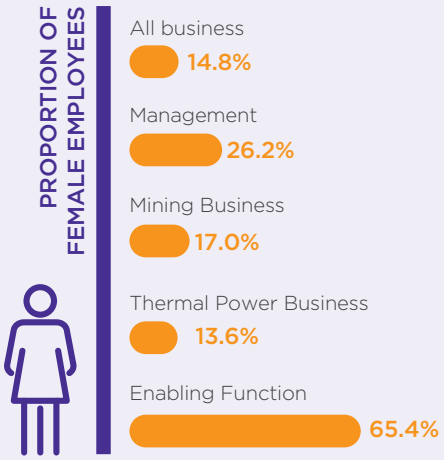
In 2021, the Company improved employment regulation to ensure relevance with evolving business context and change in laws & regulations in each country. Emphases were given on freedom and equality, with no discrimination and harassment. The engagement survey revealed that employee engagement levels were beyond targets in most countries, with an average of 74%.

In the previous year, according to the input from employee in various engagement channels, the Company adjusted welfare to better fit employees' needs. This included an additional list of flexible benefits welfare and transitioning of work anywhere policy from 2 days a week to unlimited days. This supports employees to design their working lifestyle together with supervisors freely.

To address the change in work environment under COVID-19 situation, the Company changed the employee engagement activities by highlighting on physical & mental health promotion. This included virtual one-on-one workouts, Boost Me Up program with an emphasis on caring for body and soul, and anonymous counseling psychologist service.

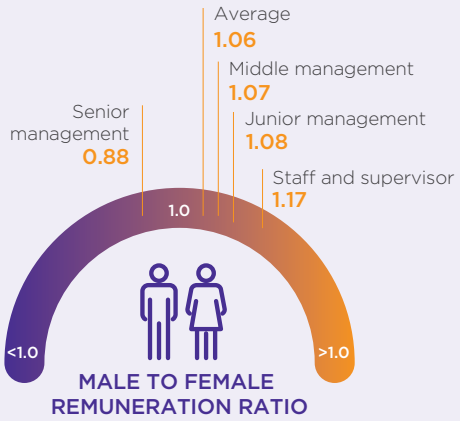
PROPORTION OF FEMALE EMPLOYEES

With respect to the principle of equality, the Company grants equal opportunities to all employees, no matter the race, nationality, language, culture, and gender. However, due to the difference of business characteristics in each country, such as open-pit mining in Indonesia and underground mining in Australia, employees in each production activity thus differ in some ways. For example, the proportion of male is higher for frontline workers, while, the proportion of female is as high as 65.4% for enabling functions.



COMPENSATION MANAGEMENT SYSTEM

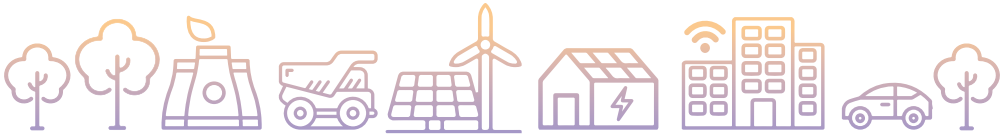
Under the governance of the Compensation Committee and Job Evaluation Committee, the Company determines compensation based on job scope and individual competencies - a single standard rate without gap between men and women. The compensation structure is reviewed every two years to ensure its competitiveness. In addition, the variable compensation based on the Company's performance, both in terms of financial and ESG performance, such as safety record and community complaint, is also annually awarded.



MANAGEMENT APPROACH

The Company aspires to develop employees as professionals by adhering to the human resources management principle, under the "One Banpu, One Goal" framework, which accentuates commitment to operate under clear vision and goals collaboratively. The Company provides equal opportunities to employees from every race, nationality, language, culture, and gender, with the 3 fundamental principles: Equitability, Performance base, and Competency base. This commences from the recruitment process, with fair consideration of all talents' qualifications, skills and experiences. The Company promotes collaborative work with diversity under the corporate culture "Banpu Heart" as well as fosters a resilience and agility mindset. Furthermore, with the belief that human capital development is one of the key success factors, the Company encourages employees to gain diverse experiences such as abroad working.

The Company has entrusted a third party to conduct an employee engagement survey annually since 2012. The survey is also translated into each country's local language to ensure thorough understanding and genuine feedback. The survey results are analyzed with breakdown by age group, gender, employment level, and working tenure to effectively address each group's particular needs. The survey result is communicated to all employees and management, as well as present to the Board of Directors annually. In practice, each business unit would analyze the survey results and develop its own improvement plan with integration as part of the annual strategy development process.



BANPU BRAND TALKS

Banpu Brand Talks are event organized annually to strengthen the brand perception of all employees. This also helps employees to spark ideas and open new perspectives on managing corporate branding. In 2021, the Company transitioned into online event as a result of COVID-19. Content strategy expert, Mr. Sitala Chanwiset, and well-known host, Ms. Parisa Jacobsen, were invited as special guests to share their experience under the topic, "When you become brand", emphasizing the importance of employees as brand ambassadors in sharing positive experiences with external stakeholders with ultimate goal to connect external parties with the Company.

PERFORMANCE MANAGEMENT SYSTEM

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

GRIEVANCE MECHANISM

Employees can submit request through various channels, such as welfare committee, supervisors, corporate governance and compliance division, or directly to the head of human resources. In case the employees wish to remain anonymous, they may choose to submit their grievances via an online channel. This is inclusive of discrimination and harassment cases.

MEASURES AGAINST CHILD LABORS AND FORCED LABORS

The Company has policies against the use of child labors and forced labors, by setting the minimum age of employees according to each country's local regulations. The transparent recruitment process has been stipulated, along with the employment contract for all recruitment transactions.

RETIREMENT READINESS PROGRAM

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

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

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

8 DECENT WORK AND ECONOMIC GROWTH

HUMAN CAPITAL DEVELOPMENT

Management Approach

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

Proportion of high critical positions with successor identified

2021	Target 2021
79%	100%

Proportion of employees with individual development plan

2021	Target 2021
56%	≥83%

Proportion of open positions filled by internal candidates

2021	Target 2021
29%	-

PERFORMANCE

In 2021, the Company revised the corporate leadership competency to ascertain the new business context and change of working environment. In addition, the human capital development roadmap had also been reviewed to ensure the alignment to this new leadership competency, which includes the technical competency development plan for the new core business.

In the past year, "Banpu Leadership Program for Future Leader" and "Banpu Global Leadership Program for First Line Leader" were consistently conducted. There was a total of 54 executives participated from every countries. Furthermore, the Company also promotes a coaching culture through "Great Coach" and "HiCoach" programs, in which emphasis is placed upon the development of coaching skills through hands-on experience. In 2021, there was a total of 21 team leaders participating HiCoach program. Currently, the Company is working on standardizing methodology to evaluate the human capital return on investment with references to the Kirkpatrick model. The pilot study was performed for HiCoach program where data collection has been started and would continue to 2022, then scale up to other programs in the near future.

Moreover, upon the implementation of "Success Factor" system as a standard tool for managing the succession planning and individual development plan, the proportion of high critical positions with successor identified increased from 63% to 79%. However, as part of the business units was in the midst of transitioning for a new system, this resulted in the proportion of employees with individual development plan remaining at 56%.

NEW LEADERSHIP COMPETENCY

To support the Company's growth with the new business context and change in working environment, in 2021, the Company launched the new leadership competency - the 5-dimension skills that contribute to company competitiveness. The new leadership competency is comprising Business Acumen, Execution & Delivery, Critical Thinking & Decision Making, Growth Mindset, and Digital Savvy. In addition, the Company had reviewed the human capital development roadmap of both employees and executives to ensure the alignment with this new leadership competency.

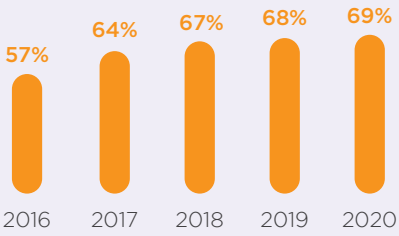
LEADERSHIP COMPETENCY

1. Business Acumen
2. Execution & Deliverable
3. Critical Thinking & Decision Making
4. Growth Mindset
5. Digital Savvy

BANPU ENGAGING LEADER

From the findings of the 2014 employee engagement survey, at the head office in Thailand, the Company has 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 level, using the notion that these managers work closely with operational staff. Result from on-going program throughout the 6 years period, employee engagement level at the head office in Thailand has significantly increased from 57% in 2106 to 69% in 2020. Such success of Banpu Engaging Leader, the Company has upgraded the program into a series of training package named "Banpu Engaging Leader Program" and expanded to all business units across the group.

LEVEL OF EMPLOYEE ENGAGEMENT



Participant	165 management
Coverage	32% of total management in junior and middle levels
Project Duration	6 years (2015-2020)
Performance Indicator	Level of employee engagement
Outcome & Impact	Increased from 57% to 69%

HICOACH PROGRAM

HiCoach is part of Banpu Engaging Leader Program, organized for the 3rd consecutive year to reinforce the coaching culture in the organization. Based on the basic coaching foundation program "Great Coach" which the Company provided to team leaders, objective of HiCoach is to strengthen coaching skills by the real practices. HiCoach is arranged as a cross-functional program in which coachee is employees from different functions in order to ensure coachee's fully benefit. There are also external experts who is the professional coach certified by International Coaching Federation (ICF), serving as mentors throughout the program. In 2021, there were a total of 21 pairs of coaches and coachees from Thailand, Singapore, Vietnam, China and Indonesia. The results of 5-dimension coaching skill assessment revealed that all 21 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, ASSESSED BY MENTOR

LEVEL OF LEADERSHIP COMPETENCY FOR HICOACH PROGRAM

Project Duration	2018 – Present
Performance Indicator	• Level of coaching skill assessed by professional coach with ICF certificated • Level of leadership competency

MANAGEMENT APPROACH

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

The Company organized the specific curriculum of leadership development programs for executives in 4 levels comprising Strategic leader, Business leader, First line leader and Future leader. Currently, the methodology to evaluate the return on employee development investment is being standardized based on international practices such as the Kirkpatrick model.

COMPETENCY DEVELOPMENT

1 COMPETENCY ASSESSMENT

2 COMPETENCY GAP IDENTIFICATION

3 INDIVIDUAL DEVELOPMENT PLAN

SUCCESSION PLANNING

The Succession Planning Committee has been appointed to oversee the succession planning and high potential management process for senior executives and critical positions. The Succession Planning Committee regularly identifies, reviews and monitors the potential successors as well as the progress of individual development plan of each nominated candidate. This process covers both new recruitment and internal talents.

SUCCESSION PLANNING AND HIGH POTENTIAL MANAGEMENT

- Determine the critical positions
- Establish key competency profiles and selection criteria
- Identify and select the potential successors
- Develop/Review individual development plans for each potential successor
- Monitor and evaluate the potential successors

HIGH POTENTIAL MANAGEMENT

To accommodate the organizational growth, the Company setups a criteria and regularly assesses potential of talents in the first line and middle management levels across all business units and grouped into the global talent pool. The development roadmap customized for those talent group is systematically designed by adopting the "Learning Solution Design" concept and the personalized learning program. This would be achieved through Learning Application Project (LAP) promoting real-life application of lessons learned. The roadmap is also designed with aiming to reskills & upskills, and provide opportunities to gain direct experience. Such cases include job rotation and cross-functional projects, with progress reports on the development progress to the Succession Planning Committee twice a year.

8 DECENT WORK AND ECONOMIC GROWTH
10 REDUCED INEQUALITIES

CORPORATE CULTURE

Management Approach

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

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

2021	Target 2021	Target 2025
78%	≥70%	>80%

PERFORMANCE

To accommodate the changing work style, in the past year, the Company has changed its system for new employee orientation to be conducted via application on mobile phone. Furthermore, the Company also continuously organizes activities promoting corporate culture, transitioning to be more online. The concept of gamification is also integrated, ascertaining employees to comprehend corporate culture as they enjoy the games. Examples include:

- Background Contest – A content on the best online meeting's virtual background
- Banpu Family Connect – An activity to encourage employees to express care and share
- HEART AM (BASSADORS) under the campaign "I can see your heart" – An activity to provide employees the opportunities to share the stories of their colleagues demonstrating Banpu Heart through their actions
- Banpu Mind Space – A creative space for employees to learn the development of collaborative innovation thinking

Following the "Banpu Heart" survey in Thailand, China, Mongolia, Indonesia, Japan and Australia in 2021, it appeared that the average level of alignment between employee behaviors and the corporate culture (Banpu Heart score) was at 78%, a significant elevation from the year prior. Upon reviews of each country's average, it appears that the alignment level in nearly all countries has increased.

BANPU HEARTWARMING KITCHEN

The corporate culture "Banpu Heart" instills upon employees the value of social responsibilities, to express care and share positive things with others, both within and beyond the Company. In 2021, the Company initiated Banpu Heartwarming Kitchen to encourage employees in adopting 10 Banpu Heart behaviors in daily life. The Company provided opportunities for employees with volunteer mindset to take actions and distribute aids to communities affected by COVID-19, by cooking meals or making meal purchases from affected communities, such as.

1. **Self-cooking meals or ordering through local food stalls:** the Company provided a food budget, addressing ingredients, packaging, and logistics expenses. Through this method, volunteering employees who have passion in cooking could join in and cook in every step, from preparation, packaging, and delivery. Meanwhile, those whose forte was not in cooking could contribute by placing orders on food stalls or small-scale restaurants affected by COVID-19.

2. **Wholehearted investment:** Employees were able to join hands and donate with the Company. The project would utilize this amount for meal preparation to continue distributing to affected communities.

Employees participated	53 employees
Communities and affiliations supported	9 communities & 6 affiliations in Bangkok and vicinity
Financial support from the Company and employees	THB 365,296

MANAGEMENT APPROACH

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

RECRUITMENT

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

ON-BOARDING

Corporate culture "Banpu Heart" workshop for new recruits

DEVELOPMENT

Strengthen through various activities and communication channels

PERFORMANCE EVALUATION

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

OCCUPATIONAL HEALTH & SAFETY

Management Approach

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

Number of fatalities - **Employee**

2021	Target 2021	Target 2025
0	0	0

Number of fatalities - **Contractor**

2021	Target 2021	Target 2025
1	0	0

Lost time injury frequency rate – **Employees**

2021	Target 2021	Target 2025
1.87	≤2.77	≤1.99

Lost time injury frequency rate – **Contractors**

2021	Target 2021	Target 2025
0.11	≤0.19	≤0.14

Total recordable injury frequency rate – **Employees**

2021	Target 2021	Target 2025
15.97	≤15.26	≤10.93

Total recordable injury frequency rate – **Contractors**

2021	Target 2021	Target 2025
0.51	≤0.74	≤0.53

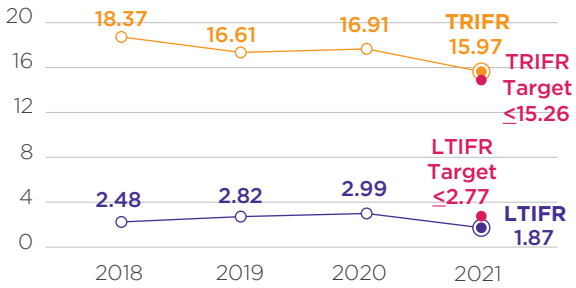
PERFORMANCE

In 2021, the Company broadened the reporting boundary to cover employees and contractors of the coal logistics activities in Thailand and Indonesia, and gas business in the U.S. Additionally, the Company has improved the OHS management system by integrating process safety and applied across the group. At the same time, incident reporting standards have been updated to cover Tier-1 process safety event. In addition, the monitoring results of work environment fully complied with regulatory requirements in all working areas.

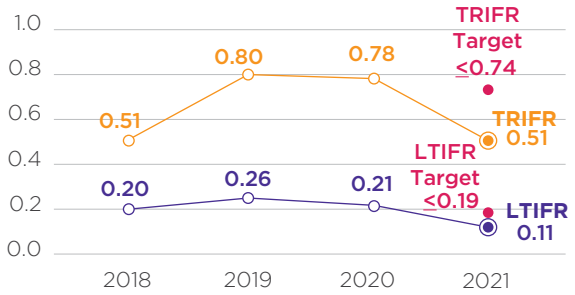
Nevertheless, there was one fatality involving a contractor in Indonesia. Investigations revealed that an operator turned on the conveyor belt while another operator was still working. According to the incident, the Company developed the following corrective and preventive measures to obviate future recurrences.

