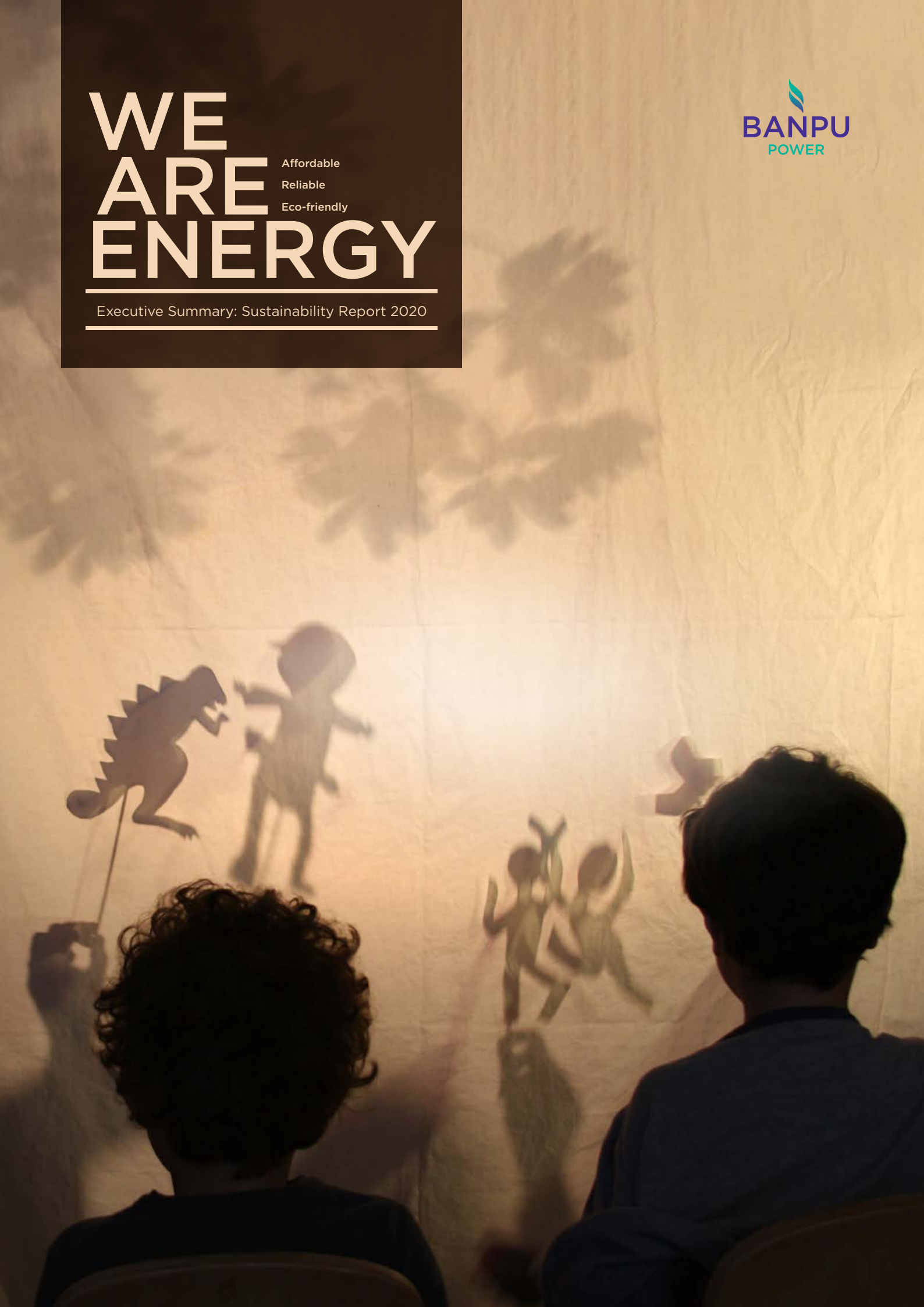
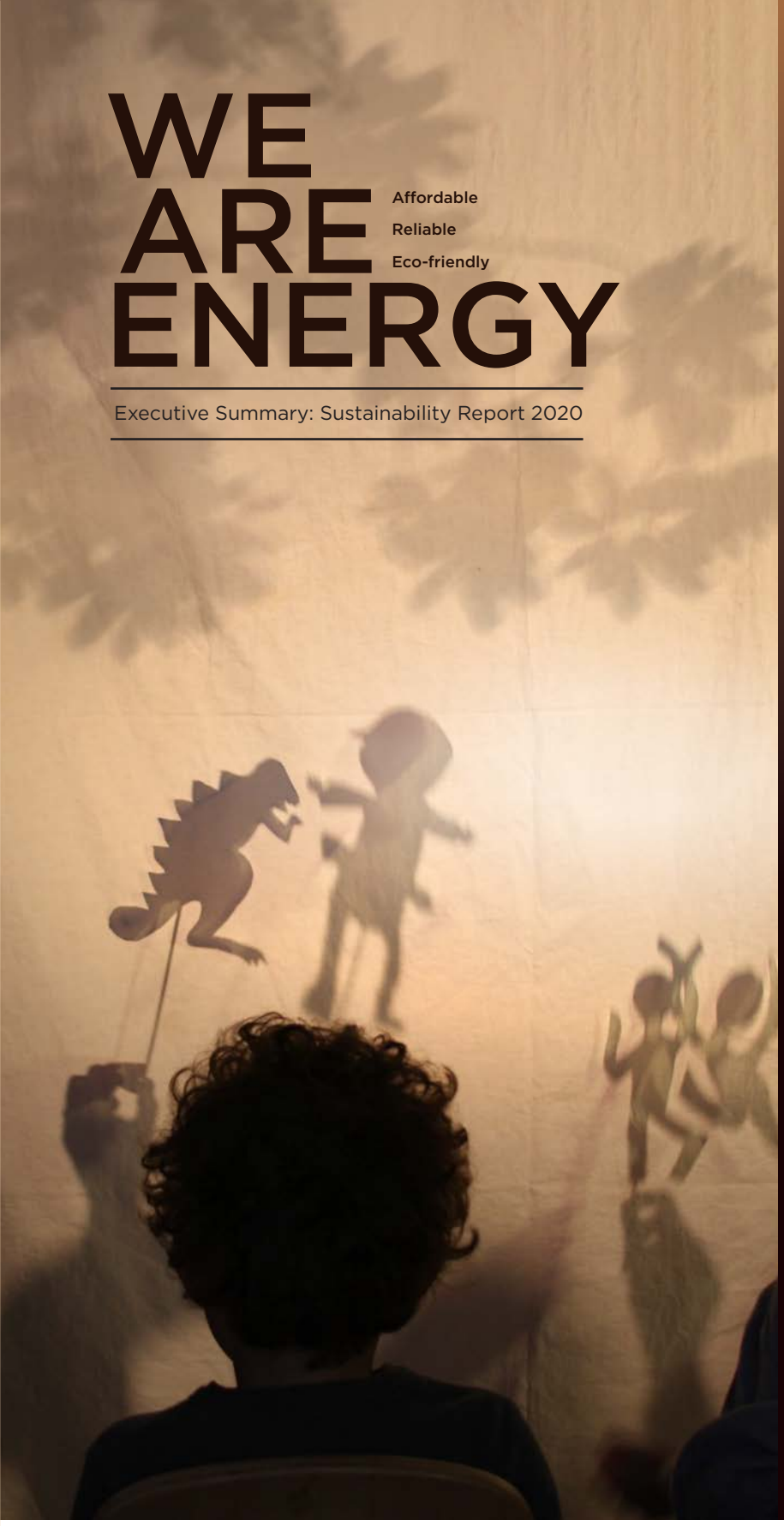
WE ARE ENERGY

Affordable
Reliable
Eco-friendly

Executive Summary: Sustainability Report 2020

BANPU POWER





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Vision

To be recognized as a pioneer Asian power company with a strong reputation for sustainable development, friendly community relations, and respect for the natural environment.