- Verify the power cut-off system to ensure isolation of the machine
- Provide appropriate Lock-out Tag-out equipment and ensure that operators have sufficient knowledge
- Review emergency response plan to determine appropriate conveyor belt stopping time, as well as emergency work procedures
- Install an alarm system to sound an alarm prior to the start of conveyor belt in case of manual operation
- Perform a detailed hazard identification and risk assessment in all work processes and put in place preventive and mitigating risk controls

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



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



In 2021, there was a significant reduction of Lost Time Injury Frequency Rate (LTIFR) as LTIFR of employees was 1.87 and contractors was 0.11 respectively. Additionally, the Company achieved target of Total Recordable Injury Frequency Rate (TRIFR) of contractors at 0.51. However, TRIFR of employees was 15.97, slightly higher than target. In addition, the Company analyzed key types of injuries and discovered that most injuries included muscle and tendon injuries, trauma from impact, and having open wounds. Analysis was also done based on key causes of injuries, which included tripping, slipping, falling, overexertion, and being clamped or pulled by objects. Moreover, based on the risk assessment, there were 2 high-risk activities identified and the following preventive measures were setup.

High-risk activity	Preventive measure
Operation with heavy equipment	• Review risk assessment of all risk activities • Install alarm equipment to reduce potential risks to operators • Conduct safety training and toolbox meetings, with emphasis on danger areas • Promote and monitor to ensure that operators strictly comply with safety standards
Operation with machinery that ignite, pivot, pull, or clamp	• Review work operating standards • Emphasize the importance of toolbox meeting prior to work • Inspect compliance against safety standards by supervisor • Promote safety culture

MANAGEMENT APPROACH

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

OHS Policy

ZERO INCIDENT
eliminate unsafe behavior or working conditions

ZERO REPEAT
prevent recurrence of incident

ZERO COMPROMISE
adopt non-negotiable safety standards

In order to achieve the "3 Zeroes" target, the management system, including related policies, targets and strategies, is regularly reviewed to ensure its compliance with the relevant laws and regulations and continuous improvement. This also includes providing platforms to share knowledge and lesson learned, such as the ESG Summit, a corporate strategic meeting with the CEO as chairman. Additionally, OHS performance is one of the KPIs of CEO and management at all business units. To follow up on the progress towards the targets, the Company collects the safety performance of each business unit. The data collection system covers all workers under the control work and control workplaces. These include employees, contractors, and third-party permitted to enter operational areas. Nevertheless, due to some limitations, the Company only collects working hours of contractors in Thailand and Indonesia, whose onsite work exceeds 5 consecutive days. The Company is in the process of developing the data collection system for contractors whose work is less than 5 days, and expects to disclose this information in the Sustainability Report 2024. With respect to workers outside of the "control work" or "control workplace", the Company will record their incidents but will not include in the safety statistics.

OHS MANAGEMENT SYSTEM CERTIFICATION

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

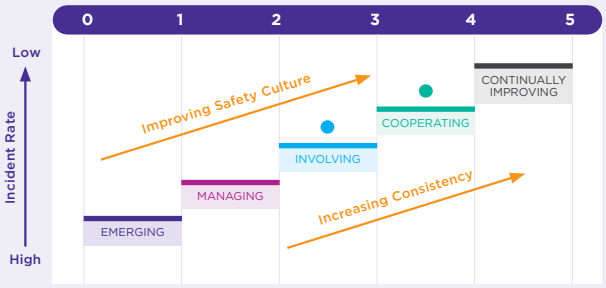
Business	No. of business unit		
	Total*	System coverage	ISO 45001:2018 certification
Mining - Indonesia	5	5	3
Mining - Australia	5	5	-
Thermal power - China	3	3	3
Renewable power - China	7	7	-
Renewable power - Japan	15	14**	-
Renewable power - Vietnam	4	4	-
Renewable power - Australia	2	2	-

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

SAFETY CULTURE MATURITY LEVEL ASSESSMENT

The Company has conducted the safety culture maturity level assessment continually since 2018. The assessment's outcomes are used to improve the OHS management system. In 2021, the assessment was conducted at 2 solar power plants in China & 1 mine in Indonesia with resulted at Involving level and also at 1 combined heat & power plant with resulted at Cooperating level. This led the cumulative coverage of safety maturity level assessment to 66% of all business units. Consequently, the Company has supported all business units to improve the safety culture to reduce the incidents.

SAFETY CULTURE MATURITY LEVEL



Result in 2021
- 2 Solar power plant in China and 1 mining in Indonesia
- 1 Combined heat & power plant in China

CRAB TRAP

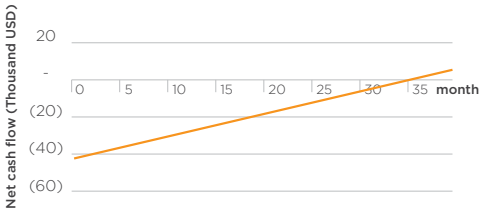
An analysis of historical records showed that one of the most frequent incidents in Myuna mine in Australia is that a miner stuck into ventilation tubes during installation. To prevent such risk, the Company established a working team, including representatives from OHS and related departments to improve such work conditions. The working team invented an equipment called "Crab Trap" that can be attached to the end of ventilation tubes to prevent the incident. The Crab Trap also enables workers to be more convenient to lift the tube during installation. After the introduction of Crab Trap, Myuna significantly reduced the number of similar incidents from 18 times in 2020 to zero. As a result, Myuna can increase productivity by reducing lost time about 240 hours annually.

Budget	USD 7,308
No. of involved employees	16 persons
Financial impact	
• Saving medical treatment cost	USD 15,000
• Increasing productivity	USD 59,616
• Saving training cost	USD 4,162
SROI (2021)	1:10.78

SAFETY DOUBLE CONTROL

In 2021, Luannan power plant developed "Safety Double Control" application as a tool to report risks related to safety in operational areas. With this application, workers can timely report unsafe conditions to related persons to take preventive measures. By implementing the application, Luannan successfully reduced average time spent on risk reporting by 50% and cut accident down to zero. This also promoted innovative culture across employees. The application will be breakeven in 33 months from such benefits. Moreover, Luannan received certification as a workplace with outstanding occupational health and safety management from this project.

Budget	USD 43,000
No. of involved employees	7 persons
Financial impact (annual)	
• Reducing reporting time	USD 2,142
• Reducing no. of accident	USD 12,000
• Saving training cost	USD 1,575



PIT-SLOPE MONITORING APPLICATION

To control the landslide, which is one of the major risks in open-pit mining that may lead to severe accident or business interruption, the Company developed "Pit-slope Monitoring Application" or PMA that was first introduced at Barinto mine in 2020. The application assesses risks of landslide by analyzing information from onsite sensors. If there is a potential of a landslide, the system will alert responsible persons to activate prevention measure. After implementation of PMA, landslide at Barinto significantly reduced by 87.5% compared to the same period last year. PMA also reduces work hours spent in re-shaping the area after landslide. Following the success of PMA at Barinto, the Company extended to Embalut, Jorong and Trubaindo in the same year. Moreover, the Company also planned to increase the application functionality by integrating with other related systems.

Budget	USD 37,562
No. of involved employees	8 persons
Financial impact	
• Reducing no. of landslide	USD 72,877
• Reducing work hours in case of landslide	USD 226
SROI (2020-2021)	1:1.95

REMOTE MONITORING SYSTEM FOR HEAT EXCHANGER STATION

In 2021, Zhengding power plant developed the remote monitoring system for heat exchanger station to replace the manually control by worker. In this regard, several equipment and systems were installed including:

1. Digital management platform to control key parameters of the heat exchanger such as temperature, flow rate, pressure and pump speed
2. Sensors at valve and related equipment to collect real-time condition such as pressure and temperature, for the control units
3. Frequency convertor to control pump rotational speed
4. Camara to observe status of the heat exchanger

After installation of all equipment, the number of onsite workers reduced from 200 to 40 persons, which led to the reduction of occupational risk related to noise and heat. From the installation of frequency converter, the electricity consumption was 18.4% reduced. Furthermore, Zhengding received "Advanced Central Heating Supply Unit" award from the government for this project.

Budget	USD 854,550
No. of involved employees	5 persons
Financial impact	
• Saving labor cost	USD 708,000
• Saving medical treatment cost	USD 12,000
• Saving electricity cost	USD 129,600
• Saving training cost	USD 1,125
SROI (2021)	1:0.996

HUMAN RIGHTS

Management Approach

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.

Coverage of business units assessed for human rights risks*

2021	Target 2021
86%	>70%

Number of significant human rights issues

2021	Target 2021
0	0

* Assessment conducted at least once in 3 years

PERFORMANCE

The human rights risk assessment was conducted in 2020. Although the assessment result showed no significant human rights risk, the Company continues to monitor any issues concerning human rights with ongoing preventive measures as follows:

Human rights issue	Preventive measure
Occupational health and safety (Legal protection)	• Provide safety orientation and annual safety training • Conduct annual emergency evacuation and fire drills • Develop COVID-19 prevention measures • Communicate through various channels, such as e-newsletter • Arrange monthly meetings of the health and safety committee
Personal data protection (Legal protection)	• Provide training and education program • Promote awareness through e-newsletter
Employment (Labor rights, equality, and collective bargaining)	• Establish the welfare committee with employee representative to discuss on welfare & benefits • Respect employees' right to freely and voluntarily form or join unions or similar bodies without interference as stated in the Employee Relations Policy. At present, there are labor unions in Indonesia and Australia, where 72% of employees in those two countries or 52% of the total employees being members of labor unions
Security forces	• Comply with the Voluntary Principles on Security and Human Rights. The Company's security guards in all areas do not practice violence and are unarmed in all work areas • Arrange regular training on human rights

In 2021, the Company thoroughly reviewed the human rights due diligence process to ensure its coverage of all human rights issues throughout the supply chain. Furthermore, knowledge sharing on human rights was conducted in Indonesia, China and Australia for the upcoming human rights risk assessment in 2022.

Centennial, our subsidiary in Australia, announced the Modern Slavery Statement in 2021 in support of the Modern Slavery Act. Centennial also disclosed results of ESG self-assessment which was conducted by business partners with high risks. Coverage of assessment includes compliance to laws and regulations, human rights, labor practices, occupational health and safety, environment, community, and code of business conduct. The assessment results showed that there are some human rights-related risks as follows:

Risk	Preventive/Corrective action
Failure to comply with labor laws in the supply chain	• Announced supplier code of conduct • Announced employee code of conduct

2020 Modern Slavery Statement

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 the freedom, equality and human dignity without discrimination against gender, race, religion or skin color in order to prevent and avoid human rights violations among employees, suppliers, customers, contractors, communities and vulnerable groups, namely children, women, the disabled, indigenous people, migrant workers and the elderly.

Human Rights Policy

The Company has announced the human right due diligence manual as a framework for assessing human rights risks, covering all major human rights risks across business supply chain.

HUMAN RIGHT DUE DILIGENCE

The Company also has in place a grievance mechanism, comprising various channels for different types of complaints and stakeholders. For example, the Company provides whistleblowing and compliant investigation procedure for corporate governance matters and provide several channels such as letters, emails and telephone, to handle complaints from the community.

17 PARTNERSHIPS FOR THE GOALS

COMMUNITY ENGAGEMENT

Management Approach

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

Number of significant community complaints

2021	Target 2021
0	0

Proportion of significant complaints from communities resolved through a dispute mechanism

2021	Target 2021
NA*	95%

Proportion of business units with social impact assessment

2021	Target 2021	Target 2025
30%	>30%	>90%

Proportion of business units with community perception surveys

2021	Target 2021	Target 2025
45%	>15%	>80%

* No significant community complaints

> "The economic development initiatives gave us a lot of benefits. I have been living in this village for my entire life, and there is less job opportunity as I get older. With the Company's programs, I have been equipped with technical skills, which could increase my job opportunities. Nowadays, not only my income is increasing but also the quality of life. Importantly, I have gained social respect from others."
>
> **Mr. Zheng Chuanhang**
> **Villager of Zheng Wei Village**

PERFORMANCE

In 2021, the Company arranged 29 Community Consultative Committee (CCC) meetings with all related villages in Indonesia and arranged 17 sub-committee meetings at the mine cluster level in Australia. According to the meetings, most of communities put priority on improving their quality of life, especially in health and economy. The environmental and social impact assessment (ESIA) had been conducted in all business units and operational performance is regularly reviewed. Moreover, there was no significant community complaint from all operations.

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

MANAGEMENT APPROACH

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

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

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

The Company has setup the community engagement function in each business unit to ensure that local communities have truly engaged with the Company and all development programs will genuinely benefit the communities. In practice, the community engagement approach in each country varies according to local business characteristics and community contexts. For example, in Indonesia and China, the Company has appointed Community Development Officer (CDO), while in Australia, an Environment coordinator has been appointed. All activities and community complaints are monitored by the community engagement department at the country and corporate levels to ensure the same standard applied.

> “The Awabakal & Guringai Peoples have had an ongoing working relationship with Centennial for more than 11 years. The Aboriginal Cultural Heritage Committee gives us all an avenue to come together to strengthen our ongoing relationship to discuss the significance of the commitments concerning environmental assessments, pre and post-mining surveys. Moreover, the Cultural Heritage understanding of the connectivity and aspects of the region’s landscapes, holistic perspectives and revealing how one area is connected to the next has brought a better overall understanding of the aspects of the study area. This also takes into consideration the diversity of our culture. As a representative of the Awabakal & Guringai People, I admire that the Company emphasis on cultural heritage and promotes the long-term goals of working together for a better and sustainable.”
>
> **Mr. Kerrie Brauer**
> **Director, Awabakal & Guringai Peoples**

> “Wellington Valley Wiradjuri Aboriginal Corporation (WVWAC) has been working with Centennial since 2009. During this time, Centennial developed strong relationships with not only our Registered Aboriginal Party but with a small core group of other Registered Aboriginal Parties. The Western Region Aboriginal Cultural Heritage Management Committee openly shared potential impacts on cultural heritage sites. During these meetings, there are often information and knowledge exchanges. Management Plan has been developed as a comprehensive framework on how to manage each Heritage site and as a protocol to follow if a Heritage site is identified including the procedures involved in Archaeological assessments and excavations. WVWAC has ensured that our heritage is protected through the good relationships we have built with Centennial.”
>
> **Mr. Brad Bliss**
> **WVWAC CEO and Contact Officer**
> **Wellington Valley Wiradjuri**

COMMUNITY DEVELOPMENT

Management Approach

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

Coverage of annual stakeholder satisfaction survey on community development projects

2021	Target 2021
100%	>60%

Average stakeholder satisfaction level on community development projects

2021	Target 2021
76%	>70%

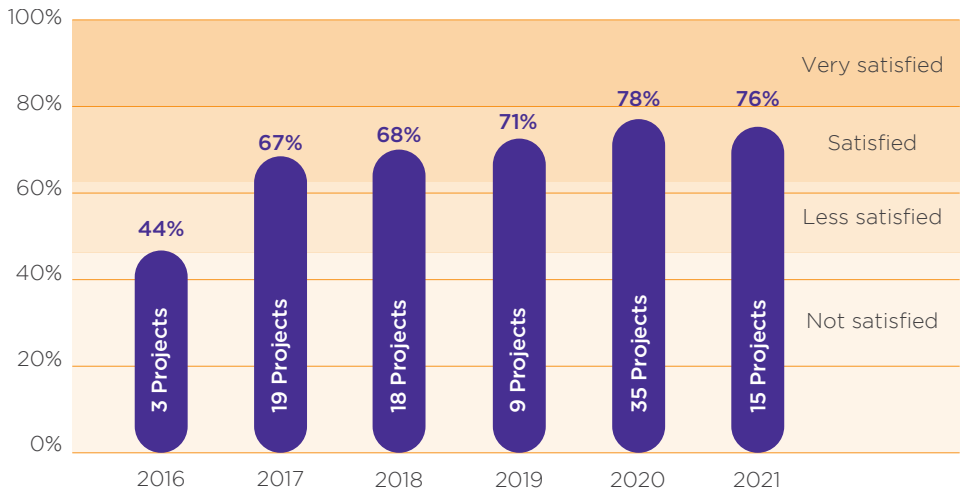
"The Company has actively assisted our local community in sustainable growth, developing infrastructure and improving well-being of the community members, especially the elderly. Our village is in a rural area and considered as a developing community. Thus, in consultation with residents, the Company has provided technical trainings and job opportunities to them. Moreover, the local well-being is considered important; thus, the Company supports an in-kind contribution focusing on the elderly. We are so appreciative of all the philanthropic deeds."

Mr. Yin Yanling
Village Head of Ma Ziyu Village

PERFORMANCE

In Indonesia, the Company conducted annual stakeholder satisfaction survey on community development projects at all mines. The surveys were conducted for 15 community development projects with an average satisfaction level of 76%, which is considered as a "Satisfied" level. In China, community development projects are being implemented with plan to conduct a stakeholder satisfaction survey in 2022.ct a stakeholder satisfaction survey in 2022.