Mission

- To develop, own and operate both conventional and renewable power businesses using the most efficient technologies available for sustainable growth in pursuit of a position of leadership in Asia.
- To conduct all business in an ethically, socially and environmentally responsible manner.
- To create sustainable value for shareholders, customers, business partners, employees, and communities while being a good corporate citizen in all countries of operations.

This Executive Summary: Sustainability Report is developed to disseminate the sustainable operating performance of Banpu Power Public Company Limited, focusing only on contents related to topics interested by major stakeholders during the year 2020. In order to help reduce the greenhouse gas (GHG) emissions, the full SD Report 2020 is made in a digital format in which you can download at: https://www.banpupower.com/investor-relations/publications/sustainability-report/

Contents

Operational Highlights

EBITDA **5,230** million THB
increasing **9**% from the previous year

Total Committed Capacity
2,856 MWe

increase of
427 MWe

25
Operating power plants

Total operating capacity
2,750 MWe

Established
Banpu NEXT
to invest in renewable energy and energy technology

A total production capacity of renewable energy generation and solar rooftop
(equity investment)
347 MWe

Availability Factor
(AF) of power plants in China
97.72%

Business continuity during COVID-19 with zero infected employee

The greenhouse gas (GHG) emissions intensity
0.620
tonnes CO_2e/ MWh

Water consumption intensity
0.901
cubic meters/ MWh

Utilize High Efficiency, Low Emissions (HELE) technology
for excellent environmental performance

The sulfur dioxide (SO_2) emissions intensity
0.0254
tonnes/ GWh

The oxides of nitrogen (NO_x) emissions intensity
0.0420
tonnes/ GWh

The particular matters emissions intensity
0.0027
tonnes/ GWh

No work-related accident

No incidents related to environment, social and governance

BanpuHeart
A strong corporate culture helping combine the 'power' in driving businesses.

Establishing a financial support of THB **500** million with Banpu group and alliance to aid society on COVID-19

Assoc. Prof. Dr. Naris Chaiyasoot
Chairman of the Board of Directors

Dr. Kirana Limpaphayom
Chief Executive Officer
and Chairman of the Sustainable Development Committee

Messages from Chairman of the Board of Directors and Chief Executive Officer

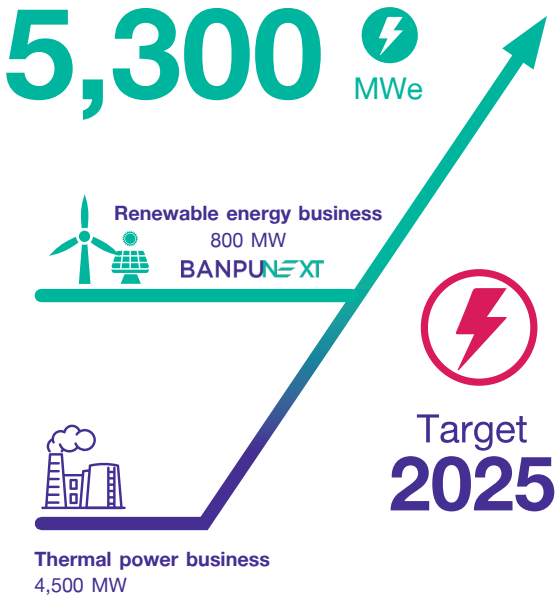
The year 2020 has been a challenging year for not only Banpu Power Group (BPP), but also other businesses due to a widespread impact of the COVID- 19 epidemic crisis across the globe since early 2020 until 2021. Nonetheless, Banpu Power has overcome this challenge, owing to its flexible management system corresponding to the rapid changes. This has made the company still capable to conduct business and generate cash flows continuously. In 2020, Banpu Power Plc. recorded a net profit of THB 3,702 million, an increase of 25 % from the previous year, thanks to sound operational results from the three combined heat and power (CHP) plants in China and BLCP Power Plant, which were able to maintain their availability and operating efficiency consistently as planned. The operational performance of HPC Power Plant, however, was marginally lower than the plan set as a result of the maintenance outage of some production units affected by a lightning strike on the high-voltage power transmission line at the beginning of the 2nd quarter of the year. More importantly, BPP succeeded in commencing the commercial operations of solar power plants in Japan, namely Yamagata and Yabuki, respectively, as well as purchasing the Elvin Mui Dinh Wind Power Plant in Vietnam. As a result, BPP has a current power operating capacity of 2,750 MW based on equity investments of the power plants already commencing commercial operations.

In addition to tirelessly generating good returns, BPP has also aimed at growing its power generation business, including the thermal power business in the base load power plants and the investment in the renewable power business in the Asia- Pacific region. In the past year, BPP underwent a significant change in the organizational structure – an amalgamation between Banpu Renewable Energy Company Limited (BRE), a subsidiary company, and Banpu Infinergy Company Limited (BPIN), a subsidiary of Banpu Public Company Limited, to set up Banpu NEXT Company Limited (Banpu NEXT) in February 2020 with a focus on investment and development of renewable energy and energy technology businesses. BPP and Banpu Plc. have equal shareholding of 50% each in Banpu NEXT. This amalgamation has enabled BPP to increase its investments in renewable energy and energy technology businesses, consisting of renewable energy plant, solar rooftop, energy storage system, electric vehicle, smart community and the energy management system.

To create a consistent and sustainable growth of the power generation business and to enhance an ability to deliver energy contributing values for economic development to all areas with affordable prices (Affordable), stable power delivery (Reliable) and environmentally friendly (Eco-friendly), BPP has planned to manage its businesses by using three significant strategies:

- Synergizing with Banpu Group to further develop and operate the power generation business in the countries where Banpu Group has operated.
- Seeking the investment opportunities in countries with economic growth and high demand for power in the Asia-Pacific region.
- Driving the growth of renewable energy and energy technology businesses through an investment in Banpu NEXT.

BPP has paid great attention to improve the power plants' operations and adopt High Efficiency, Low Emissions or HELE technologies in accordance with the Greener & Smarter strategy. The three CHP plants in China were granted financial support from the local governments as a consequence of their outstanding performances on controlling the air quality. BPP has set its power generation target of 5,300 MWe by the year 2025, consisting of 4,500 MW from the thermal power business and another 800 MW from the renewable energy business invested through Banpu NEXT. It has also determined a target for the greenhouse gas emissions intensity to no more than 0.676 tonnes CO_2e/ MWh over the next five years in order to drive the organization to create innovations helping increase the efficiency of cost- effective use of resources and be a part in tackling the climate change problems.