AVERAGE STAKEHOLDER SATISFACTION LEVEL



MANAGEMENT APPROACH

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

Community Development Policy

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

DAYAK CULTURAL CONSERVATION

Dayak tribe is an indigenous people in Kalimantan, Indonesia, living near Trubaindo mine. With recognition of the importance on preserving Dayak's local customs and culture, Trubaindo has engaged the Dayak community leaders in "Dayak Cultural Conservation Project" to build the Dayak traditional house, with over IDR 7,000 billion of budget. When the construction was completed in June 2021, it becomes cultural exhibitions, office of Dayak custom leaders, and meeting rooms. The utilization and maintenance of this traditional house is managed by a committee. In addition, this house is planned to be promoted as a cultural tourist attraction in the future. Furthermore, Trubaindo has supported the solar power panels to instead of diesel generators, which reduces the GHG emissions by 0.25 tonnes CO_2e each year.

Ingigenous Peoples

RESETTLEMENT

When a project is developed close to communities, it is sometimes necessary to relocate the people residing in the licensed area. Poor management can have adverse consequences on the quality of life of existing communities and the Company's social license to operate. The Company's resettlement management standard is developed in line with international guidelines such as the International Finance Corporation (IFC) and the International Council on Mining & Metals (ICMM). It is clearly stated that unnecessary resettlement should be avoided. There were no resettlement taking place in the Company's ongoing projects, therefore no resettlement complaints have been reported.

Resettlement

SDGs 3.8

ELECTRICITY FOR COMMUNITY HEALTH CENTER

The Benangin Health Center is the center for health services for communities surrounding Bharinto mine. Nevertheless, the center was challenged by irregular electricity supply and no electricity at nighttime. The center had relied on one generator, which was insufficient to sustain operations. Bharinto hence supported a 6,000 kWh solar power panels to supply electricity. This supported vaccine storage, which requires electricity to retain vaccine quality, during the COVID-19 pandemic and helped the center to service 2,855 community members around the clock. Additionally, this also helped save USD 4,816 of diesel cost previously consumed each year or reduce 148.59 tonnes CO_2e annually.

Total budget	USD 11,908
Participants of Community Health Center	2,855 persons
Reduce GHG emissions (annual)	148.59 tonnes CO_2e
Save fuel cost (annual)	USD 4,816
Social Return on Investment (SROI)	1:17

SDGs 4.4

UNIVERSITY SCHOLARSHIP PROGRAM

The Bharinto mine realizes the importance of education and capacity development of the youth. As these are aligned with community needs, the Company has awarded scholarships to students pursuing bachelor's degrees and diplomas since 2012. Currently, there are 85 scholarship recipients, most of whom were able to pursue various occupations, including teachers, health experts, and employees. They earn an average income of USD 200-500/month/person, contributing to a better quality of life for their families.

Total budget	USD 166,772
Scholarships supported	85 persons
Generate income per month	USD 200-500

SDGs 2.3

SME PROMOTION FOR WOMEN

The Company recognizes the importance of women and is committed to supporting income generation for 3 housewife groups in 2 villages in Karang Rejo and Jorong. The Jorong mine hence supported housewife groups in producing Sasirangan batik, a local fabric in the southern Kalimantan region. Jorong organized batik-making training and provided knowledge on using natural colors to reduce pollution generated from chemical use. The housewife groups leveraged batik to make various value-added products, including face masks, bags, and shirts. Further trainings on marketing were also conducted to assist with business development. As a result of this support, 2 housewife communities in Karang Rejo produced 5,450 pieces of product and another 313 pieces were produced by housewife group in Jorong village. This generated a total income of IDR 330 million for 19 group members, contributing to improve quality of life. Additionally, the Company also supported housewife groups in producing face masks during the COVID-19 pandemic. They produced 2,347 masks in the past year.

Total budget	IDR 144 million
Participants	19 persons
Generate total income	IDR 330 million

SDGs 2.3

LOCAL ECONOMIC DEVELOPMENT AT DEYUAN

The Deyuan solar power plant is situated on a large pond, and surrounded by 3 local communities whose main livelihood is centered around fishing. The power plant's community development initiative is guided by the goal of sustainability and community confidence and trust. Nevertheless, the Chinese Government has recently announced more stringent environmental standards in its fishing sector, causing fishing communities to discontinue their activities. The Company has carefully reviewed these regulations and discovered that they still allow local communities to conduct natural fishing activities. The Company then allowed local communities to conduct natural fishing activities without fees. Fishermen also assist in removing water weeds. This has allowed fishermen to sustain their livelihood and secure an income, while helping the Company reduce maintenance costs and maintain good relationships with surrounding communities.

SDGs 4.4

WELDERS AND MECHANICS TRAINING PROGRAM

The Embalut mine has organized a specialized skills training program and created livelihood opportunities for 24 youths. This included steel welding training for 12 individuals and motorcycle repair training for 12 others. Within 10 days following the training, 12 youths received the opportunity to work within factories, government agencies, and in the mining industry. One opened a metal works store to service their community. This project generated an average monthly income of IDR 3.2 million for each participant and strengthened the local economy with highly skilled youths.

Total budget	IDR 131 million
Participants	24 persons
Generate total income	IDR 3.2 million/ month/person

SDGs 12.5

COMMUNITY WASTE BANK AND DIGITALIZATION

Concerning the efficient use of natural resources and reduction of waste generation, as well as promoting health & sanitation in the community. Embalut mine and Community Consultative Committee have initiated the waste bank program, starting at Separi village since 2015. The program was designed to encourage local households to sort and sell waste that can be recycled to waste banks. Currently, 4 waste bank groups are operating, and 40 deposit locations have been located in 4 villages. At present, there are 1,423 households becoming waste bank customers, with more than 50 tonnes of accumulative waste being effectively managed. The program also promotes local product development from waste recycled, such as handbags, pouches, and eco-bricks, which were used for household items and sold at exhibition events. The groups can earn an annual income of IDR 79 million, while the customers also generate an additional annual income of more than IDR 206 million from waste selling. Currently, the waste bank groups have 35 executive committees, most of tenure by women, who are invited by government authorities, to share their knowledge and experiences from waste management in other villages. Since the beginning, the SROI ratio was 1:0.95.

In 2021, the Embalut worked with local startup groups in developing the "Antaran" application, with one of the objectives being to manage waste. Those interested can register and use the application through their mobile phones or computers to alert waste collectors to retrieve waste at designated times. Currently, there are 900 users and 350 waste collectors with application utilization rate of more than 700 times and 4 tonnes of waste collected per month.

Total budget (2015-2021)	IDR 78.5 million
Participants	1,423 households
Generate income (2015-2021)	IDR 206 million
Social Return on Investment (SROI)	1:0.95

COMMUNITY DEVELOPMENT DURING MINE CLOSURE PHASE AT TANDUNG MAYANG

The Company gives importance to mine closures since before project inception to return the land back to nature, as well as preparing readiness for surrounding communities to continue their life sustainable after the closure. The Tandung Mayang mine is the Company's first mine to enter the closure phase. The mine still occupies a total space of 2,338 acres and is located in eastern Kalimantan. The Company started surveying the location in October 1995, and started operations in December 1999 before closing it in 2015.

During operation, the Company regularly engaged the community, following its goal to sustainably improve community well-being. It set up community consultation committees in 6 surrounding villages. The committees are composed of representatives from the state, the community and the Company as members, and have been established to conduct community development activities. During the mine closure phase, the Company strived to support 11 community development projects in 3 key development areas. Those 3 areas derived from the communities' needs which include education, health improvements, and economic development. Every project has proceeded as per targets, with a total budget of IDR 2,135 million and 895 beneficiaries.

Progress
100% target achieved

Beneficiary
895 persons

Total budget
IDR 78.5 million

Project	SROI Ratio
Scholarships program	1:1.32
Welding skills training program	1:1.54
Use and maintenance of heavy machinery training program	1:1.71
Health development program	1:2.23
Food nutrient for children promotion program	1:1.77
Palm plantation knowledge sharing	1:2.31
Fertilizer production promotion program	1:1.10
Palm plantation consultation program	1:2.32
Cattle raising promotion program	1:3.77
Cattle raising consultation program	1:2.31
Cattle farming	1:1.15
Average	1:1.94

The Company has evaluated the social returns of the 11 community projects supported by the Company. The average social return is 1:1.94. Additionally, the Company also conducted community satisfaction surveys between 2018 and 2020, with average scores of 76.63, 79.54, and 79.07, respectively, or at a "Satisfied" level.

Project	Average stakeholder satisfaction level (%)		
	2018	2019	2020
Education	76.63	76.25	76.01
Health improvements		75.69	74.22
Economic development		86.68	86.98

In order to be in conformance with regulations, the Company conducted a mine closure assessment with government agencies as verifiers in 2017, 2019, and 2021. It discovered that the Company's actions were in alignment with all targets. Additionally, the closure of Tandung Mayang was also approved by the community prior to being returned to the government agency in 2021.

EXAMPLES OF COMMUNITY DEVELOPMENT PROJECTS AT TANDUNG MAYANG

USE AND MAINTENANCE OF HEAVY MACHINERY TRAINING PROGRAM

The Company conducted community need surveys and discovered that youth skills development, together with a labor market that demanded workers with skills for mechanical work, was prioritized by the community. The Company hence conducted training on the use and maintenance of heavy machinery and welding skills training for the youth. Total of 48 participants took part in the program. Following the training, all participants were able to secure employment with the Company's sub-contractors, other companies in the area, or with entrepreneurs in their local communities. In addition to mechanical skills development, the Company also provided the youth with training on positive thinking.

HEALTH DEVELOPMENT PROGRAM

Surveys on infant and young children's health in the community discovered that large numbers of children have sub-standard health. Most families lacked knowledge on good mother and children healthcare management and hygiene. The Company hence worked with Teluk Pandan, a public health center, on conducting programs to improve the health and hygiene of mothers and children in 6 villages. During mine closure, 442 individuals benefited from the program. Additionally, the Company also supported securing 1,563 sets of infant food supplements to prevent malnutrition. Mid-project surveys unveiled that the number of malnourished children substantially decreased. At the end of the program, there was no child under the age of 5 who was malnourished.

Year	Number of infants and young children			
	Total participants	Under standard level	Under acceptable level	Malnutrition
2016	1,432	240	76	2
2017	1,545	180	67	1
2018	1,474	128	49	0
2019	1,474	119	20	0

> We are grateful for the assistance at the community health center. The support of solar panels will help increase medical services at the Benangin health center. Our existing operations are unable to employ medical equipment that requires energy since electricity is only accessible in the afternoon from 6 to 12 hours, resulting in inefficient health services. We also use a separate generator that consumes fuel to store the COVID-19 vaccine. Our health center will be able to serve the community more effectively with the support of this solar roof.
>
> **I.W Sutenaya**
> **Head of Puskesmas Benangin**

> We are grateful to the Government's Kandolo Village and ITM for assisting with the clean water program in our village. We used to collect rainwater, but now we have the community clean water supply that is readiness and sufficient for the whole year. Formerly, children seldom had baths, they were prone to skin problems in the past. However, the situation has ceased and no longer occurs. Our community enterprise, BUMDes, established the water meter connection to our homes. Literally, the entire cost was IDR 1,500,000 and we can pay installments to get the water. The cost of water is IDR 5,000 per cubic meter. On behalf of the village members, I would like to take this opportunity to express our sincere gratitude to the Company for supporting this helpful project.
>
> **Mahyudin**
> **Head of Salimpus sub-village, Kandolo Village**

LIST OF BUSINESS

As of 31 December 2021

ENERGY RESOURCES

Mining Business

Country	Name	Type	Status	Production volume		Ownership
				100% basis	Equity-based	
Indonesia	Indominco	open-pit coal mine	operating	7.3 Mt	4.9 Mt	67.13%
	Trubaindo	open-pit coal mine	operating	3.7 Mt	2.5 Mt	67.13%
	Bharinto	open-pit coal mine	operating	4.8 Mt	3.2 Mt	67.13%
	Jorong	open-pit coal mine	operating	0.9 Mt	0.6 Mt	67.13%
	Kitadin-Embalut	open-pit coal mine	operating	1.4 Mt	1.0 Mt	67.13%
	Graha Panca Karsa (GPK)	open-pit coal mine	project development	-	-	67.13%
	Tepian Indah Sukses	open-pit coal mine	project development	-	-	67.13%
	Nusa Persana Resources	open-pit coal mine	project development	-	-	67.13%
China	Gaohe	underground coal mine	operating	9.3 Mt	4.2 Mt	45%
	Hebi	underground coal mine	operating	0.7 Mt	0.3 Mt	40%
Australia	Airly	underground coal mine	operating	1.3 Mt	1.3 Mt	100%
	Clarence	underground coal mine	operating	1.7 Mt	1.4 Mt	85%
	Mandalong	underground coal mine	operating	3.8 Mt	3.8 Mt	100%
	Myuna	underground coal mine	operating	0.9 Mt	0.9 Mt	100%
	Springvale	underground coal mine	operating	2.1 Mt	2.1 Mt	100%
	Angus Place	underground coal mine	care & maintenance	-	-	100%
	Newstan	underground coal mine	care & maintenance	-	-	100%
	Inglenook	underground coal mine	project development	-	-	100%
	Neubecks	open-pit coal mine	project development	-	-	100%
Mongolia	Altai Nuurs	coal mine	project development	-	-	100%
	Unst Khudag	coal mine	project development	-	-	100%
	Tsant Uul	coal mine	project development	-	-	100%

Gas Business

Country	Name	Type	Status	Production capacity (100% basis)	
The U.S.	Marcellus	shale gas production	operating	156 MMcfed	100%
	Barnett	shale gas production	operating	528 MMcfed	100%

ENERGY GENERATION

Thermal Power Business

Country	Name	Type	Status	Production volume		Ownership
				100% basis	Equity-based	
Thailand	BLCP	coal-fired power plant	operating	1,434 MW	717 MW	50%[a]
Lao PDR	HPC	coal-fired power plant	operating	1,878 MW	751 MW	40%[a]
China	Zhengding	combined heat & power plant	operating	139 MW	139 MW	100%[a]
	Luannan	combined heat & power plant	operating	227 MW	227 MW	100%[a]
	Zouping	combined heat & power plant	operating	247 MW	173 MW	70%[a]
	SLG	coal-fired power plant	operating	1,320 MW	396 MW	30%[a]
Japan	Nakoso	integrated gasification combined cycle power plant	operating	543 MW	73 MW	33.5%[a]
The U.S.	Temple I	gas-fired power plant	operating	768 MW	768 MW	100%

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

Renewable Power Business[a]

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%

Renewable Power Business[a]

Country	Name	Type	Status	Production volume		Ownership
				100% basis	Equity-based	
China	Xingyu	solar power plant	operating	10.30 MW	10.30 MW	100%
	Jixin	solar power plant	operating	25.22 MW	25.22 MW	100%
Japan	Olympia	solar power plant	operating	10.00 MW	4.00 MW	40%
	Hino	solar power plant	operating	3.50 MW	2.63 MW	75%
	Awaji	solar power plant	operating	7.90 MW	5.93 MW	75%
	Nari Aizu	solar power plant	operating	20.46 MW	20.46 MW	100%
	Mukawa	solar power plant	operating	17.00 MW	9.52 MW	56%
	Kurokawa	solar power plant	operating	18.90 MW	18.90 MW	100%
	Tenzan	solar power plant	operating	1.96 MW	1.96 MW	100%
	Muroran 1	solar power plant	operating	1.73 MW	1.73 MW	100%
	Muroran 2	solar power plant	operating	1.63 MW	1.63 MW	100%
	Takeo II	solar power plant	operating	1.00 MW	1.00 MW	100%
	Yamagata	solar power plant	operating	20.00 MW	20.00 MW	100%
	Yabuki	solar power plant	operating	7.00 MW	5.25 MW	75%
	Shirakawa	solar power plant	operating	10.00 MW	10.00 MW	100%
	Kesennuma	solar power plant	operating	20.00 MW	20.00 MW	100%
	Nihonmatsu	solar power plant	operating	12.00 MW	12.00 MW	100%
	Yamagata Iide	solar power plant	project development	200.00 MW	102.00 MW	51%
Vietnam	El Wind Mui Dinh	wind power plant	operating	37.60 MW	37.60 MW	100%
	Ha Tinh	solar power plant	operating	50.00 MW	50.00 MW	100%
	Nhon Hai	solar power plant	operating	15.00 MW	15.00 MW	100%
	Chu Ngoc	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%
Australia	Beryl	solar power plant	operating	110.90 MW	110.90 MW	100%
	Manildra	solar power plant	operating	59.90 MW	59.90 MW	100%

[a] Information as of 28 February 2022, which includes 50 MW from the purchase and sale agreement to invest in Nhon Hai and Chu Ngoc solar power plants in January 2021, in which transaction will be completed in the second quarter of 2022. In addition, the information excluded 142 MW, an equity-based capacity of Sunseap, as the purchase and sale agreement for divestment of shareholding in Sunseap Group Pte. Ltd. was completed on 22 February 2022.

ENERGY TECHNOLOGY

Solar Rooftop & Floating[a]

Country	Name	Type	Status	Production capacity	Ownership
Thailand	Banpu NEXT	solar rooftop	operating	37.00 MW	100%
	Banpu NEXT	solar floating	project development	16.00 MW	100%

[a] Information as of 28 February 2022, which includes 212 MW an equity-based capacity of Sunseap, as the purchase and sale agreement for divestment of shareholding in Sunseap Group Pte. Ltd. was completed on 22 February 2022.

Energy Storage & System

Country	Name	Type	Status	Production volume		Ownership
				100% basis	Equity-based	
China	Durapower	energy storage	operating	1.0 GWh	0.5 GWh	47.68%

Smart Community

Country	Name	Type	Status	Production capacity	Ownership
Thailand	Banpu NEXT	smart community	project development	20 projects	100%

Electric Vehicle

Thailand	Banpu NEXT	e-Ferry	operating	1 unit	100%
	Urban Mobility Tech	electric vehicle fleet	operating	2,100 passengers/day on 129 cars	39.3%
	eVolt	EV charging station	operating	102 stations	15%
	Banpu NEXT	car sharing	operating	100 vehicles	100%

Energy Trading

Japan	Banpu Power Trading G.K.	energy trading	operating	712 GWh	100%

STAKEHOLDER ENGAGEMENT

ENGAGEMENT CHANNEL AND STAKEHOLDER'S ISSUE

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

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

DATA BOUNDARY

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

For business entities that the Company holds a greater than 50% of shares and has management control as listed below, the data collection system is under standardization.
- Smart community business in Thailand
- Energy trading business in Japan
- Gas business in the U.S.

PERFORMANCE DATA

ECONOMIC PERFORMANCE

	2018	2019	2020	2021
Revenues (USD million)	3,481	2,759	2,283	4,124
EBITDA[a] (USD million)	1,178	701	563	1,778
Net profit (USD million)	205	(20)	(56)	304
Gross profit margin	35%	26%	20%	42%
Interest coverage ratio	3.8	2.4	2.5	5.8
Net debt to equity ratio	1.02	1.23	1.47	1.31

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

TAX PAYMENT – BY COUNTRY

	2018	2019	2020	2021
Indonesia				
• Net profit before tax (USD million)	367	186	725	621
• Income tax (USD million)	(109)	(59)	(35)	(146)
• Income tax paid (USD million)	(109)	(111)	(63)	(61)
• Income tax rate	25%	25%	22%	25%
China				
• Net profit before tax (RMB million)	126	162	339	51
• Income tax (RMB million)	(31)	(46)	(74)	(19)
• Income tax paid (RMB million)	(50)	(41)	(60)	(42)
• Income tax rate	25%	25%	25%	0-25%
Australia				
• Net profit before tax (AUD million)	85	30	(157)	(290)
• Income tax (AUD million)	(25)	(5)	-	-
• Income tax paid (AUD million)	-	-	-	-
• Income tax rate	30%	30%	30%	30%
Banpu[a]				
• Net profit before tax (USD million)	504	125	(8)	690
• Income tax (USD million)	(189)	(78)	(9)	(198)
• Income tax paid (USD million)	(135)	(140)	(78)	(84)
• Income tax rate	20-25%	20-25%	20-25%	0-30%

[a] Consolidated

BUSINESS ETHICS

	2018	2019	2020	2021
Number of significant corporate governance complaints	0	10	9	2
• Corruption and bribery	0	2	0	0
• Fraud, embezzlement, theft	0	2	1	0
• Dishonesty for own and other benefit	0	1	4	0
• Dangers to health and safety or the environment	0	1	0	0
• Intentional act causing harm or loss to the Company	0	2	1	0
• Significant breaches of the Code of Conduct	0	2	0	2
• Assistance in wrongdoing[a]	0	0	0	0
• Others[b]	0	0	3	0
Proportion of significant corporate governance complaints resolved through a dispute mechanism	NA[c]	100%	100%	100%
Fines related antitrust/anti-competitive practices				
• Number of fines	0	0	0	0
• Total amount of fines (USD)	0	0	0	0

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

SUSTAINABILITY GOVERNANCE

	2018	2019	2020	2021
Coverage of material ESG aspects embedded in CEO's KPI and deployed to senior management	-	100%	100%	100%
Number of meetings				
• Board of Directors	12	12	13	13
• Corporate governance and nomination committee	4	4	4	9
• Audit committee	10	9	9	9
• Compensation committee	9	6	8	5
• ESG committee	-	-	-	3
Meeting attendance				
• Board of Directors	94%	97%	98%	99%
• Corporate governance and nomination committee	88%	94%	94%	100%
• Audit committee	97%	100%	100%	100%
• Compensation committee	100%	94%	100%	100%
• ESG committee	-	-	-	100%
Performance assessment of the Board of Directors[a]				
• Group	4.73	4.76	4.74	4.85
• Individual (average)	4.75	4.51	4.56	4.67
• Corporate governance and nomination committee	4.95	4.95	4.95	4.99
• Audit committee	5.00	4.90	4.45	4.90
• Compensation committee	4.80	4.83	4.61	4.70
• ESG committee	-	-	-	4.60

[a] In the range of 0 to 5

RISK MANAGEMENT

	2018	2019	2020	2021
Coverage of ESG risk management	-	-	87%	94%

BUSINESS CONTINUITY MANAGEMENT

	2018	2019	2020	2021
Coverage of CMT/IMT exercise	33%	25%	100%[a]	100%[a]
Coverage of BCP exercise for critical business functions	-	-	-	7%[b]

[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

DIGITAL TRANSFORMATION

	2018	2019	2020	2021
Number of use-cases & initiatives	7	199	13	102
Amount of business impact value (USD million)	0	84	43	71
Number of digital capability centers	1	2	4	4
Number of tech ecosystem partners	6	30	12	15

CONTRIBUTIONS TO EXTERNAL ORGANIZATIONS & ASSOCIATIONS

	2018	2019	2020	2021
Lobbying or interest representation (USD million)	0	0	0	0
Political party or political interest (USD million)	0	0	0	0
Trade association or tax-exempt groups (USD million)	0.54	0.53	1.04	0.63
Other contribution (USD million)	0	0	0	0

ECONOMIC DISTRIBUTIONS

	2018	2019	2020	2021
Ratio of the dividend payout to net profits	0.55	NA[g]	NA[g]	0.27
Economic value generated (USD million)				
• Sales	3,307	2,652	2,219	4,033
• Other revenues	420	352	228	274
Economic value distributed (USD million)				
• Shareholder[a]	112	116	63	56
• Supplier and contractor[b]	1,204	1,164	1,173	1,362
• Employee[c]	283	287	308	380
• Financial Institution[d]	166	174	166	167
• Government[e]	471	356	246	496
• Community[f]	7	6	3	5
Economic value retained (USD million)	1,484	901	485	1,840
Community & social investment - by objective				
• Donations to charity	35%	33%	46%	34%
• Community investments	30%	28%	44%	59%
• Commercial initiatives	35%	39%	10%	7%
Community & social investment - by type				
• Cash contribution	78%	93%	70%	87%
• Time provided by volunteer staff	6%	4%	22%	1%
• Management overhead	6%	2%	7%	11%
• In-kind giving	10%	1%	1%	1%
Community investment – by dimension				
• Economic development & income generation	34%	32%	32%	15%
• Social & cultural promotion	16%	17%	23%	14%
• Infrastructure development	14%	14%	17%	13%
• Education development	12%	20%	15%	9%
• Health and sanitation development	8%	14%	9%	47%
• Environmental conservation	16%	3%	4%	2%

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

DATA PRIVACY & CYBERSECURITY

	2018	2019	2020	2021
Number of cybersecurity breaches	-	-	1	0
Number of IT infrastructure incidents	-	-	1	1
% of IT and IoT assets securely managed by security operation center (SOC)	-	-	-	30%
Cybersecurity & privacy maturity score[a]	-	-	-	2.0

[a] In the range of 1 to 5

SOCIOECONOMIC COMPLIANCE

	2018	2019	2020	2021
Significant socioeconomic non-compliance	0	0	0	0
• Number of significant fines	0	0	0	0
• Number of significant non-monetary sanctions	0	0	0	0

CUSTOMER & PRODUCT STEWARDSHIP

	2018	2019	2020	2021
Number of complaints				
• Customer privacy	0	0	0	0
• Safety and environmental issues from the use of products	0	0	0	0
• Product and service information & labeling and marketing communications	-	-	0	0
Proportion of customer complaints resolved in a timely manner	NA[a]	NA[a]	NA[a]	NA[a]
Customer satisfaction				
• Customer satisfaction rate	-	-	-	91%[b]
• Coverage of customers surveyed	-	-	-	75%[b]

[a] No complaints
[b] Includes data of mining business in Indonesia, thermal power business in China, and gas business in the U.S. only

EFFICIENCY & RELIABILITY OF POWER PLANTS[a]

	2018	2019	2020	2021
Efficiency rate				
• Electricity generation (g/KWh)	270	279	247	203
• Steam production (kg/GJ)	37.58	37.94	37.75	37.96
Availability factor	89.02%	94.07%	97.72%	95.05%
Overall efficiency	66.69%	65.07%	74.70%	77.47%
Planned outage				
• Frequency (case)	22	25	15	20
• Duration (hour/case)	1,867	241	174	229
Unplanned outage				
• Frequency (case)	4	1	0	4
• Duration (hour/case)	1,913	457	NA[b]	427

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

SUPPLIER MANAGEMENT

	2018	2019	2020	2021[g]
Number of suppliers				
• All suppliers	3,056[b]	4,037	3,197	1,978
• Critical suppliers	19[d]	195[c]	2,389	733
Proportion of suppliers assessed for ESG risks				
• All critical tier-1 suppliers	100%[d]	69%[c]	3%	6%
• New critical tier-1 suppliers	100%[d]	23%[e]	-[f]	-[f]
Proportion of spending on local suppliers[a]	49%[b]	66%	38%	52%
Proportion of contracts that include ESG clauses	-	28%[e]	15%	-[f]

[a] Supplier that operates in the areas of business operations
[b] Includes data of mining business in Indonesia and Australia only
[c] Includes data of mining business in Indonesia and thermal power business in China only
[d] Includes data of mining business in Indonesia only
[e] Includes data of thermal power business in China only
[f] Data collection system under standardization
[g] Includes data of mining business in Indonesia and Australia and solar rooftop business in Thailand only

PRODUCT

Mining Business	2018	2019	2020	2021
Finished coal (tonnes)	35,303,278	33,427,638	31,500,685	27,803,045
Thermal Power Business				
Electricity sold (MWh)	1,491,092	1,495,753	1,897,104	1,179,065
Steam sold (MWh)	3,975,903	3,328,603	3,564,832	3,529,044
Heat sold (MWh)	546,686	824,264	1,346,803	1,325,845
Renewable Power Business				
Electricity sold (MWh)	224,593	286,723	333,907	531,193
Solar Rooftop Business				
Electricity sold (MWh)	182	1,439	4,856	8,350

AIR EMISSIONS

Mining Business	2018	2019	2020	2021
Air emissions load (tonnes)				
• SO_2	228	186	698	856
- Nonpoint source	-	-	698	715
- Point source	-	-	-	141
• NO_X [(a)]	672	2,106	1,235	1,375
• PM_{10} [(a)]	383	441	266	370
Air emissions intensity (g/tonne finished coal)				
• SO_2	6.5	5.6	22.2	30.8
- Nonpoint source	-	-	22.2	25.7
- Point source	-	-	-	5.1
• NO_X [(a)]	19.0	63.0	39.2	49.5
• PM_{10} [(a)]	10.8	13.2	8.4	13.3
Ozone-depleting substances (Kg CFC-11e)				
• ODS Consumption	132	68	181	107
• ODS imported	0	0	0	0
• ODS exported	0	0	0	0
Thermal Power Business				
Air emissions load (tonnes)				
• SO_2	149	153	164	154
- Nonpoint source	-	-	-	0
- Point source	-	-	-	154
• NO_X [(a)]	323	246	272	268
• TSP [(a)]	24	18	17	19
• Mercury (Hg)	-	0.0034	0.0085	0.0091
Air emissions intensity (g/MWh)				
• SO_2	24.8	27.1	25.4	25.4
- Nonpoint source	-	-	-	0
- Point source	-	-	-	25.4
• NO_X [(a)]	53.6	43.6	42.0	44.5
• TSP [(a)]	3.9	3.1	2.7	3.1
• Mercury (Hg)	-	0.0006	0.0013	0.0015
Ozone-depleting substances (Kg CFC-11e)				
• ODS consumption	0	1	1	1
• ODS imported	0	0	0	0
• ODS exported	0	0	0	0

[(a)] Point source only

GHG EMISSIONS

Mining Business	2018	2019	2020	2021
GHG emissions[b] (tonnes CO_2e)	5,142,061[c]	4,207,035	3,993,255[c]	3,943,637
GHG emissions[b] (tonnes CO_2e) - excluded biogenic	4,880,068	3,980,177	3,632,272	3,591,820
• Scope 1	4,601,404[c]	3,734,004	3,388,681	3,354,610
• Scope 1 (Biogenic)	283,352	226,857	360,983	351,817
• Scope 2	257,305[c]	246,173	243,591	237,210
GHG emissions scope 3[a] (tonnes CO_2e)	-	68,659,848	65,656,827	57,714,467
GHG emissions intensity[b] (tonnes CO_2e/tonne finished coal)	0.146	0.126	0.127[c]	0.142
GHG emissions intensity[b] (tonnes CO_2e/tonne finished coal) - excluded biogenic	0.138	0.119	0.115	0.129
Power Business[e]				
GHG emissions[b] (tonnes CO_2e)	3,824,124	3,822,073	4,019,922	3,645,651
• Scope 1	3,821,632	3,814,884	4,010,202	3,634,228
• Scope 2	2,492	7,189	9,720	11,423
GHG emissions intensity[b] (tonnes CO_2e/MWh)	0.613	0.644	0.590	0.555
• Electricity generation	0.991	0.575	0.541	0.507
• Steam & heat generation	0.470	0.673	0.609	0.572
GHG emissions intensity[f] (tonnes CO_2e/MWh)				
• All generation capacity	0.615	0.651	0.599	0.581
• Fossil generation capacity	0.635	0.675	0.619	0.602
SF_6 emissions (tonnes CO_2e)	110	1,086	515	241
Proportion of electricity generated				
• Conventional fuel	87%	86%	82%	73%
• Renewable energy	13%	14%	18%	27%
Solar Rooftop Business				
GHG emissions[b] (tonnes CO_2e)	13	17	17	13
• Scope 1	13	17	17	13
• Scope 2	0	0	0	0
GHG emissions intensity[b] (tonnes CO_2e/MWh)	0.073	0.012	0.003	0.002
• Electricity generation	0.073	0.012	0.003	0.002
• Steam & heat generation	NA[d]	NA[d]	NA[d]	NA[d]
SF_6 emissions (tonnes CO_2e)	0	0	0	0

[a] Use of products sold only
[b] Scope 1 & 2
[c] Adjusted data from the previous report
[d] No steam or heat generation for solar rooftop business
[e] Includes Thermal power business and Renewable power business
[f] Scope 1

ENERGY

Mining Business	2018	2019	2020	2021
Total energy consumption (TJ)	16,590	17,888	13,353	12,351
Renewable energy consumption (TJ)				
• Renewable fuel	409	2,203	2,843	2,750
• Electricity purchased	0	0	0	0
• Electricity self-generated	0	0	13.75	25.82
Non-renewable energy consumption (TJ)				
• Non-renewable fuel	15,062	11,806	9,420	8,511
• Electricity purchased	1,119	3,879	1,077	1,064
• Steam, heat and cooling	0	0	0	0
Energy consumption – by source				
• Diesel	11,818	9,097	6,886	6,712
• Palm oil	0	2,203	2,843	2,750
• Waste gas	2,123	1,637	1,647	583
• Electricity purchased	1,119	3,879	1,077	1,064
• Coal	1,069	927	642	659
• Others[(b)]	462	144	259	584
Energy consumption intensity (GJ/tonne finished coal)	0.47	0.54	0.42	0.444
Thermal Power Business[(a)]				
Total energy consumption (TJ)	10,705	11,093	9,937	7,208
Renewable energy consumption (TJ)				
• Renewable fuel	0	0	0	0
• Electricity purchased	0	0	0	0
• Electricity self-generated	0.40	0.40	0.39	0.35
Non-renewable energy consumption (TJ)				
• Non-renewable fuel	32,354	31,410	33,220	28,900
• Electricity purchased	0	18	27	31
• Steam, heat and cooling	0	0	0	0
Energy consumption – by source				
• Coal	30,157	29,381	30,749	26,832
• Waste gas	2,159	2,015	2,455	2,030
• Others[(c)]	38	33	42	68
Renewable energy sold (TJ)				
• Electricity	0	0.40	0.39	0.35
Non-renewable energy sold (TJ)				
• Electricity	5,368	5,384	5,627	4,244
• Steam	14,313	11,983	12,833	12,705
• Heat	1,968	2,967	4,848	4,773
Energy consumption intensity (GJ/MWh)	1.78	1.96	1.53	1.19