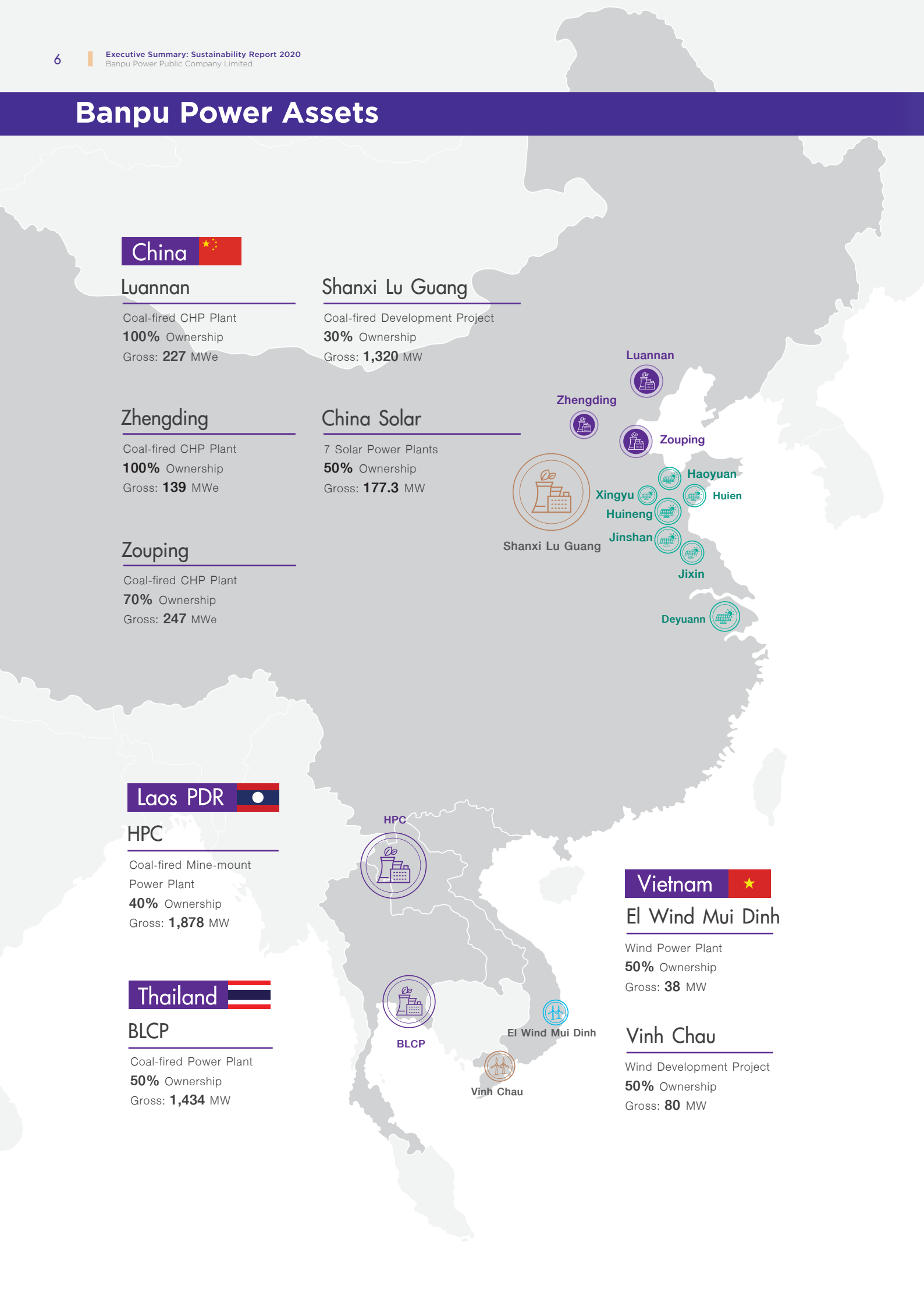


Although the COVID- 19 outbreak is far more widespread than any crisis in the past, the ability to adapt ourselves to meet the organizational changes, including the efficient Business Continuity Management has helped the performance of Banpu Power Plc. in achieving the targets set. Furthermore, all of the power plants were able to constantly provide stability and reliability in generating power and steam for customers and communities with the utmost efficiency. In addition, with the safety operating standards and a focus on building a safety culture across the organization, all of the power plants that Banpu Power Plc. has management control had no working accidents while none of their employees was infected with the COVID- 19.

More importantly, Banpu Power has been selected as one of the sustainable stocks on the Stock Exchange of Thailand or 'Thailand Sustainable Investment' (THSI) for the third consecutive year. Additionally, it has been certified as a member of Thailand's Private Sector Collective Action Coalition Against Corruption (CAC) from the Thai Institute of Directors Association. These demonstrate the commitments of BPP to creating the sustainable growth, taking into account the Environmental, Social and Governance (ESG) along with adding values and keeping balances between cash flows and returns for all stakeholders.

On behalf of the Board of Directors, the executives and all employees of Banpu Power Group, we would like to thank all stakeholders for their trust and support in the company despite new changes and challenges. The spirit of 'Banpu Heart', a unique feature of our people, and the continued development of our human resources in accordance with the corporate strategic plans and future changes will allow us to be resillience and go through any challenges as well as continue committing to delivering the sustainably valuable energy to the society.

Banpu Power Assets



China

Luannan

Coal-fired CHP Plant
100% Ownership
Gross: **227** MWe

Shanxi Lu Guang

Coal-fired Development Project
30% Ownership
Gross: **1,320** MW

Zhengding

Coal-fired CHP Plant
100% Ownership
Gross: **139** MWe

China Solar

7 Solar Power Plants
50% Ownership
Gross: **177.3** MW

Zouping

Coal-fired CHP Plant
70% Ownership
Gross: **247** MWe

Laos PDR

HPC

Coal-fired Mine-mount Power Plant
40% Ownership
Gross: **1,878** MW

Thailand

BLCP

Coal-fired Power Plant
50% Ownership
Gross: **1,434** MW

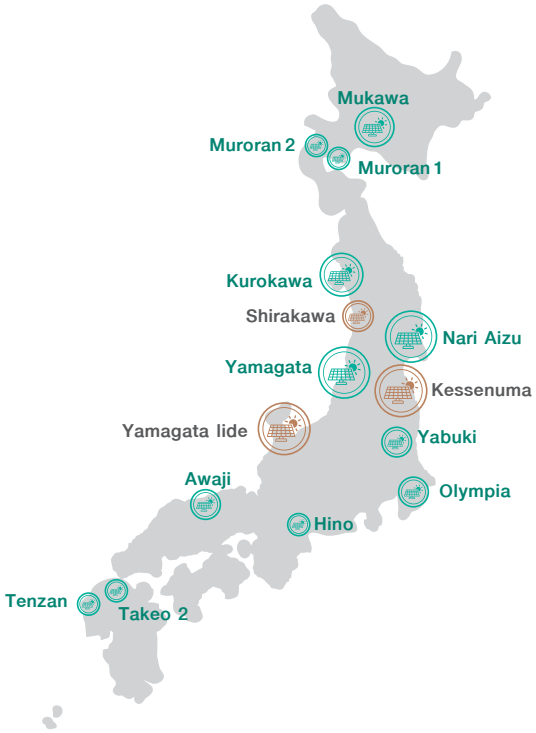
Vietnam

El Wind Mui Dinh

Wind Power Plant
50% Ownership
Gross: **38** MW

Vinh Chau

Wind Development Project
50% Ownership
Gross: **80** MW

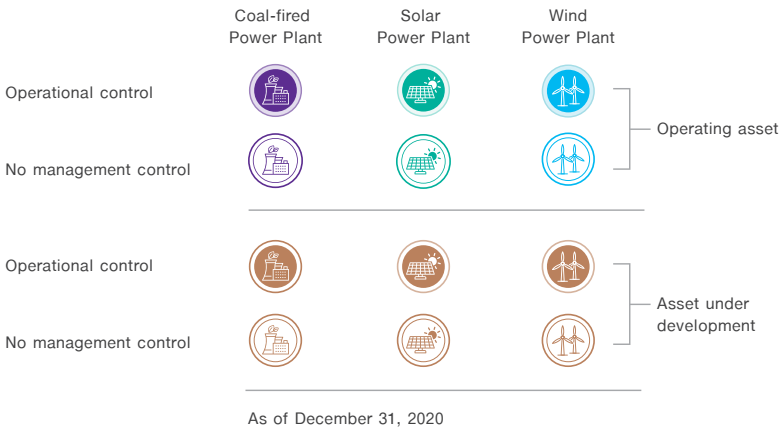


Japan

Japan Solar

12 Solar Power Plants
20-50% Ownership
Gross: **88** MW

3 Solar Development Projects
20-50% Ownership
Gross: **132** MW



As of December 31, 2020

About Banpu Power

Banpu Power Public Company Limited or Banpu Power (BPP) is a subsidiary of Banpu Public Company Limited. Established in 1996, BPP was listed on the Stock Exchange of Thailand in 2016. The Company has operated the power business and supplied electricity from thermal power generation and renewable power generation in the Asia-Pacific region.

Presently, BPP has total committed capacity 2,856 MWe

consisting of 2,750 MWe from commercially operating power plants and 106 MW from power projects under construction and development. In the year 2020, the Company had total assets of THB 49,563 million, increasing THB 755 million from the year 2019.

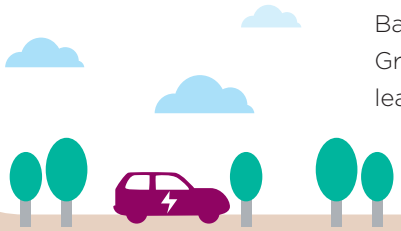
In 2020, Banpu Renewable Company Limited (BRE), a subsidiary company of BPP, amalgamated with Banpu Infinergy Company Limited (BPIN) so as to form Banpu NEXT Company Limited (Banpu NEXT). Banpu NEXT is focusing on investing and developing both green power and energy related technologies in Thailand and Asia. BPP and Banpu each holds 50% stakes in Banpu NEXT.

Summary of Major Changes and Development

February

Banpu NEXT Co., Ltd. (Banpu NEXT) was established as the important business base for clean energy operations and energy technology development. BPP and Banpu each holds 50% of the issued shares. Banpu NEXT has a registered capital of THB 7,919 million.

June



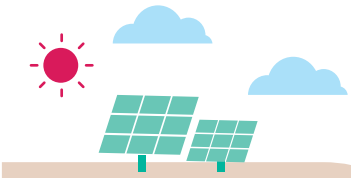
Banpu NEXT established a new subsidiary, namely Banpu NEXT Green Leasing Co., Ltd. to provide energy services for rental and leasing as well as electric vehicles related businesses.

July

Banpu NEXT signed an agreement to buy the 37.6 MW El Wind Mui Dinh Wind Power Plant in Vietnam. With an investment value of USD 66 million, the plant commenced its commercial operation on 23 April 2019. This wind energy investment is in the process of complying with conditions involved with the contract and approvals from relevant government agencies.

November

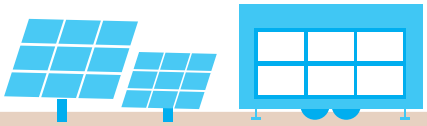
Banpu NEXT commenced the commercial operation of Yamagata Solar Power Plant in Japan. With a total production capacity of 20 MW, the power plant is located in Yamagata Prefecture. This solar power plant can generate power supplied to approximately 5,000 households in the community. The plant was later renamed as the 'Kawanishi Dahlia Solar Power Plant' so as to make it familiar to communities in the area.



Banpu NEXT launched the 'Banpu NEXT e- Ferry', the first ever sea e- Ferry for tourism of Thailand.

December

Banpu NEXT started the commercial operation of Yabuki Solar Power Plant in Japan, located in Fukushima Prefecture, with a total capacity of 7 MW.



Banpu NEXT launched the 'Banpu NEXT e-Prompt Move', an off-grid solar power generation and storage system, and Thailand's first all-in-one mobile solution for clean electricity.

Sustainable Development of Banpu Power

BPP is committed to operating the energy business by using the proper innovation and technology to deliver energy creating values for economic and social development with affordable prices and reliable & environmentally friendly (Eco-friendly) manner. In addition to continually improving operational efficiency, the Company has also increased its potential to adapt itself to the rapid changes currently. The COVID-19 epidemic situation, in particular is the important test of the Company's strategy and foundation for sustainable development, taking into account the creation of long-term values for stakeholders. It is also a hope that the Company's operations will be a part to support the sustainable development in all areas in which the Company has operated.

AFFORDABLE

- Clean and appropriate innovations and technologies
- Investment structure and management properly to each project
- Engagement of business partners throughout the supply chain

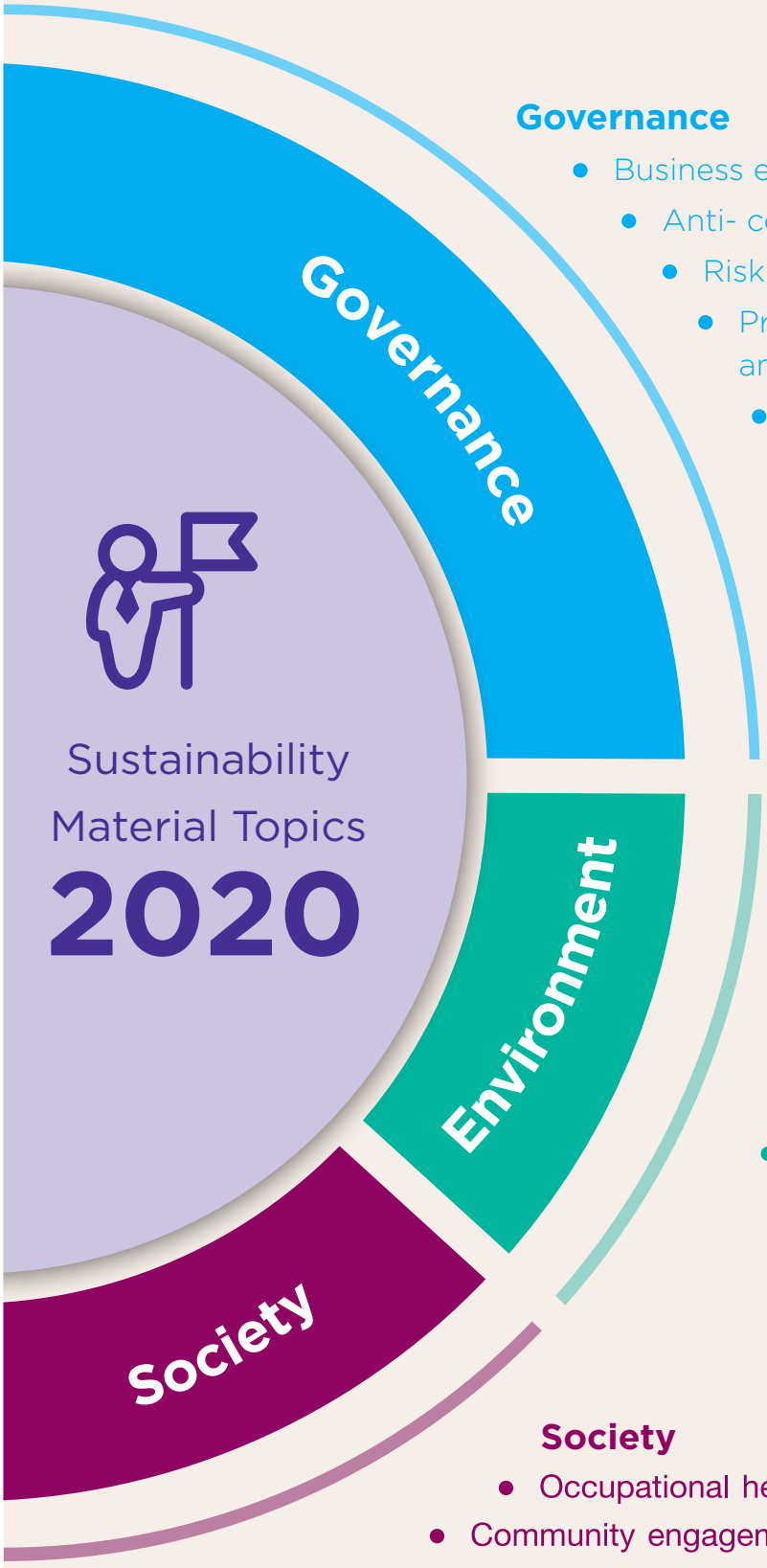
RELIABLE

- Business ethics
- Risk Assessment
- Employee management and competency development

ECO-FRIENDLY

- Implementation of the eco-friendly operational standards and high technologies
- Occupational health and safety
- Stakeholders and surrounding community engagement

The Company has a management framework to drive the operations and create growth. The sustainability materiality topics have also been assessed via stakeholder engagement, including the assessment of risks and changes. In 2020, the sustainable materiality could be summarized into 14 topics.