[(a)] Adjusted data from the previous report
[(b)] Includes gasoline, petroleum-based oil, petroleum-based grease, ethanol and electricity from solar
[(c)] Includes diesel, gasoline, electricity purchase, and electricity from solar

ENERGY

Renewable Power Business[a]	2018	2019	2020	2021
Total energy consumption (TJ)	16	19	24	37
Renewable energy consumption (TJ)				
• Renewable fuel	0	0	0	0
• Electricity purchased	0	0	0	0
• Electricity self-generated	814	1,040	1,211	1,931
Non-renewable energy consumption (TJ)				
• Non-renewable fuel	0	0	1	1
• Electricity purchased	10	12	14	17
• Steam, heat and cooling	0	0	0	0
Energy consumption – by source				
• Electricity from solar	814	1,040	1,211	1,755
• Electricity purchased	10	12	14	17
• Electricity from wind	0	0	0	155
• Others[b]	0.39	0	1	1
Renewable energy sold (TJ)				
• Electricity	809	1,032	1,202	1,912
Energy consumption intensity (GJ/MWh)	0.074	0.071	0.071	0.069
Solar Rooftop Business				
Total energy consumption (TJ)	0	5[a]	18[a]	0
Renewable energy consumption (TJ)				
• Renewable fuel	0	0	0	0
• Electricity purchased	0	0	0	0
• Electricity self-generated	0.65	5.18	17.48	30.06
Non-renewable energy consumption (TJ)				
• Non-renewable fuel	0	0	0	0
• Electricity purchased	0	0	0	0
Energy consumption – by source				
• Electricity from solar	0.65	5	17	30
• Diesel	0	0	0.23	0.17
Renewable energy sold (TJ)				
• Electricity	0.65	5.18	17.48	30.06
Energy consumption intensity (GJ/MWh)	0	0.16	0.05	0.02

[a] Adjusted data from the previous report
[b] Includes diesel and gasoline

WATER

Mining Business	2018		2019		2020		2021	
	Freshwater	Other water	Freshwater	Other water	Freshwater	Other water	Freshwater	Other water
Water withdrawal (ML)								
• from all areas[a]	1,022,935	-[b]	154,841	0	1,380,376	1,184	1,211,471	1,260
• from water stress area	-[b]	-[b]	-[b]	0	0	-[b]	9	0
Water withdrawal (ML)								
• Surface water[a]	999,982	-[b]	138,579	0	1,366,286	0	1,187,107	0
• Groundwater	20,797	-[b]	14,355	0	13,525	0	23,775	0
• Seawater	1,555	-[b]	0	1,324	0	1,184	0	1,260
• Produced water	0	-[b]	0	0	0	0	0	0
• Third-party water	601	-[b]	582	0	564	0	589	0
Water withdrawal – from water stress area (ML)								
• Surface water[a]	-[b]	-[b]	-[b]	-[b]	-[b]	-[b]	7.73[c]	0[c]
• Groundwater	-[b]	-[b]	-[b]	-[b]	-[b]	-[b]	0[c]	0[c]
• Seawater	-[b]	-[b]	-[b]	-[b]	-[b]	-[b]	0[c]	0[c]
• Produced water	-[b]	-[b]	-[b]	-[b]	-[b]	-[b]	0[c]	0[c]
• Third-party water	-[b]	-[b]	-[b]	-[b]	-[b]	-[b]	0.78[c]	0[c]
Third-party water withdrawal – from water stress area (ML)								
• Surface water[a]	-[b]	-[b]	-[b]	-[b]	-[b]	-[b]	0[c]	0[c]
• Groundwater	-[b]	-[b]	-[b]	-[b]	-[b]	-[b]	0.78[c]	0[c]
• Seawater	-[b]	-[b]	-[b]	-[b]	-[b]	-[b]	0[c]	0[c]
• Produced water	-[b]	-[b]	-[b]	-[b]	-[b]	-[b]	0[c]	0[c]
Water discharge[d] (ML)								
• to all areas[a]	1,018,058	-[b]	149,689	0	1,373,167	931	1,204,926	1,037
• to water stress area	-	-[b]	-[b]	-[b]	-[b]	-[b]	0[c]	0[c]
Water discharge (ML)								
• Surface water[a]	1,016,667	-[b]	148,635	0	1,373,166	0	1,193,974	0
• Groundwater	0	-[b]	0	0	0	0	0	0
• Seawater	1,392	-[b]	0	1,054	0	931	0	1,037
• Third-party water	0	-[b]	0	0	1	0	10,952	0
Change in water storage (ML)								
• All areas	-[b]		-[b]		-[b]		-[b]	
• Water stress area	-[b]		-[b]		-[b]		-[b]	
Water consumption (ML)								
• All areas	4,877		5,152		7,462		6,768	
• Water stress area	-[b]		-[b]		-[b]		0[c]	
Water consumption intensity (m^3/tonne finished coal)	0.138		0.154		0.237		0.243	

[a] Includes unused rainwater as amount of rainwater specifically consumed by mining activities cannot be separated
[b] Data collection system under standardization
[c] Data from coal logistics activity in Thailand only
[d] Pollutant load of water discharge is not available since data collection system under standardization

WATER

Thermal Power Business	2018		2019		2020		2021	
	Freshwater	Other water	Freshwater	Other water	Freshwater	Other water	Freshwater	Other water
Water withdrawal (ML)								
• from all areas	7,835	-[b]	6,756	-[b]	7,611	-[b]	6,897	0
• from water stress area	-[b]	-[b]	6,756	-[b]	7,611	-[b]	6,897	0
Water withdrawal (ML)								
• Surface water	5,076	-[b]	0	-[b]	0	-[b]	10	0
• Groundwater	2,758	-[b]	2,492	-[b]	2,231	-[b]	2,710	0
• Seawater	0	-[b]	0	-[b]	0	-[b]	0	0
• Produced water	0	-[b]	0	-[b]	0	-[b]	0	0
• Third-party water	0	-[b]	4,264	-[b]	5,380	-[b]	4,178	0
Water withdrawal – from water stress area (ML)								
• Surface water	-[b]	-[b]	0	-[b]	0	-[b]	10	0
• Groundwater	-[b]	-[b]	2,492	-[b]	2,231	-[b]	2,710	0
• Seawater	-[b]	-[b]	0	-[b]	0	-[b]	0	0
• Produced water	-[b]	-[b]	0	-[b]	0	-[b]	0	0
• Third-party water	-[b]	-[b]	4,264	-[b]	5,380	-[b]	4,178	0
Third-party water withdrawal – from water stress area (ML)								
• Surface water	-[b]	-[b]	3,896	-[b]	4,117	-[b]	3,181	0
• Groundwater	-[b]	-[b]	0	-[b]	0	-[b]	0	0
• Seawater	-[b]	-[b]	0	-[b]	0	-[b]	0	0
• Produced water	-[b]	-[b]	0	-[b]	0	-[b]	0	0
• Reclaimed water[a]	-[b]	-[b]	367	-[b]	1,263	-[b]	997	0
Water discharge (ML)								
• to all areas	958		1,855		1,779		1,604	
• to water stress area	-[b]		1,855		1,779		1,604	
Water discharge (ML)								
• Surface water	0		0		0		464	
• Groundwater	0		0		0		0	
• Seawater	0		0		0		0	
• Third-party water	958		1,855		1,779		1,139	
Pollutant load – to surface water[c] (tonnes)								
• COD	-		-		-		11.18	
• TSS	-		-		-		12.65	
• Oil & Grease	-		-		-		0.31	
Pollutant load – to third-party water (tonnes)								
• COD	-		-		-		54.34	
• TDS	-		-		-		1,555.92	
• TSS	-		-		-		33.36	
• Oil & Grease	-		-		-		0.39	
Change in water storage (ML)								
• All areas	-[b]		-[b]		-[b]		-[b]	
• Water stress area	-[b]		-[b]		-[b]		-[b]	
Water consumption (ML)								
• All areas	6,877		4,901		5,832		5,293	
• Water stress area	-[b]		4,901		5,832		5,293	
Water consumption intensity (m^3/MWh)	1.143		0.868		0.901		0.877	

[a] From wastewater treatment plant of the third-party
[b] Data collection system under standardization
[c] Data of Jun-Dec 2021 only

WATER

Renewable Power Business	2018		2019		2020		2021	
	Freshwater	Other water	Freshwater	Other water	Freshwater	Other water	Freshwater	Other water
Water withdrawal (ML)								
• from all areas	3.71	-[b]	5.53	0	4	0	4.47	0
• from water stress area	-[b]	-[b]	5.40	0	4	0	4.19	0
Water withdrawal (ML)								
• Surface water	0	-[b]	0	0	0	0	22.70	0
• Groundwater	2.66	-[b]	4.40	0	3.09	0	0.98	0
• Seawater	0	-[b]	0	0	0	0	0	0
• Produced water	0	-[b]	0	0	0	0	0	0
• Third-party water	1.05	-[b]	1.13	0	1.38	0	1.30	0
Water withdrawal – from water stress area (ML)								
• Surface water	-[b]	-[b]	0	0	0	0	0	0
• Groundwater	-[b]	-[b]	4.40	0	3.09	0	0.98	0
• Seawater	-[b]	-[b]	0	0	0	0	0	0
• Produced water	-[b]	-[b]	0	0	0	0	0	0
• Third-party water	-[b]	-[b]	1.00	0	1.10	0	1.21	0
Third-party water withdrawal – from water stress area (ML)								
• Surface water	-[b]	-[b]	0.57	0	0.68	0	0.80	0
• Groundwater	-[b]	-[b]	0.43	0	0.42	0	0	0
• Seawater	-[b]	-[b]	0	0	0	0	0	0
• Produced water	-[b]	-[b]	0	0	0	0	0	0
Water discharge[a] (ML)								
• to all areas	1.93	-[b]	0	0	0	0	1.81	0
• to water stress area	-	-[b]	0	0	0	0	1.61	0
Water discharge (ML)								
• Surface water	-[b]	-[b]	0	0	0	0	0	0
• Groundwater	-[b]	-[b]	0	0	0	0	0	0
• Seawater	-[b]	-[b]	0	0	0	0	0	0
• Third-party water	1.93	-[b]	0	0	0	0	1.81	0
Change in water storage (ML)								
• All areas	-[b]		0		0		0	
• Water stress area	-[b]		0		0		0	
Water consumption (ML)								
• All areas	1.78		5.53		4.47		23.17	
• Water stress area	-[b]		5.40		4.19		0.57	
Water consumption intensity (m^3/MWh)	0.008		0.019		0.013		0.044	

[a] Pollutant load of water discharge is not available since data collection system under standardization
[b] Data collection system under standardization

WASTE

Mining Business[a]	2018[c]			2019[c]			2020[c]			2021		
	Onsite	Offsite	Total	Onsite	Offsite	Total	Onsite	Offsite	Total	Onsite	Offsite	Total
Waste generated[b] (tonnes)												12,780
• Hazardous waste[d]												6,441
• Non-hazardous waste												6,340
Waste diverted from disposal (tonnes)			6,308			10,471			8,122			3,861
• Hazardous waste[d]	270	3,901	4,171	1,864	7,120	8,984	503	5,771	6,274	578	1,510	2,088
- Preparation for reuse	270	1,939	2,209	887	950	1,838	0	255	255	0	265	265
- Recycling	-	1,962	1,962	977	6,170	7,147	503	5,517	6,020	578	1,245	1,822
- Other recovery operations	-	-	0	0	0	0	0	0	0	0	0	0
• Non-hazardous waste	2,137	-	2,137	78	1,409	1,487	399	1,449	1,848	290	1,484	1,774
- Preparation for reuse	-	-	-	14	3	17	372	277	648	227	269	496
- Recycling	2,137	-	2,137	0	1,406	1,406	20	1,169	1,190	56	1,214	1,271
- Other recovery operations	-	-	-	64	0	64	7	3	10	6	0	6
Waste directed to disposal (tonnes)			3,331			3,323			4,710			4,848
• Hazardous waste[d]	323	266	589	52	72	124	0	323	323	0	331	331
- Incineration (with energy recovery)	-	-	-	0	0	0	0	5	5	0	0	0
- Incineration (without energy recovery)	323	112	435	0	72	72	0	278	278	0	179	179
- Landfilling	-	-	-	0	0	0	0	1	1	0	153	153
- Other disposal	0	154	154	0	0	52	0	40	40	0	0	0
• Non-hazardous waste	2,742	0	2,742	346	2,853	3,199	1,721	2,666	4,375	1,759	2,758	4,516
- Incineration (with energy recovery)	-	-	-	0	0	0	1	0	1	0	0	0
- Incineration (without energy recovery)	1	-	1	0	0	0	0	0	0	0	0	0
- Landfilling	2,678	-	2,678	346	2,777	3,124	1,720	2,655	4,375	1,759	2,758	4,516
- Other disposal	62	-	62	0	76	76	76	11	11	0	0	0
Waste directed to disposal intensity (kg/tonne finished coal)												
• Hazardous waste[d]		0.017			0.004			0.010			0.012	
• Non-hazardous waste		0.078			0.096			0.139			0.162	
Proportion of hazardous waste reused & recycled		-			-			95%			32%	
Proportion of non-hazardous waste reused & recycled		-			-			29%			28%	
Proportion of ash reused & recycled		100%			100%			100%			0%[e]	

[a] Excludes ash and gypsum
[b] Start to report in according to GRI 306-3 (2020) in 2021
[c] Adjusted data from the previous report according to GRI 306 (2020)
[d] Include ash which is defined as hazardous waste in Indonesia
[e] Ash from captive coal-fired power plant in Indonesia is stored on-site with planned to be reused by the 3rd party at the beginning of 2022

WASTE

Thermal Power Business	2018[c]			2019[c]			2020[c]			2021		
	Onsite	Offsite	Total	Onsite	Offsite	Total	Onsite	Offsite	Total	Onsite	Offsite	Total
Waste generated[b] (tonnes)												777,757
• Hazardous waste												176
• Non-hazardous waste[a]												777,581
Waste diverted from disposal (tonnes)			710,639			749,309			762,699			776,807
• Hazardous waste	-	111	111	0	13	13	0	99	99	0	175	175
- Preparation for reuse	-	-	-	0	0	0	0	0	0	0	4	4
- Recycling	-	10	10	0	13	13	0	84	84	0	59	59
- Other recovery operations	-	101	101	0	0	0	0	16	16	0	113	113
• Non-hazardous waste[a]	-	710,528	710,528	0	749,296	749,296	0	762,599	762,599	0	776,631	776,631
- Preparation for reuse	-	709,483	709,483	0	0	0	0	334,815	334,815	0	418,328	418,328
- Recycling	-	808	808	0	749,296	749,296	0	427,785	427,785	0	358,103	358,103
- Other recovery operations	-	237	237	0	0	0	0	0	0	0	201	201
Waste directed to disposal (tonnes)	-		1,520			922			659			794
• Hazardous waste	-	2.53	2.53	0	5.89	5.89	0	3.78	3.78	0	1.28	1.28
- Incineration (with energy recovery)	-	0	0	0	0	0	0	0	0	0	0.91	0.91
- Incineration (without energy recovery)	-	2.53	2.53	0	5.89	5.89	0	3.78	3.78	0	0.37	0.37
- Landfilling	-	-	-	0	0	0	0	0	0	0	0	0
- Other disposal	-	-	-	0	0	0	0	0	0	0	0	0
• Non-hazardous waste[a]	-	1,517	1,517	0	916	916	0	655	655	0	793	793
- Incineration (with energy recovery)	-	0	0	0	0	0	0	0	0	0	72	72
- Incineration (without energy recovery)	-	-	-	0	0	0	0	0	0	0	0	0
- Landfilling	-	1,517	1,517	0	844	844	0	583	583	0	721	721
- Other disposal	-	-	-	0	72	72	0	72	72	0	0	0
Waste directed to disposal intensity (kg/MWh)												
• Hazardous waste		0.017			0.002			0.003			0.0002	
• Non-hazardous waste[a]		0.292			0.162			0.101			0.131	
Proportion of hazardous waste reused & recycled		-			-			81%			36%	
Proportion of non-hazardous waste reused & recycled		-			-			99.9%			99.85%	
Proportion of ash reused & recycled		100%			100%			100%			100%	
Proportion of synthetic gypsum reused & recycled		100%			100%			100%			100%	