Governance

- Business ethics
- Anti- corruption
- Risk management
- Process improvement and innovation
- Contractor management
- Supplier management
- Customer management
- Business Continuity Management*

Environment

- Greenhouse gas (GHG) emissions
- Air quality
- Water resources utilization and water discharge

Society

- Occupational health and safety
- Community engagement
- Succession Plan*

* New material topics in 2020

Business Ethics

The Company supervised its operations in accordance with the good governance principle and business ethics, fully complying with laws and regulations. This included an implementation of the international best practice standards, a promotion on transparency and equality across the organization, ranging from the Board of Directors to the employees.

2020 Performance

- No CG complaints.
- Communicating and organizing interesting activities to raise awareness of employees via e- mail or organizing the CG Day activities, etc.
- Receiving a 5- star CG Rating (Very good level) from the Corporate Governance Report of Thai Listed Companies (CGR) project.

Anti- corruption

The Company declared its intention to fight against all forms of corruption and has strictly complied with laws and regulations, including local culture and norms in all countries where it has operations. In addition, risks related to corruption were assessed in order to develop preventive measurements while the whistle blowing channel was created and communicated to employees and the general public.

2020 Performance

- Zero tolerance against corruption.
- Being a member of the Collective Action Against Corruption (CAC)
- The internal corporate shared values survey results found that the value of 'Adherence to Integrity and Ethics' is one of the behaviors employees expressing the most.

Risk Management

The Company has integrated the sustainability risk management at the beginning, starting from the corporate missions to strategies, inclusion of the sustainability risk and materiality analysis, with an aim to manage risks related to environmental, social, and governance (ESG). Key materiality in the past year included adapting, managing, and maintaining the Company's operational capabilities amid the COVID- 19 epidemic.

2020 Performance

- Implementation of a risk management system covering all business entities.
- Assessing the ESG risks assessment, covering all business units, and expanding the scope to joint venture operations i.e. HPC Power Plant.
- Developing risks management applications 'C-Rim' in conjunction with the real-time legal compliance.

Process Improvement and Innovation

The Company has continuously promoted innovations and continuous improvement through 'Greener Smarter' strategy, encourage employees' initiatives/ ideas and approved for true actions. Additionally, the innovation exchange has been carried out within the organization through knowledge management and organizing the annual Innovation Convention.

2020 Performance

- Initiating the innovative projects to increase production efficiency and preserve the environment, such as a project to use waste gas from the customer's furnaces to replace coal, and a zero- water discharge project to reduce water released from the power plants, etc.
- To be a power plant of the future, the digital transformation project was implemented by analyzing the power plant's operational procedures so as to use the digital technology to optimize its operational performance completely, for example, a development of applications for the power plant's operation and maintenance system, and energy management, etc.

Contractor Management

The Company has a transparent and fair contractor selection procedure, giving top priority to manage contractor's safety equally to its employees. This process has been run through the integration of the ISO9001 quality management system standard and the ISO45001 occupational health and safety system management system standard as well as the ISO14001 environmental system standard. Additionally, prior to starting operations, contractors have been continuously evaluated, trained, and motivated, inclusion of a participation in the sustainable development in order to mitigate risks related to environment, society and governance.

2020 Performance

- No severe accidents related to contractor' s operations.
- No incidents relating to contractors violating laws, regulations, human rights and labors.
- Communicating the Sustainable Supply Chain policy and the Supplier Code of Conduct.

Supplier Management

The Company communicated the Sustainable Supply Chain Policy and Supplier Code of Conduct to reduce environmental, social, and corporate governance risks in the supply chain and promote a mutual sustainable development.

2020 Performance

- No complaints related to supplier management on environment, social, and corporate governance.
- No incidents relating to suppliers violating laws, human rights and labors.
- Conducting a satisfactory survey among the supplier group on co-working with the Company. The survey found that 100% of suppliers and 95% of joint-venture company were satisfied with the Company.

Customer Management

The Company has paid great important on responding to customer's needs as well as delivering the power and thermal energy consistently. This has been done through improving the power generation system to be consistent and efficient, and being flexible for operational adjustment in order to respond to customers' needs, especially during the outbreak of COVID-19 when customers have been affected. For a continuous improvement, the customer management has been implemented in accordance with business ethics while the customer's satisfaction and expectation have been regularly reviewed.

2020 Performance

- The three combine heat and power plants (CHP) in China were able to maintain their availability factor (AF) according to the needs of customers.
- No complaints related to business ethics and environmental issues as well as customer's privacy information.
- The customer satisfaction level of all three CHP plants in China was good.

Business Continuity Management

The Company has managed its business continuity system in cooperation with Banpu Group in order to make preparation for operations in any unusual conditions. The goal is to deliver quality power and energy to customers continuously, including other transactions. The key procedures analysis has been carried out to make resources and information & communication systems ready. Additionally, the annual review and simulation exercise has been run every year.

2020 Performance

- All offices and power plants were able to operate continuously during the COVID-19 epidemic, with no operational disruptions.
- Formulating preventive and countermeasures against the epidemic of COVID-19 so that all employees were not infected.
- Beijing Office was certified for the ISO 22301 Business Continuity Management System.

Sustainability Recognition

In 2020, Banpu Power has been listed on Thailand Sustainability Investment (THSI) list for three consecutive years from the Stock Exchange of Thailand. This demonstrates a commitment to the environmental, social, and corporate governance responsibility.

Greenhouse Gas (GHG) Emissions

The Company wishes to be part of solving the climate change problem by setting its climate change target through reducing the GHG emissions intensity per unit of product and increasing the power plants' efficiency as well as investing in clean energy, for example, renewable energy, so as to be a part of a low carbon society in the future.

2020 Performance

- The GHG emissions intensity per unit of product was 0.620 tonnes CO_2e/ MWh, decreasing by 11.7% compared to 2012 and 8% compared to 2019.
- Investing in renewable energy and energy technologies in Banpu NEXT. The Company has a renewable energy generation capacity of 347 MW of equity investment, accountable for 12.6% of total power generation.
- The innovation project implemented at Zouping Power Plant using waste gases from the customer's industrial factories to replace coal in order to reduce the overall GHG emissions.

Air Quality

The Company has placed great emphasis on controlling air qualities to meet the design standards and comply with the laws. This includes a selection of appropriate fuel, an improvement of the combustion system efficiency, and an employment of the efficient pollutant capture system as well as a control of the air quality emitted at stacks before releasing.

2020 Performance

- The sulfur dioxide emission intensity was 0.0254 tonnes/ GWh.
- The oxide of nitrogen intensity was 0.0420 tonnes/ GWh.
- The particular matters intensity was 0.0027 tonnes per GWh.
- All three CHP plants in China received the special financial grants from the Chinese government due to their excellent air quality control. The three plants have ultra-low emissions rate.

Water Resource Consumption and Water Discharge

The Company has realized the water consumption efficiency. In order to reduce water discharges able to reuse the released water and lessen water leakages in the system, the Company has set a target to reuse water as much as possible, reduce water leakages in the system, and control water quality to be higher. Moreover, the water treatment system has been employed while the locations of business units having high risks for water shortages are assessed in order to develop the conceptual framework for water accounting and water balance in the production process.

2020 Performance

- The discharged water quality was complied with the standards set by laws.
- The water consumption rate per unit of product was 0.901 cubic meters/ MWh.
- Assessing the locations of business units vulnerable to water shortages in order to develop a conceptual framework for water accounting and water balance in the production process.
- Improving the water treatment systems and increasing the recycled water in preparation for being the power plant with 'Zero Discharge'.

Occupational Health and Safety

The Company has aimed at creating a safety workplace culture, promoting a safely working environment and culture in all areas of our operations. This is to ensure that our employees, contractors, and those working in the areas are safe. In addition, risks related to occupational health and safety of all production activities have been assessed while control measurements have been formulated to mitigate risks into the acceptable level.