[a] Includes ash and synthetic gypsum (if any)
[b] Start to report in according to GRI 306-3 (2020) in 2021
[c] Adjusted data from the previous report according to GRI 306 (2020)

WASTE

Renewable Power Business	2018[b]			2019[b]			2020[b]			2021		
	Onsite	Offsite	Total	Onsite	Offsite	Total	Onsite	Offsite	Total	Onsite	Offsite	Total
Waste generated[a] (tonnes)												22.00
• Hazardous waste												0.27
• Non-hazardous waste												21.28
Waste diverted from disposal (tonnes)			-			-			0			10.19
• Hazardous waste	-	-	-	-	-	-	0	0	0	0	0.09	0.09
- Preparation for reuse	-	-	-	-	-	-	0	0	0	0	0	0
- Recycling	-	-	-	-	-	-	0	0	0	0	0.09	0.09
- Other recovery operations	-	-	-	-	-	-	0	0	0	0	0	0
• Non-hazardous waste	-	-	-	-	-	-	0	0	0	0	10.10	10.10
- Preparation for reuse	-	-	-	-	-	-	0	0	0	0	0	0
- Recycling	-	-	-	-	-	-	0	0	0	0	10.10	10.10
- Other recovery operations	-	-	-	-	-	-	0	0	0	0	0	0
Waste directed to disposal (tonnes)			27			-			0			11.73
• Hazardous waste	-	-	-	-	-	-	0	0	0	0	0	0
- Incineration (with energy recovery)	-	-	-	-	-	-	0	0	0	0	0	0
- Incineration (without energy recovery)	-	-	-	-	-	-	0	0	0	0	0.18	0.18
- Landfilling	-	-	-	-	-	-	0	0	0	0	0	0
- Other disposal	-	-	-	-	-	-	0	0	0	0	0	0
• Non-hazardous waste	-	27	27	-	-	-	0	0	0	0	11.55	11.55
- Incineration (with energy recovery)	-	-	-	-	-	-	0	0	0	0	0	0
- Incineration (without energy recovery)	-	-	-	-	-	-	0	0	0	0	0	0
- Landfilling	-	-	-	-	-	-	0	0	0	0	11.55	11.55
- Other disposal	-	27	27	-	-	-	0	0	0	0	0	0
Waste directed to disposal intensity (kg/MWh)												
• Hazardous waste		-			-			0			0	
• Non-hazardous waste		-			0.120			0.025			0.022	
Proportion of hazardous waste reused & recycled		-			-			0			33%	
Proportion of non-hazardous waste reused & recycled		-			-			0			47%	

[a] Start to report in according to GRI 306-3 (2020) in 2021
[b] Adjusted data from the previous report according to GRI 306 (2020)

BIODIVERSITY

Mining Business	2018	2019		2020		2021	
		Operating[a]	Project[b]	Operating[a]	Project[b]	Operating[a]	Project[b]
Business unit(s) in relation to protected area	6	4	2	4	3	4	2
• In the area	0	0	0	0	0	1	0
• Adjacent to	0	1	1	1	1	1	1
• Containing portions	6	3	1	3	2	2	1
Business unit(s) in relation to high biodiversity wilderness area	1	3	1	3	0	3	2
• In the area	1	3	1	3	0	3	1
• Adjacent to	0	0	0	0	0	0	1
• Containing portions	0	0	0	0	0	0	0
Number of business units							
• Assessed for potential biodiversity impact	10	10	3	10	6	10	8
• Identified as high potential of impact	7	7	3	7	3	4	1
• Assessed for biodiversity value	7	7	3	7	0	7	0
• Required biodiversity management plan[c]	7	7	3	7	3	4	0
• Implemented biodiversity management plan[c]	7	7	NA[d]	7	NA[d]	7	NA[d]
Area (hectares)							
• Assessed for potential biodiversity impact	45,997	67,279	434	51,686	4,272	46,031	34,436
• Assessed for biodiversity value	45,997	67,279	434	51,686	0	46,031	200
• With biodiversity management plan	45,997	67,279	NA[d]	51,686	NA[d]	46,031	NA[d]
• Biodiversity offset area	4,947	8,751	NA[d]	7,105	NA[d]	14,947	NA[d]
Proportion of business units							
• Assessed for potential biodiversity impact	-	100%	50%	100%	100%	100%	80%
• Assessed for biodiversity value	-	100%	100%	100%	0%	100%	0%
• With biodiversity management plan[c]	-	100%	NA[d]	100%	NA[d]	100%	NA[d]

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

BIODIVERSITY

Thermal Power Business	2018	2019		2020		2021	
		Operating[a]	Project[b]	Operating[a]	Project[b]	Operating[a]	Project[b]
Business unit(s) in relation to protected area		0	0	0	0	0	0
• In the area	-	0	0	0	0	0	0
• Adjacent to	-	0	0	0	0	0	0
• Containing portions	-	0	0	0	0	0	0
Business unit(s) in relation to high biodiversity wilderness area	-	0	0	0	0	0	0
• In the area	-	0	0	0	0	0	0
• Adjacent to	-	0	0	0	0	0	0
• Containing portions	-	0	0	0	0	0	0
Number of business units							
• Assessed for potential biodiversity impact	-	3	0	3	0	4	0
• Identified as high potential of impact	-	0	0	0	0	0	0
• Assessed for biodiversity value	-	0	0	0	0	0	0
• Required biodiversity management plan[c]	-	0	0	0	0	0	0
• Implemented biodiversity management plan[c]	-	0	NA[d]	0	NA[d]	0	0
Area (hectares)							
• Assessed for potential biodiversity impact	-	-	-	0	0	0	0
• Assessed for biodiversity value	-	-	-	0	0	0	0
• With biodiversity management plan	-	-	NA[d]	0	NA[d]	0	NA[d]
• Biodiversity offset area	-	0	NA[d]	0	NA[d]	0	NA[d]
Proportion of business units							
• Assessed for potential biodiversity impact	-	100%	100%	100%	100%	100%	100%
• Assessed for biodiversity value	-	NA[e]	0%	NA[e]	0%	NA[e]	NA[e]
• With biodiversity management plan[c]	-	NA[e]	NA[d]	NA[e]	NA[d]	NA[e]	NA[e]

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

BIODIVERSITY

Renewable Business	2018	2019		2020		2021	
		Operating[a]	Project[b]	Operating[a]	Project[b]	Operating[a]	Project[b]
Business unit(s) in relation to protected area		0	0	0	1	0	1
• In the area	-	0	0	0	0	0	0
• Adjacent to	-	0	0	0	0	0	0
• Containing portions	-	0	0	0	1	0	1
Business unit(s) in relation to high biodiversity wilderness area	-	0	1	0	1	0	0
• In the area	-	0	0	0	0	0	0
• Adjacent to	-	0	0	0	0	0	0
• Containing portions	-	0	1	0	1	0	0
Number of business units							
• Assessed for potential biodiversity impact	-	12	7	18	3	24	2
• Identified as high potential of impact	-	0	1	0	1	0	1
• Assessed for biodiversity value	-	0	0	0	0	0	0
• Required biodiversity management plan[c]	-	0	0	0	1	0	0
• Implemented biodiversity management plan[c]	-	0	NA[d]	0	NA[d]	0	NA[d]
Area (hectares)							
• Assessed for potential biodiversity impact	-	-	-	0	620	0	620
• Assessed for biodiversity value	-	-	-	0	0	0	0
• With biodiversity management plan	-	-	NA[d]	0	NA[d]	0	NA[d]
• Biodiversity offset area	-	0	NA[d]	0	NA[d]	107	NA[d]
Proportion of business units							
• Assessed for potential biodiversity impact	-	100%	100%	100%	100%	100%	100%
• Assessed for biodiversity value	-	NA[e]	0%	NA[e]	0%	NA[e]	NA[e]
• With biodiversity management plan[c]	-	NA[e]	NA[d]	NA[e]	NA[d]	NA[e]	NA[e]

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

MINE CLOSURE

Mining Business	2018	2019	2020	2021
Number of mines				
• Mining stage[a]	12	12	12	12
• Mine closure stage	10	10	8	7
Number of mines with mine closure plan	22	22	20	19
• Indonesia	6	6	6	5
• Australia	16	16	14	14
Proportion of mines with mine closure plan	100%	100%	100%	100%
Progress of revegetation against plan[b]	99%	94%	91%	100%
Progress of mine closure activity against plan[c]	-	100%	100%	100%
Disturbed area (hectare)				
• Total land own at year end	93,074	93,036	92,775	92,775
• Total disturbed area at year end	24,728	25,580	20,748	25,283
• Newly disturbed area during the year	836	859	1,154	557
Rehabilitated area (hectare)				
• Total rehabilitated area at year end	12,157	12,997	13,189	14,841
• Newly rehabilitated area during the year	636	840	733	825
• Total area disturbed and not yet rehabilitated	12,571	12,583	7,559	10,443
Progress of land management				
• Total disturbed area to total land own	27%	27%	22%	27%
• Total rehabilitated area to total disturbed area	49%	51%	64%	59%

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

MINE SUBSIDENCE[a]

Mining Business	2018	2019	2020	2021
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%

[a] For underground mine only

MINERAL WASTE

Mining Business	2018	2019	2020	2021
Overburden[a] (million BCM)	265	253	182	176
Percentage of in-pit backfilled[a]	88%	93%	91%	81%
Tailings (dry tonnes)	295,066	410,697	388,658	598,071
Progress of in-pit backfilling against plan[a]	-	93%	94%	100%
Proportion of mines with acid mine drainage management plan[b]	100%	100%	100%	100%
Number of tailings facilities				
• Active	-	3	3	3
• Closed	-	2	2	2
Number of significant tailings spills	0	0	0	0

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

ENVIRONMENTAL COMPLIANCE

Mining Business	2018	2019	2020	2021
Number of significant environmental incidents[a]	0	0	0	1
• Effluent discharge limits	0	0	0	0
• Air emissions standards	0	0	0	0
• Others	0	0	0	1
Fines from environmental non-compliance[b]				
• Number of significant fines	0	0	0	0
• Total amount of significant fines (USD)	0	0	0	0
Non-monetary sanctions	0	0	0	0
Cases brought through dispute mechanisms	0	0	0	0
Spills[c]				
• Number of significant spills	0	0	0	0
• Total amount of significant spills (liter)	0	0	0	0
Thermal Power Business				
Number of significant environmental incidents[a]	0	0	0	0
• Effluent discharge limits	0	0	0	0
• Air emissions standards	0	0	0	0
• Others	0	0	0	0
Fines from environmental non-compliance[b]				
• Number of significant fines	0	0	0	0
• Total amount of significant fines (USD)	0	0	0	0
Non-monetary sanctions	0	0	0	0
Cases brought through dispute mechanisms	0	0	0	0
Spills[c]				
• Number of significant spills	0	0	0	0
• Total amount of significant spills (liter)	0	0	0	0
Renewable Power Business				
Number of significant environmental incidents[a]	0	0	0	0
• Effluent discharge limits	0	0	0	0
• Air emissions standards	0	0	0	0
• Others	0	0	0	0
Fines from environmental non-compliance[b]				
• Number of significant fines	0	0	0	0
• Total amount of significant fines (USD)	0	0	0	0
Non-monetary sanctions	0	0	0	0
Cases brought through dispute mechanisms	0	0	0	0
Spills[c]				
• Number of significant spills	0	0	0	0
• Total amount of significant spills (liter)	0	0	0	0

[a] Refers to internal definition with criteria such as any damage to widespread area or potential fines that is greater than USD 10,000
[b] Fines or potential fines that is greater than USD 10,000
[c] Significant spills include spill(s) that leads to environmental incidents in moderate to high level (referring to internal definition)

EMPLOYEE

	2018	2019	2020	2021
Employee – total	5,963	5,359	5,482	5,488
Employee – by country				
• Thailand	6.3%	7.9%	9.0%	8.5%
• Indonesia	47.7%	41.0%	43.0%	43.5%
• China	15.8%	17.2%	17.0%	17.2%
• Australia	27.9%	31.3%	28.6%	28.4%
• Mongolia	1.6%	1.8%	1.6%	1.6%
• Singapore	0.3%	0.3%	0.2%	0.2%
• Japan	0.3%	0.4%	0.4%	0.3%
• Lao PDR	0.1%	0%	0%	0%
• Vietnam	0.03%	0.1%	0.2%	0.3%
• The U.S.[(b)]	-	-	-	0.02%
Employee – by gender				
• Male	86.0%	85.8%	85.0%	85.2%
• Female	14.0%	14.2%	15.0%	14.8%
Employee – by nationality				
• Thai	7.9%	9.3%	9.6%	10.1%
• Indonesian	46.6%	40.1%	42.8%	42.5%
• Chinese	15.6%	17.0%	16.9%	17.1%
• Australian	28.0%	31.3%	28.6%	28.3%
• Mongolian	1.5%	1.6%	1.5%	1.4%
• Singaporean	0.1%	0.1%	0.1%	0.1%
• Japanese	0.1%	0.2%	0.2%	0.2%
• Vietnamese	-	0.1%	0.2%	0.2%
• The U.S.[(b)]	-	-	-	0.1%
• Others	0.2%	0.2%	0.2%	0.1%
Employee – by age				
• Under 30	15.1%	10.5%	11.6%	9.5%
• 30-39	38.5%	37.3%	37.0%	35.0%
• 40-49	30.9%	34.1%	33.3%	34.6%
• Over 50	15.5%	18.1%	18.2%	20.8%
Employee – by type				
• Permanent	92.0%	98.9%	93.2%	83.4%
• Temporary	8.0%	1.1%	6.8%	16.6%
Employee – by level				
• Senior management	1.2%	0.9%	0.9%	1.1%
• Middle management	6.7%	8.1%	8.5%	9.3%
• Junior management	27.1%	11.5%	11.7%	11.9%
• Staff and supervisor	65.0%	79.5%	78.9%	77.6%
% Female – by business				
• All business	-	-	-	14.8%
• Mining business	-	-	-	17.0%
• Thermal power business	-	-	-	13.6%
• Renewable power business	-	-	-	3.8%
• Gas business	-	-	-	0%
• Energy technology business	-	-	-	0.2%
• Enabling function	-	-	-	65.4%
Management – by gender[(a)]				
• Male	77.3%	89.9%	72.8%	73.8%
• Female	22.7%	10.1%	27.2%	26.2%

[(a)] Includes middle and senior managements
[(b)] Includes thermal power business only

NEW EMPLOYEE

	2018	2019	2020	2021
New employee – total	459	582	168	299
New employee – by country				
• Thailand	30	87	53	52
• Indonesia	187	278	9	56
• China	61	56	62	44
• Australia	169	138	33	135
• Mongolia	3	7	2	2
• Singapore	4	3	0	0
• Japan	4	8	4	6
• Lao PDR	0	0	0	0
• Vietnam	1	5	5	3
• The U.S.[a]	-	-	-	1
New employee – by gender				
• Male	381	472	115	249
• Female	78	110	53	50

[a] Includes Thermal power business only

LOCAL EMPLOYMENT[a]

	2018	2019	2020	2021
Local employment – all employee by country				
• Thailand	-	-	-	98.7%
• Indonesia	-	-	-	97.7%
• China	-	-	-	99.0%
• Australia	-	-	-	99.8%
• Mongolia	-	-	-	90.7%
• Japan	-	-	-	77.8%
• Vietnam	-	-	-	66.7%
• The U.S.[b]	-	-	-	0%
Local employment – senior management by country				
• Thailand	-	-	-	94.1%
• Indonesia	-	-	-	100%
• China	-	-	-	25.0%
• Australia	-	-	-	80.0%
• Mongolia	-	-	-	0%
• Japan	-	-	-	100%
• Vietnam	-	-	-	0%
• The U.S.[b]	-	-	-	100%

[a] In the same region (e.g. state for Australia, province for Indonesia) at the operational site level
[b] Includes Thermal power business only

REMUNERATION

	2018	2019	2020	2021
Male to female remuneration ratio	-	-	-	1.06
Male to female remuneration ratio – by level				
• Senior management	-	-	-	0.88
• Middle management	-	-	-	1.07
• Junior management	-	-	-	1.08
• Staff and supervisor	-	-	-	1.17