2020 Performance

- No working accidents of employees and contractors as well as others involved with the Company's operations.
- Developing applications to control the power plant's operations to be more up to date, covering safety working, for example the audit system and 'Permit to work' for works with high risks.

Community Engagement

The Company has put great emphasis on creating community engagement and hearing for the community suggestions since the beginning of the project's construction. Throughout the project life, a continuous two ways communication has been carried out while grieving channels as well as preventive and corrective measures have been implemented effectively. In addition, all information gained from the community engagement at the project's beginning stage is used for a project design, a decision making and possible impacts monitoring during the project's operation. Besides, the Company has also been looking for opportunities to work with communities to create the sustainable community development. This is significance for building acceptance and good relations with communities throughout the project's life.

2020 Performance

- No significant complaints from the community.
- Carrying out the social responsibility project to assist communities during the epidemic of COVID-19. Banpu Group and its alliances established the THB 500 million fund to aid Thailand to confront the COVID-19.

Succession Plan

The Company has established the Succession Plan Committee to develop and manage the succession plan for significant positions. The Committee is obligated to prescribe a policy and determine the key and critical positions. Additionally, the criteria for key and critical position profiles have been set up for further nomination and selection. This includes a development of the individual development program and a continuous performance assessment.

2020 Performance

- The succession plan has been developed for all of the Company's key positions.
- Developing the Individual Development Program (IDP) for successors while monitoring, and evaluating them continuously.

The Energy for 'ALL'

Affordable

To be part of driving the economy and well beings, BPP wishes to deliver power and energy with affordable prices accessible by each area appropriately. The Company has put great importance on maintaining our power plants to have the highest availability and efficiency so as to reduce energy consumptions and other losses. Additionally, employees have been encouraged to initiate creative ideas for innovation development. Meanwhile, motivations and channels for exchanging knowledge and innovations have been continuously provided for them to submit the innovations to the committee for consideration and further implementation. This has also encouraged a regular exchange of knowledge and innovation continuously. This ongoing development has resulted in the Company's ability to control costs at a minimum level, effectively use of resources, and able to deliver power and energy with affordable prices corresponding to customer needs.

Availability and Efficiency of the Power Plants

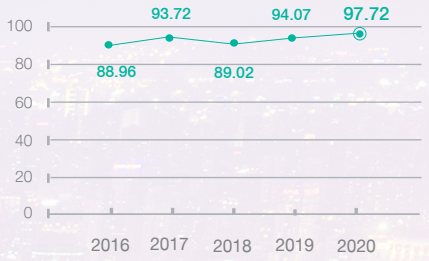
In 2020, the combined heat and power (CHP) plants in China had the availability factor, the planned outage factor, and the unplanned outage factor as targeted. The plants were able to supply electricity, steam, and hot water continuously, corresponding to customer's demand. In addition, they also received the financial grants from the government sector due to their eco- friendly manner and abilities to control air quality released at stacks with ultra-low emissions, which is above the standards required by laws.

The Company has invested in the thermal power plants in Thailand and Laos PDR, namely BLCP Power Plant and HPC Power Plant, respectively. The major customer of BLCP and HPC power plants is the Electricity Generating Authority of Thailand (EGAT) which demands high security of power generation. BLCP and HPC power plants are categorized as the power plants generating power 24 hours a day at a high-power supply rate or a so called 'base load power plant' because they have competitive costs. Therefore, the level of availability and reliability of the two thermal power plants must be under an agreement between the power plants and EGAT in order to maintain stabilities of the power transmission system and the nation's electricity cost.

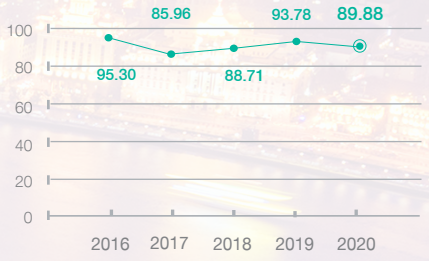
In 2020, COVID- 19 management for BLCP, HPC, 3 CHP plants & solar farm assets were affected and comprehensive adapted themselves to response such situation. Establishing of proactive health protective measures program for all employees and their subcontractor in the power plant operation & maintenance activities able to maintain all power plants able to operate continuously with no business interruption.

For our future investments, as the power generated from clean energy is highly encouraged by consumers and governmental agencies as well as stakeholders, BPP foresees the importance of continuously developing its businesses in accordance with the consumers' needs. Besides the opportunity to invest in natural gas power plants, BPP is also looking for spaces to invest in the environmentally friendly energy industry as well. The example of investments BPP expects to have a sound opportunity in the future is the hydrogen industry, which is a form of clean energy growing rapidly. By using hydrogen as a power source, the fuel can play a significant role in reducing greenhouse gas emissions, especially in the transportation, chemical, and steel industries. Consequently, BPP envisions an opportunity to invest in the hydrogen industry in the future. This will finally be able to help it grow sustainably under the concept of 'Greener Smarter' according to the targets set.

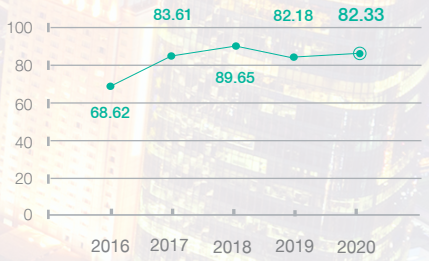
Availability Factor of 3 combined heat and power plant in China (%)



Availability Factor of BLCP Power Plant (%)



Availability Factor of HPC Power Plant (%)



Certifications of Management System Standards

BPP has adopt international management standards continually to improve operation practices and gaining trust from all stakeholders. The Company's operating units have been certified the ISO 9001 : Quality Management System, ISO 14001 : Environmental Management System and ISO 45001 : Occupational Health and Safety Management System. In addition, our Beijing office has been certified ISO 22301 : Business Continuity Management System on 18 December 2020.

Business Units	Management System Standard Certifications			
	ISO 9001 Quality	**ISO 14001** Environment	**ISO 45001** Occupational Health and Safety	**ISO 22301** Business Continuity
Zouping Power Plant	✓	✓	✓	
Zhengding Power Plant	✓	✓	✓	
Luannan Power Plant	✓	✓	✓	
Beijing Office				✓
Bangkok Office*				✓

* Bangkok Office in Thailand incorporated with Banpu Group to implement the system as a subsidiary company.

Continuing Innovating

Improving the boilers to Support the Burning of Waste Gases from the Customer's Manufacturing Process at Zouping Power Plant

In 2015, Zouping Power Plant modified its 2nd Boiler Unit in order to accommodate changes on power sources, replacing the coal-fired fuel to waste gases generated from the blast furnace gas (BFG) process of Xiwang Special Steel Company Limited in which the blast furnace gas volume of 90,000 cubic meters was released per hour. The 2nd Boiler Unit, however, was still unable to handle the total exhaust gas from the Xiwang Steel Plant. There were another 30,000 cubic meters per hour left and released into the atmosphere, directly affecting the environment.

Xiwang Group Company Limited started developing the 'Blast Furnace Gas Mix-burning Retrofit Project' to utilize waste gases from the iron smelting process and to increase the power generation capacity of Zouping Power Plant by installing more equipment at the 1st Boiler Unit of Zouping Power Plant. Through this technique, the plants were able to utilize waste gases rather than release to the environment. It also helped reduce emissions of GHG and other waste gases, increasing revenues of both Zouping Power Plant and Xiwang Group. All in all, this technology is reliable and has been used extensively in China for over 20 years.

The working group of Zouping Power Plant studied and assessed safety related risks. Moreover, the additional safety equipment has been installed while operational procedures for extra safety has been put in place, such as the gas leak detection systems in the forms of both equipment at the power plants and employee tracking systems, etc. In addition, the air quality emitted from the stacks has ultra- low emissions, meeting China's environmental standards. The project was implemented on 11 October 2020.

Investment Budget

CNY 5 million, receiving a discount on waste gas prices from Xiwang Steel Mill to compensate for Zouping Power Plant's efficiency loss.

Benefits

- Increasing a revenue of Xiwang Group by **CNY 10 million.**
- Reducing fuel costs, GHG emissions, and energy consumption volume within Zouping Power Plant totaling **CNY 1.84 million.**
- Lessening the amount of coal consumption by **31,000 tonnes.**
- **Lowering overall GHG emissions** by using waste gases released to replace coal used in the power plant.
- Zouping Power Plant can **respond to customer needs able to build good relationship with Xiwang Group.** This is helpful for the long-term collaboration.

Transformation into the Digital Era

Realizing the opportunity to drive the organization towards excellence, Banpu Group is currently proceeding for transforming itself into a true digital organization through modifying the organizational ideas and working procedures to be more flexible and adaptive to change. This will help increase the organization's competitiveness.

BPP has applied new working concepts and digital technology to manage information, current and future work procedures. Additionally, the Digital Center of Excellence (DCOE), a department specializing in digital technology, has been established so as to closely work with various departments by assisting them in preparing personnel readiness. DCOE provides supports on analyzing work processes and identifying areas for improvement through the use of technology or application development in order to quickly resolve the problems.

Over **120 employees** in Banpu Group passed digital workshop.

In 2020, the Digital Capability Centers were officially opened at Beijing Office and Luannan Power Plant by using strengths of each area for maximum benefits of the centers. The Beijing-based Center is focusing on building the startups eco- system, helping accelerate the products creation more quickly. Since Beijing is one of the places having the largest number of startups in China, it can also help other learning centers of Banpu networks. Meanwhile, the Luannan Power Plant Digital Capability Center will be an area open for the power plant's employees and visitors from external parties such as the government agencies, the educational institutions, etc. The center also organizes various activities such as conducting the design thinking workshop, experimenting the work pieces taken place at the power plant, and etc.

Additionally, Banpu Group has developed its internal personnel to understand and learn about digital technology through online courses and workshops. Up to now, 32 employees already attended the online courses while over 120 staff participated in the workshops.

Digital Development at Launnan Power Plant

Luannan Power Plant has been operating for more than 20 years and expanding its production capacity continuously to meet the demand for energy in the area. Presently, the Luannan Power Plant is the Company's pilot project to achieve a target to be the power plant of the future, using digital technology to improve its operations. The year 2020 marked the beginning of the master plan of which various digital projects have been developed such as:

Smart Operation and Maintenance Applications (Smart O&M)

Traditionally, employees would inspect the power plant's on- site work daily by using vibration and temperature measuring instruments. The measurement results, however, could not be immediately reported, causing the inflexible coordination within the power plant. The Luannan Power Plant has adopted digital technology to help solve such a problem.

'Smart O&M' is an application developed by a collaboration of two departments namely, the Operation department and the Maintenance department. In the first phase, the application has been developed, consisting of two modules: the 'Operation Patrol Inspection' and the 'Digital Work Permit' for maintenance work in the area. All related work systems have been transformed into the digital system equipped with wireless measuring instruments, helping provide real-time numerical and graph indicators for immediate analysis. It can also display the results on both computers and mobile phones, making the collaboration between the production and maintenance departments more flexible and efficient.

More importantly, the 'Smart O&M' also consists of various sub-modules such as equipment patrol inspection system, equipment defect system, multi-function hand-held inspection device, voice approval, record face-to-face security disclosure, etc. These modules have significantly helped reduce various repetitions down to 10- 20%. They have also assisted in creating safety in the workplace where operating officers can examine the vulnerable areas digitally without entering such areas. Additionally, the warning system has been provided so that they will be more careful when being in the vulnerable areas.

Coal Blending Optimization System Application

Since coal is purchased from various sources, causing its quality to be varied. Therefore, mixing coal from various places for power generation is at risk for unqualified coal blending, possibly increasing the power production costs more than before. It also affects the power plant efficiency. As a result, the Luannan Power Plant's Engineering Department has developed a multi-functional application for efficient coal mixing including:

- Calculation model management module: analysis on coal consumption and steam production
- Blending scheme calculation management module: Coal blending and management
- Coal yard information system module: displaying coal stocks
- Performance tracking module: monitoring power plant's efficiency

In conclusion, the aforementioned development has been able to control the power production cost derived from coal blending to meet the required quality. Moreover, coal quantities and qualities in the stockyard can be inspected immediately, allowing for more efficient analysis and coal purchase planning in advance.

Reliable on Banpu Power

Reliable

Resilience in Challenging Time

BPP believes that ensuring operational stability and reliability as well as ability to continuously deliver power and energy, is mainly due to the Company's good operating standards recognized internationally. In addition, participations of all employees will drive the Company's operations to be stable despite external factors affecting, having comprehensive risk controls, and good corporate governance.

Business Continuity Management during the COVID- 19 Situation

During the COVID- 19 epidemic, BPP was able to operate continuously and its business units did not have either disruptions or operational stoppages. Moreover, all employees were safe from the infection because they have been preparing themselves to cope with the situation for a long time. The implementation of a business continuity management system has made it possible to flexibly respond and adapt to a pre-crisis situation. More importantly, it was able to resume operations quickly, helping reduce losses and build confidence among stakeholders. The key operational targets were:

Response

Effectively responding to incidents and preventing the spread of damages as well as communicating information to internal and external parties appropriately

Recover

Able to restore major necessary activities in order to quickly deliver products and services acceptable by stakeholders.

Restore

A fast recovery of the whole Company's activities acceptable by stakeholders.

The key success factors helping Banpu Power maintain its ability to operate business during the COVID- 19 outbreak included:

- Implementing the ISO 22301 business continuity management system (BCMS) before the crisis occurs, putting top priority on employee's safety.
- Preparedness for uploading information system on the cloud computing system to support employees to work anywhere without presenting at office, inclusion of an enhancement of abilities to restore the systems as well as necessary information more quickly.
- Determining preventive measures and mitigation plan in response to the COVID- 19 situation, allowing the working team in each country able to make decisions on any measurements quickly, taking into account the employee safety.
- Regularly organizing the annual trainings and simulation exercises.
- Defining the clear and fast communication channels.

Corporate Governance and Anti-corruption

BPP has placed great importance on good corporate governance, transparency and fairness to all stakeholders, inclusion of fighting against all forms of corruption. The clear policy and practice guidelines have been laid down so that the management, employees, and stakeholders can strictly perform in accordance with the corporate governance and anti-corruption guidelines.

BPP's performance on anti- corruption and corporate governance in the year 2020 were as follows:

- No incidents and complaints relating to the Company's involvement in corporate governance and corruption.
- Being a member of the Thai Private Sector Collective Action Against Corruption (CAC).
- Cultivating the ethical working culture by defining 'Adherence to Integrity and Ethics' as one of the corporate shared values and the performance indicators for all executives and employees. The internal survey on corporate shared values found that the value of 'Adherence to Integrity and Ethics' was one of the behavioral group employees expressing the most.
- Organizing an annual activity promoting understanding about business ethics or the 'CG Day' under the theme of 'Awake Your CG'.
- Identifying the anti- corruption measurements in all contracts to strengthen and develop the ethical business practices.
- Continuing conducting businesses in accordance with the guidelines regarding accepting and offering of gifts, hospitality, or other similar forms of rewards in accordance with the 'No Gift Policy', including communicating such guidelines to all stakeholders through the BPP's website.
- Establishing the processes and channels for receiving complaints or whistle-blowing efficiently.