COLLECTIVE BARGAINING AGREEMENTS

	2018	2019	2020	2021
Percentage of employees covered by collective bargaining agreements[a]	64%	62%	58%	72%
• Thailand	0%	0%	0%	0%
• Indonesia	75%	76%	76%	69%
• China	0%	0%	0%	0%
• Australia	100%	75%	76%	78%
• Mongolia	0%	0%	0%	0%
• Singapore	0%	0%	0%	0%
• Japan	0%	0%	0%	0%
• Lao PDR	0%	0%	0%	0%
• Vietnam	0%	0%	0%	0%

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

CORPORATE CULTURE

	2018	2019	2020	2021
Level of alignment between employee behavior and the corporate culture "Banpu Heart"	69%	77%	75%	78%
• Thailand	69%[a]	69%	72%	73%
• Indonesia	-	71%	71%	73%
• China	-	95%	94%	95%
• Australia	-	70%	66%	72%
• Mongolia	-	83%	78%	75%
• Japan	-	79%	56%	57%

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

EMPLOYEE MANAGEMENT

	2018	2019	2020	2021
Employee engagement level	82%	78%	76%	74%
• Thailand	67%	68%	69%	69%
• Indonesia	80%	73%	73%	73%
• China	94%	94%	92%	93%
• Japan	-	50%	38%	31%
• Mongolia	-	76%	52%	50%
• Australia	-	-	-	40%
Total turnover rate	6.0%	5.3%	13.9%	7.3%
Voluntary turnover rate	3.9%	3.0%	5.8%	4.3%
Turnover rate – by country				
• Thailand	6.6%	6.4%	8.1%	8.7%
• Indonesia	6.9%	17.6%	21.1%	5.3%
• China	4.7%	6.7%	5.3%	6.6%
• Australia	4.7%	6.7%	10.5%	9.2%
• Mongolia	12.4%	9.5%	5.6%	8.1%
• Singapore	6.7%	11.8%	16.7%	55.6%
• Japan	0%	0%	9.1%	55.6%
• Vietnam	0%	0%	0%	33.3%
Employees that take parental leave				
• Thailand	2	3	4	15
• Indonesia	-[b]	167	119	113
• China	36	9	4	2
• Australia	20	23	19	10
• Mongolia	3	6	0	3
• Singapore	1	0	0	0
• Japan	0	0	0	0
• Vietnam	0	0	0	0
Return to work after parental leave				
• Thailand	100%	100%	100%	100%
• Indonesia	-[b]	100%	100%	100%
• China	89%	22%	100%	100%
• Australia	100%	91%	100%	100%
• Mongolia	0%	100%	NA[a]	100%
• Singapore	NA[a]	NA[a]	NA[a]	NA[a]
• Japan	NA[a]	NA[a]	NA[a]	NA[a]
• Vietnam	NA[a]	NA[a]	NA[a]	NA[a]
Major layoff – by country				
• Thailand	-	0	0	0
• Indonesia	-	0	0	0
• China	-	0	0	0
• Australia	-	0	0	0
• Others	-	0	0	0

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

HUMAN CAPITAL DEVELOPMENT

	2018	2019	2020	2021
Average cost of training (USD/employee)				
• Thailand[a]	1,488	1,554	1,115	850
• Indonesia	172	239	47	115
• China	244	276	271	227
• Australia	-	1,668	1,865	1,100
• Mongolia	-	120	5	111
• The U.S.	-	-	-	-
Average cost of training (USD/employee)				
• Senior management	1,253	2,226	2,402	620
• Middle management	1,141	948	771	735
• Junior management	352	724	643	629
• Staff and supervisor	133	840	951	458
Average hours of training (hour/employee)				
• Thailand[a]	26.2	19.2	21.0	29.7
• Indonesia	15.1	18.3	7.5	9.4
• China	26.9	29.0	35.0	28.5
• Australia	-	24.5	27.0	25.0
• Mongolia	-	42.0	4.6	14.0
• The U.S.	-	-	-	-
Average hours of training (hour/employee)				
• Senior management	15.6	25.2	27.2	11.6
• Middle management	22.5	22.2	18.0	19.1
• Junior management	20.7	27.2	24.1	20.6
• Staff and supervisor	17.6	22.0	24.9	21.1
Proportion of open positions filled by internal candidates	-	-	-	29%
Proportion of high critical positions with successor identified	100%	100%	63%	79%
Proportion of employee with individual development plan	74%[c]	62%	57%	56%
Employee attending leadership development programs (cumulative)	554	693	763	817
Employee attending leadership development programs (annual)				
• Strategic leader	0	20	0	0
• Business leader	19	27	0	0
• First line leader	26	25	26	26
• Future leader[c]	29	27	27	28
• Engaging leader[c]	38	40	17	0
Success of leadership development programs[b]				
• Strategic leader	NA[d]	78%	78%	78%
• Business leader	91%	87%	87%	87%
• First Line leader	91%	88%	82%	84%
• Future leader[c]	90%	92%	94%	82%
• Engaging leader[c]	93%	90%	90%	90%

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

OCCUPATIONAL HEALTH & SAFETY[d]

	2018	2019	2020	2021
Workers covered by OHS management system				
• Number of workers	-	-	18,439	21,841
• Percentage of total workers	-	-	99%	100%
Workers covered by OHS management system that has been internally audited				
• Number of workers	-	-	17,335	20,055
• Percentage of total workers	-	-	94%	92%
Workers covered by OHS management system that has been audited or certified by third-party				
• Number of workers	-	-	13,125	12,359
• Percentage of total workers	-	-	71%	57%
Number of fatalities from work-related injury	1	0	0	1
• Employee	0	0	0	0
• Contractor	1	0	0	1
• Third-party[a]	0	0	0	0
Fatality rate (person/million man-hour)	0.02	0.00	0.00	0.02
• Employee	0.00	0.00	0.00	0.00
• Contractor	0.02	0.00	0.00	0.02
Number of recordable work-related injuries	204	215	201	168
• Employee	178	171	164	145
• Contractor	26	44	37	23
Total recordable injury frequency rate (TRIFR) (person/million man-hour)	3.37	3.31	3.53	3.10
• Employee	18.37	16.63	16.91	15.97
• Contractor	0.51	0.80	0.78	0.51
Lost time injury frequency rate (LTIFR) (person/million man-hour)	0.56	0.66	0.68	0.41
• Employee	2.48	2.82	2.99	1.87
• Contractor	0.20	0.26	0.21	0.11
Injury severity rate (ISR)[b] (day/million man-hour)	142.77	29.27	28.55	130.15
• Employee	267.33	145.16	78.17	104.40
• Contractor	119.05	7.49	18.37	135.33
Number of high-consequence work-related injuries	-	3	1	2
• Employee	-	1	0	2
• Contractor	-	2	1	0
High-consequence work-related injury frequency rate (person/million man-hour)	-	0.05	0.02	0.04
• Employee	-	0.10	0.00	0.22
• Contractor	-	0.04	0.02	0.00
Number of hour worked	60,565,712	64,982,265	56,995,326	54,207,231
• Employee	9,688,400	10,277,992	9,696,278	9,080,183
• Contractor	50,877,312	54,704,273	47,299,048	45,127,048
Tier-1 process safety event[c]	5	3	2	2
Tier-1 process safety event rate[c] (case/million man-hour)	0.08	0.05	0.04	0.04
Number of fatalities as a result of work-related ill health	-	-	0	0
• Employee	-	-	0	0
• Contractor	-	-	0	0
Number of total recordable work-related ill health	-	-	0	0
• Employee	-	-	0	0
• Contractor	-	-	0	0

[a] Third-party fatality is not included in the calculation of TRIFR, LTIFR, and ISR
[b] Refers to American National Standards Institute (ANSI) standard
[c] Refers to internal definition with criteria such as fatality, catastrophic damage to ecosystems, or property damage >100,000 USD
[d] Excludes employees & contractors of Renewable power business in Japan, Vietnam and Australia.

COMMUNITY ENGAGEMENT

	2018	2019	2020	2021
Community baseline data – Australia				
• Number of villages	14	11	23	23
• Number of people	41,721	25,787	43,794	43,794
• Number of projects under community consultation	7	5	10	9
Community baseline data – China				
• Number of villages	-	0	11	11
• Number of people	-	9,194	18,190	18,190
• Number of projects under community consultation	-	6	15	16
Community baseline data – Indonesia				
• Number of villages	46	46	46	46
• Number of people	93,624	93,624	94,443	94,443
• Number of projects under community consultation	109	275	165	190
Number of significant community complaints	1	2	200	0
Proportion of significant complaints from communities resolved through a dispute mechanism	0%[c]	50%	100%	NA[b]
Number of community consultative committee meetings				
• Australia	-	-	26	17
• Indonesia	-	-	6	29
Number of community perception surveys				
• Australia	-	-	-	6
• Indonesia	-	-	35	2
Number of business units with social impact assessment[a]				
• Australia	-	-	9	9
• China	-	-	7	7
• Indonesia	-	-	7	7
Proportion of business units with social impact assessment[a]	-	-	-	30%
Proportion of business units with community perception serveys	-	-	-	45%

[a] Includes both operating site and project
[b] No significant complaints
[c] Complaint resolved in 2019

COMMUNITY DEVELOPMENT

	2018	2019	2020	2021
Coverage of annual stakeholder satisfaction survey on community development projects[a]	-	20%	100%	100%
Average stakeholder satisfaction level on community development projects[a]	68%	71%	78%	76%

[a] Data covers mining business in Indonesia only

RESETTLEMENT

	2018	2019	2020	2021
Number of resettlements	0	0	0	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

INDIGENOUS PEOPLES

	2018	2019	2020	2021
Number of indigenous peoples and ethnic minorities' rights violations	0	0	0	0
Proportion of indigenous peoples and ethnic minorities' rights violations resolved through a dispute mechanism	NA[a]	NA[a]	NA[a]	NA[a]

[a] No violations

HUMAN RIGHTS

	2018	2019	2020	2021
Coverage of business units assessed for human rights risks[a]	100%	-[f]	92%	86%
Number of operations assessed for human rights risks[a]				
• Thailand	-	-	1	1
• Indonesia	-	-	5	5
• China	-	-	10	10
• Australia	-	-	5	5
• Japan	-	-	12	15
• Vietnam	-	-	0	0
• The U.S.	-	-	0	0
Coverage of operations assessed for human rights risks[a]				
• Thailand	-	-	100%	100%
• Indonesia	-	-	100%	100%
• China	-	-	100%	100%
• Australia	-	-	100%	100%
• Japan	-	-	100%	100%
• Vietnam	-	-	0%	0%
• The U.S.	-	-	0%	0%
Coverage of business units with risk management plans[b]	100%	-[f]	NA[c]	NA[c]
Number of significant human rights issues	0	0	0	0
Proportion of significant human rights issues resolved through a dispute mechanism	NA[d]	NA[d]	NA[d]	NA[d]
Discrimination and harassment				
• Number of discrimination and harassment incidents	0	0	0	0
• Coverage of discrimination and harassment incidents resolved through a dispute mechanism	NA[e]	NA[e]	NA[e]	NA[e]

[a] Only operating site
[b] For business unit(s) identified as human rights risks
[c] No business units with human rights risks
[d] No significant issues
[e] No incidents
[f] Assessment process under standardization

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Disclosure	Description	Page	Detail/Omission	External Assurance
GRI 204: Procurement Practices 2016				
103-1	Explanation of the material topic and its Boundary	38, 106		-
103-2	The management approach and its components	39		-
103-3	Evaluation of the management approach	38-39		-
204-1	Proportion of spending on local suppliers	38, 110		-
GRI 205: Anti-corruption 2016				
103-1	Explanation of the material topic and its Boundary	34, 106		-
103-2	The management approach and its components	35		-
103-3	Evaluation of the management approach	34		-
205-1	Operations assessed for risks related to corruption	-		-
205-2	Communication and training about anti-corruption policies and procedures	34-35		-
205-3	Confirmed incidents of corruption and actions taken	107		-
GRI-G4 Sector Disclosure: System Efficiency				
103-1	Explanation of the material topic and its Boundary	44, 106		-
103-2	The management approach and its components	44		-
103-3	Evaluation of the management approach	44		-
EU11[E]	Average generation efficiency of thermal plants by energy source and by regulatory regime	110		-
ENVIRONMENT				
GRI 302: Energy 2016				
103-1	Explanation of the material topic and its Boundary	60, 106		Yes
103-2	The management approach and its components	61-62		Yes
103-3	Evaluation of the management approach	60-61		Yes
302-1	Energy consumption within the organization	113-114		Yes
302-3	Energy intensity	113-114		Yes
302-4	Reduction of energy consumption	-		-
GRI 303: Water and Effluents 2018				
103-1	Explanation of the material topic and its Boundary	66, 106		Yes
103-2	The management approach and its components	67-68		Yes
103-3	Evaluation of the management approach	66-67		Yes
303-1	Interactions with water as a shared resource	67-68		-
303-2	Management of water discharge-related impacts	68		-
303-3	Water withdrawal	115-117	The water withdrawal volume of coal logistic activity in Thailand is not fully collected. Moreover, TDS of water withdrawal Sources are not being collected but reported under freshwater. This data will be collected at all businesses for more accurately reported in SD Report 2022.	Yes

Disclosure	Description	Page	Detail/Omission	External Assurance
GRI 303: Water and Effluents 2018				
303-4	Water discharge	115-117	TDS of water discharge are not being collected. So, amount of water discharge of all business and Pollutant load of thermal power business is reported in total. Moreover, the pollutant load for mining business and renewable business is excluded. This data will be collected at all businesses for more accurately reported in SD Report 2022.	Yes
303-5	Water consumption	66-67, 115-117	The change in water storage is not available because the data collection system is under standardization and will be disclosed in SD Report 2022.	Yes
GRI 304: Biodiversity 2016				
103-1	Explanation of the material topic and its Boundary	72, 106		-
103-2	The management approach and its components	73		-
103-3	Evaluation of the management approach	72		-
304-1	Operational sites owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas	121-123		-
304-2	Significant impacts of activities, products, and services on biodiversity	73-74		-
304-3	Habitats protected or restored	72-74, 124		-
304-4	IUCN Red List species and national conservation list species with habitats in areas affected by operations	74		-
MM1[M]	Amount of land (owned or leased, and managed for production activities or extractive use) disturbed or rehabilitated	124		-
MM2[M]	The number and percentage of total sites identified as requiring biodiversity management plans according to stated criteria, and the number (percentage) of those sites with plans in place	73, 121-123		-

Disclosure	Description	Page	Detail/Omission	External Assurance
GRI 305: Emissions 2016				
103-1	Explanation of the material topic and its Boundary	54, 63, 106		Yes
103-2	The management approach and its components	58-59, 64-65		Yes
103-3	Evaluation of the management approach	54-57, 63-64		Yes
305-1	Direct (Scope 1) GHG emissions	112		Yes
305-2	Energy indirect (Scope 2) GHG emissions	112		Yes
305-3	Other indirect (Scope 3) GHG emissions	57, 112		Yes
305-4	GHG emissions intensity	54-55, 112		Yes
305-5	Reduction of GHG emissions	56		-
305-6	Emissions of ozone-depleting substances (ODS)	111		Yes
305-7	Nitrogen oxides (NO_x), sulfur oxides (SO_x), and other significant air emissions	111	The NO_x and PM emitted from non-point source are excluded and will be disclosed in SD Report 2023.	Yes
GRI 306: Waste 2020				
103-1	Explanation of the material topic and its Boundary	69, 106		Yes
103-2	The management approach and its components	70-71		Yes
103-3	Evaluation of the management approach	69-70		Yes
306-1	Waste generation and significant waste-related impacts	-		-
306-2	Management of significant waste-related impacts	-		-
306-3	Waste generated	118-120		Yes
306-4	Waste diverted from disposal	118-120		Yes
306-5	Waste directed to disposal	118-120		Yes
MM3[M]	Total amounts of overburden, rock, tailings, and sludges and their associated risks	124		-
GRI 307: Environmental Compliance 2016				
103-1	Explanation of the material topic and its Boundary	76, 106		-
103-2	The management approach and its components	76-77		-
103-3	Evaluation of the management approach	76		-
307-1	Non-compliance with environmental laws and regulations	125		-
GRI 308: Supplier Environmental Assessment 2016				
103-1	Explanation of the material topic and its Boundary	38, 106		-
103-2	The management approach and its components	39		-
103-3	Evaluation of the management approach	38-39		-
308-1	New suppliers that were screened using environmental criteria	-		-
308-2	Negative environmental impacts in the supply chain and actions taken	38		-

Disclosure	Description	Page	Detail/Omission	External Assurance
SOCIAL				
GRI 401: Employment 2016				
103-1	Explanation of the material topic and its Boundary	80, 106		-
103-2	The management approach and its components	81-82		-
103-3	Evaluation of the management approach	80		-
401-1	New employee hires and employee turnover	127, 129		-
401-3	Parental leave	129		-
GRI 403: Occupational Health and Safety 2018				
103-1	Explanation of the material topic and its Boundary	88, 106		Yes
103-2	The management approach and its components	89		Yes
103-3	Evaluation of the management approach	88-89		Yes
403-1	Occupational health and safety management system	90		-
403-2	Hazard identification, risk assessment, and incident investigation	88		-
403-3	Occupational health services	88		-
403-4	Worker participation, consultation, and communication on occupational health and safety	88		-
403-5	Worker training on occupational health and safety	88		-
403-6	Promotion of worker health	88		-
403-7	Prevention and mitigation of occupational health and safety impacts directly linked by business relationships	88		-
403-8	Workers covered by an occupational health and safety management system	131		Yes
403-9	Work-related injuries	88-89, 131	The working hours of contractor with less than 5 consecutive working days are excluded and will be disclosed in SD Report 2023. Moreover, the working hours of employee remaining on site after working hour are not recorded; however, the incident is recorded, if any case occur.	Yes
403-10	Work-related ill health	131		-
GRI 404: Training and Education 2016				
103-1	Explanation of the material topic and its Boundary	83, 106		-
103-2	The management approach and its components	85		-
103-3	Evaluation of the management approach	83-84		-
404-1	Average hours of training per year per employee	130		-
404-2	Programs for upgrading employee skills and transition assistance programs	83-84		-
404-3	Percentage of employees receiving regular performance and career development reviews	-		-

Disclosure	Description	Page	Detail/Omission	External Assurance
GRI 405: Diversity and Equal Opportunity 2016				
103-1	Explanation of the material topic and its Boundary	-		-
103-2	The management approach and its components	13, 93		-
103-3	Evaluation of the management approach	12, 126		-
405-1	Diversity of governance bodies and employees	12, 126		-
405-2	Ratio of basic salary and remuneration of women to men	79, 128		-
GRI 411: Rights of Indigenous Peoples 2016				
103-1	Explanation of the material topic and its Boundary	106		-
103-2	The management approach and its components	97		-
103-3	Evaluation of the management approach	132		-
411-1	Incidents of violations involving rights of indigenous peoples	79, 132		-
MM5[M]	Total number of operations taking place in or adjacent to Indigenous Peoples' territories, and number and percentage of operations or sites where there are formal agreements with Indigenous Peoples' communities	-		-
GRI 412: Human Rights Assessment 2016				
103-1	Explanation of the material topic and its Boundary	92, 106		-
103-2	The management approach and its components	93		-
103-3	Evaluation of the management approach	92		-
412-1	Operations that have been subject to human rights reviews or impact assessments	92, 133		-
412-2	Employee training on human rights policies or procedures	-		-
GRI 413: Local Communities 2016				
103-1	Explanation of the material topic and its Boundary	94, 96, 106		-
103-2	The management approach and its components	95, 97		-
103-3	Evaluation of the management approach	94, 96-101		-
413-1	Operations with local community engagement, impact assessments, and development programs	132		-
413-2	Operations with significant actual and potential negative impacts on local communities	-		-
MM6[M]	Number and description of significant disputes relating to land use, customary rights of local communities and Indigenous People	94, 132		-
MM7[M]	The extent to which grievance mechanisms were used to resolve disputes relating to land use, customary rights of local communities and Indigenous Peoples, and the outcomes	95		-
EU22[E]	Number of people physically or economically displaced and compensation, broken down by type of project	132		-
GRI 414: Supplier Social Assessment 2016				
103-1	Explanation of the material topic and its Boundary	38, 106		-
103-2	The management approach and its components	39		-
103-3	Evaluation of the management approach	38-39		-
414-1	New suppliers that were screened using social criteria	-		-
414-2	Negative social impacts in the supply chain and actions taken	38		-

Disclosure	Description	Page	Detail/Omission	External Assurance
GRI 416: Customer Health and Safety 2016				
103-1	Explanation of the material topic and its Boundary	40, 106		-
103-2	The management approach and its components	40		-
103-3	Evaluation of the management approach	40		-
416-1	Assessment of the health and safety impacts of product and service categories	-		-
416-2	Incidents of non-compliance concerning the health and safety impacts of products and services	40, 110		-
GRI 418: Customer Privacy 2016				
103-1	Explanation of the material topic and its Boundary	49, 106		-
103-2	The management approach and its components	49		-
103-3	Evaluation of the management approach	49		-
418-1	Substantiated complaints concerning breaches of customer privacy and losses of customer data	40, 110		-
GRI 419: Socioeconomic Compliance 2016				
103-1	Explanation of the material topic and its Boundary	45, 106		-
103-2	The management approach and its components	45		-
103-3	Evaluation of the management approach	45		-
419-1	Non-compliance with laws and regulations in the social and economic area	45, 109		-
GRI-G4 Sector Disclosure: Resettlement				
103-1	Explanation of the material topic and its Boundary	-		-
103-2	The management approach and its components	97		-
103-3	Evaluation of the management approach	79, 132		-
MM9[M]	Sites where resettlements took place, the number of households resettled in each, and how their livelihoods were affected in the process	132		-
GRI-G4 Sector Disclosure: Closure Planning				
103-1	Explanation of the material topic and its Boundary	-		-
103-2	The management approach and its components	77		-
103-3	Evaluation of the management approach	53, 124		-
MM10[M]	Number and percentage of operations with closure plans	124		-
GRI-G4 Sector Disclosure: Access				
103-1	Explanation of the material topic and its Boundary	44, 106		-
103-2	The management approach and its components	44		-
103-3	Evaluation of the management approach	44		-
EU30[E]	Average plant availability factor by energy source and by regulatory regime	44, 110		-

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

SDGs CONTRIBUTION MATRIX

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

● Direct Contribution
○ Indirect Contribution

UN GLOBAL COMPACT COP INDEX

Criteria	Description	Page
Implementing the Ten Principles into Strategies & Operations		
1	The COP describes mainstreaming into corporate functions and business units	7, 22-25, 30-32
2	The COP describes value chain implementation	38-39
Robust Human Rights Management Policies & Procedures		
3	The COP describes robust commitments, strategies or policies in the area of human rights	92-93
4	The COP describes effective management systems to integrate the human rights principles	93
5	The COP describes effective monitoring and evaluation mechanisms of human rights integration	93
Robust Labor Management Policies & Procedures		
6	The COP describes robust commitments, strategies or policies in the area of labor	24, 80-82
7	The COP describes effective management systems to integrate the labor principles	34-35, 89
8	The COP describes effective monitoring and evaluation mechanisms of labor principles integration	80-82, 83-85, 88-91
Robust Environmental Management Policies & Procedures		
9	The COP describes robust commitments, strategies or policies in the area of environmental stewardship	19, 22-23, 25, 59, 74
10	The COP describes effective management systems to integrate the environmental principles	58-59, 61-62, 64-65, 68, 70-71, 74, 78
11	The COP describes effective monitoring and evaluation mechanisms for environmental stewardship	30-31, 54-55, 60-61, 63-64, 66-67, 69-70, 72-73, 75-76
Robust Anti-Corruption Management Policies & Procedures		
12	The COP describes robust commitments, strategies or policies in the area of anti-corruption	25, 35
13	The COP describes effective management systems to integrate the anti-corruption principle	35
14	The COP describes effective monitoring and evaluation mechanisms for the integration of anti-corruption	34
Taking Action in Support of Broader UN Goals and Issues		
15	The COP describes core business contributions to UN goals and issues	22-25, 97-99, 142
16	The COP describes strategic social investments and philanthropy	20-21, 43, 97-99
17	The COP describes advocacy and public policy engagement	7, 19, 22-23
18	The COP describes partnerships and collective action	20-21, 97-99
Corporate Sustainability Governance and Leadership		
19	The COP describes CEO commitment and leadership	4-5, 32
20	The COP describes Board adoption and oversight	12, 30-31
21	The COP describes stakeholder engagement	14, 35, 81, 94-95, 104-105

LRQA Independent Assurance Statement

Relating to Banpu Public Company Limited's Sustainability Report for the calendar year 2021

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 2021 ("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))
  - in accordance with GRI Standard and Core option
  - in accordance with GRI Mining Metals sector disclosures and GRI Electric Utilities sector disclosures.
- Evaluating the reliability of data and information for only the selected performance indicators listed below [1, 2]:
  - GRI 302-1 Energy consumption within the organization (2016)
  - GRI 302-3 Energy intensity (2016)
  - GRI 303-3 Water withdrawal (2018)[3]
  - GRI 303-4 Water discharge (2018)[3]
  - GRI 303-5 Water consumption (2018)[3]
  - GRI 305-1 Direct (Scope 1) GHG emissions (2016)
  - GRI 305-2 Energy indirect (Scope 2) GHG emissions (2016)
  - GRI 305-3 Other indirect (Scope 3) GHG emissions (2016)[4]
  - GRI 305-4 GHG emissions intensity (2016)[]
  - GRI 305-7 Nitrogen Oxides (NOx), Sulfur Oxides (SOx) and other significant air emissions (2016)
  - GRI 306-3 Waste generated (2020)
  - GRI 306-4 Waste diverted from disposal (2020)
  - GRI 306-5 Waste directed to disposal (2020)
  - GRI 403-8 Workers covered by an occupational health and safety management system (2018)
  - GRI 403-9 Work-related injuries (2018)
  - Lost time injury frequency rate (LTIFR) and injury severity rate (ISR)
  - Tier-1 Process safety event rate

Note:

1) Reporting boundary of these performances data does not include Banpu's subsidiaries and related companies that Banpu holds less than 50% of shares and does not have management control i.e. Mining Business in China, Thermal Power Business in Thailand, Lao PDR and Japan, Energy Storage and System Business in China, Electric Vehicles Business in Thailand.
2) Reporting boundary of these performances data also excludes some of Banpu's subsidiaries and related companies that Banpu holds more than 50% of shares and have management control i.e. Smart Community Business in Thailand, Energy Trading Business in Japan, and Thermal Power Business in U.S.
3) LRQA's assurance on these performances does not include the whole Mining Business.
4) Reporting of scope 3 GHG emission is limited only to emissions from coal sold as a product from the Mining Business.

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

1.https://www.accountability.org/
2 https://www.globalreporting.org
3 GHG quantification is subject to inherent uncertainty.

LRQA's Opinion

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

- Met the requirements above, with the exception of some omissions in the reported data. However, these omissions, and the reason for these omissions, are both clearly stated in the GRI content index within the report i.e.
  - TDS for water discharge is not analysed at Thermal Power business, so total volume of water discharged is reported without indicating whether it is fresh water or other water. Also, the pollutant load for Mining business and Renewable business is excluded.
  - The data for change in water storage is not available, so this data is not included in GRI 303-5.
  - The NOx and PM emitted from non-point sources are excluded from GRI 305-7.
  - The working hours of contractors with less than 5 consecutive working days and the working hours of employees remaining on site after working hours are not recorded, so these are excluded from GRI 403-9.
- Disclosed reliable performance data and information for the selected performance indicators above
- Covered all the issues that are important to the stakeholders and readers of this report.

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

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

LRQA's approach

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

- Assessing Banpu's approach to stakeholder engagement to confirm that issues raised by stakeholders were captured correctly. We did this through interviews with the head of Banpu's Health, Safety, Environmental and Community Engagement Division, who is responsible for identification of stakeholder groups and processes for stakeholders' engagement.
- Reviewing documents and associated records e.g., Stakeholder expectation survey - collected from each relevant business unit, results of employee engagement survey, summary result of community satisfaction survey by each business unit.
- Reviewing Banpu's process for identifying and determining material issues to confirm that the right issues were included in their report. We did this by benchmarking reports written by Banpu and its peers to ensure that sector specific issues were included for comparability. We also tested the filters used in determining material issues to evaluate whether Banpu makes informed business decisions that may create opportunities that contribute towards sustainable development.
- Auditing Banpu's data management systems to confirm that there were no significant errors, omissions, or misstatements in the report. We did this by reviewing the effectiveness of data handling procedures, and systems, including those for internal verification. We also spoke with those key people responsible for compiling the data and drafting the report.
- Reviewing and accepting GHD Pty Ltd's "Independent assurance practitioner's limited assurance report on Centennial Coal's Greenhouse Gas Emissions and Energy inventory for CY21" as evidence to confirm that Scope 1 and Scope 2 GHG emissions have been verified and assured as part of Banpu's 2021 data verification.
- Verifying data and information remotely, via video conference, for a selection of Banpu's subsidiary companies' sites (i.e. IMM Coal Mining site of PT Indo Tambangraya Megah Tbk in Indonesia, Luannan Thermal Power Plant of BPP in China, Zouping Thermal Power Plant of BPP in China, Springvale Coal Mining site of Centennial Coal Co., Ltd. in Australia, Ayutthaya Coal Center and Tamaka Coal Center in Thailand) and verifying aggregated data, via desktop review, for all selected performance indicators at a corporate level.
  Note: LRQA did not verify the data back to its original sources, nor did it assess the accuracy and completeness of the data reported by individual locations.

1. https://www.accountability.org/
2 https://www.globalreporting.org
3 GHG quantification is subject to inherent uncertainty.

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 has open dialogue with all of its stakeholders, applying various methods such as:
  - day-to-day engagement by operations across each business unit, and
  - specific opinion surveys e.g. employee engagement survey, community satisfaction survey.

  Banpu's sustainability strategy, and the content of this report, have been informed by the views and expectation of these stakeholders.
- Materiality:
  We are not aware of any material issues concerning Banpu's sustainability performance that have been excluded from the report. It should be noted that Banpu has established extensive criteria for determining which issue is material by considering stakeholders' expectations/interests as well as global sustainability trends and peers' sustainability strategic analysis in each business. These material issues have then been prioritised, used to set strategy and influenced Banpu's performance disclosures.
- 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,
  - TDS of water discharged should be sampled regularly to enable Banpu to categorise its water and report the volume of water discharged under each category, for example: freshwater, wastewater or other water.
    In addition, Banpu should extend its scope of pollutant load to cover all applicable businesses. This means future reports will better present the performance of wastewater treatment and Banpu's response to addressing water issues.
  - NOx and PM emitted from non-point sources should be included in future reports to enhance Banpu's responsiveness to addressing air emissions.
  - The reporting of scope 3 GHG emissions is limited only to GHG emissions from Coal Sold but there may be other categories of scope 3 GHG emissions that are equally significant. Future reports should capture these other categories. This will enhance the responsiveness of Banpu's influence/contribution along its supply chain in addressing this global material issue.
- Impact:
  Banpu has monitored, measured and been accountable for how their actions affect the broader ecosystems, as related to their material issues. However, Banpu should be clearer on demonstrating how its interaction with water and participation with other stakeholders can address water related impacts for this shared resource.
- Reliability:
  Data management systems are established and centralised for the collection and calculation of data associated with the selected performance indicators. However, we believe that:
  - the reliability and uncertainty of the reported data of water consumption can be improved by monitoring the change of water storage during the reporting period and applying this data for calculation of water consumption.
  - the reliability of the reported data of water withdrawal categories, whether it is withdrawal from freshwater or from other water sources, can be improved by periodically analysing the TDS content of water withdrawn, rather than applying a default to all sources (apart from seawater/brackish water).
  - future reports should include working hours of contractors with less than 5 consecutive working days and the working hours of employees remaining on site after working hours. This will reduce the potential for under reporting of total working hours.
  - increasing the frequency of point source air emission analysis in the Coal Mining business in Indonesia will improve the reliability of reported data and make the data more representative.
  - to ensure a consistent approach, the same methodology for monitoring and calculating air emissions and water related data should be applied across all business units.
  - more vigorous and systematic internal verification by each business unit, and at the corporate level, will improve the reliability of reported data and information.

1.https://www.accountability.org/
2 https://www.globalreporting.org
3 GHG quantification is subject to inherent uncertainty.

LRQA's standards, competence and independence

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

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

Paveena Hengsritawat
LRQA Lead Verifier
On behalf of Lloyd's Register Quality Assurance Ltd.
LRQA (Thailand) Limited
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Dated: 11 May 2022

LRQA reference: BGK406051

1. https://www.accountability.org/
2 https://www.globalreporting.org
3 GHG quantification is subject to inherent uncertainty.

FEEDBACK SURVEY

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

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

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

2. How did you receive this report?

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

3. What is your reason for reading this report?

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

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

Governance

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

Environment

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

Social

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

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

- ○ Yes
- ○ No

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

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

- ○ High
- ○ Medium
- ○ Low

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

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

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

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

9. Please provide your additional comments or suggestions

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Thank you for your opinion and feedback

BANPU | INTERNATIONAL VERSATILE ENERGY PROVIDER