CG Day

On 13 November 2020, the Company joined hands with Banpu Group to organize the 2020 CG Day called 'Awake Your CG'. At the event, various activities such as the anti-corruption related games were organized so that employees could understand and review their knowledges about anti-corruption. In addition, the management representative shared his opinions on the importance of working and conducting businesses under the good corporate governance policy, avoiding involvement in all forms of corruption. The aim was to reflect BPP's commitment to operating businesses in accordance with the good governance principles, emphasizing on anti- corruption policies and practices.

Risk Management and Legal Compliance

BPP has managed its risks by using the enterprise risk management system across the organization. Key risk indicators (KRI) have been developed while a risk appetize principle has been employed for assessing and mitigating risks, covering all risks related to business operations, including a strategic risk, a financial risk, an operational risk, a regulatory and legal compliance risk and other novel risks, namely a new technology risk, a climate change risk, and a cyber security risk, etc.

Applications Development for Risk Management and Legal Compliance

The Company has paid top priority and committed to developing various procedures and tools for managing risks associated with legal & regulatory and policy changes in all countries where the Company has invested. In preparation for effective practices, in the previous year, the Company applied technologies to mitigate the corporate risk and supervised legal and regulatory compliance. The risks management and relevant regulatory reviews applications were developed as follows:

C-RiM Application

BPP has applied the corporate risk management system to the legal operations supervision used as data sources across the organization, able to monitor the real-time risk assessment processes and present a wide variety of reports based on the needs of different users. For example, monitoring activities related to risks and natures of risks, executive summary reports, etc., so as to inform users about current risks and the state of the overall organizational legal practices.

Laws in Hand Application

Laws in Hand application was developed with an aim to facilitate management and involved employees to track laws, announcements or current information relating to business operations continuously, keeping up with current situations as well as underpinning both computers and mobile devices.

Personal Data Protection

The full implementation of information technology in the digital age has enabled operations more agile, faster and more efficient. On the other hand, an additional risk possibly arisen is a use and disclosure of personal data, which violates the privacy rights.

Banpu Group has, therefore, established the personal data protection policy and set up the personal data protection committee in order to identify criteria and supervise the collection, use and disclosure of personal data in accordance with the Personal Data Protection Act. This is to prevent the privacy rights violation of stakeholders' personal information. As a result, we have taken actions on personal data protection as follows:

1. Establishing strategies, goals/ targets and action plans related to the protection of personal information.
2. Developing the policy and/ or practice guidelines for the departments associated with personal data protection.
3. Providing measures and systems for personal information security in accordance with the international standards.
4. Preparing appropriate measurements and systems to prevent data infringements and leaks.
5. Raising awareness and / or organizing trainings for employees and involved persons.
6. Arranging a meeting to monitor progress continuously.
7. Keeping personal data known or acquired by performing duties confidentially.

Human Rights Due Diligence Assessment

BPP conducted a human rights due diligence self- assessment to determine the human rights issues possibly posing the organizational risk. The assessment covered the thermal power business in China and the solar power operation in China and Japan. Six key human rights risks relating to employment, occupational health and safety, customers and products, communities, securities, contractors and supply chains, were assessed, taking into account both internal and external stakeholders such as employees, suppliers, customers, contractors and communities, as well as vulnerable groups. The assessment found that BPP had no risks involved with the six human rights issues. This was due to the Company's prevention and avoidance of human rights violations when operating businesses, adhering to the principles of liberty and rights, equality and human dignity without discrimination on genders, races, religions or colors.

Stakeholder Satisfaction Survey

In 2020, BPP conducted a satisfaction survey of five stakeholder groups playing an important role in creating the growth of power business together with the Company, consisting of joint ventures, regulators, advisors, business partners and financial institutions. With an aim to build relationships with such stakeholders and use the assessment results to improve the Company's operating systems, the questionnaires were sent to these stakeholders via e- mails. The survey found that 95.66% of the stakeholders satisfied working with BPP, while 4.34% slightly satisfied.

Caring for Environment and Communities

Eco-friendly

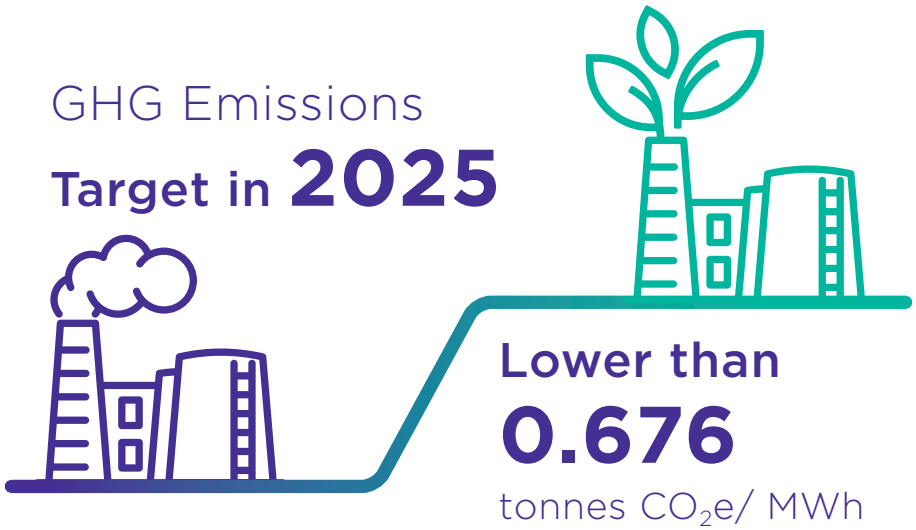
Banpu Power has adhered to its business credo: “an industry will be strong only when it is developed in tandem with social and environmental responsibility”. Undertaken all operational activities with care and responsibility for all groups of stakeholders. We has strived towards conserving the natural resources and environment by using high efficiency- low emission (HELE) technology and managed with international best practice standards. Our aim is to support energy for economic development and prosperity of the society.

Climate Change

Climate change is an issue affecting the sustainability and the human's well-being. It has become the global concern pulling collaborations across the globe to reduce greenhouse gas (GHG) emissions and alleviate its impacts. Consequently, BPP aims to increase its clean energy production capacity to 800 MW by 2025. However, the BPP's GHG emissions are mainly from thermal power plants. In responding to the industrial production and electricity supplied to domestic grid lines. BPP has an attempt to reduce the GHG emissions from such power plants as follows:

The combined heat and power (CHP) plants in China are able to consume energy efficiently, having 65- 70% production efficiency during a full production capacity of power and steam. Meanwhile, the thermal power plants solely generating electricity have a production efficiency of around 35- 40%. This has led the CHP plants to have lower energy consumption rate and GHG emissions intensity than those of the thermal power plants. Although, BPP is able to generate power supplied to the government sector at a constant rate, customer's demand for steam purchase is varied according to their needs in different times. As a result, it will directly affect the efficiency of energy consumption and GHG emissions; if the steam demand decreases, it will definitely cause the energy consumption rate and the GHG emission intensity higher. BPP, therefore, has focused on using innovations to improve the power plant's efficiency. In addition, an experimental study has been conducted to find a balance in production when demands for steam have different amounts so as to make the utmost efficient use of resources. Furthermore, the Company has also cooperated with customers to use waste gases from a steel smelting industry to replace coal, thus helping reduce the customer's GHG emissions.

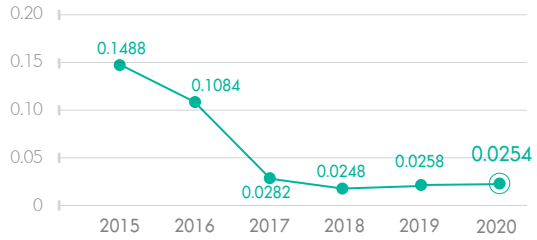
The thermal power plants which are the joint venture companies, namely BLCP Power Plant and HPC Power Plant, on the other hand, are focusing on the standardized operational management and annual maintenance so that they can operate consistently and reduce resources loss. These also include an initiative to use innovations for improvement such as, developing a predictive maintenance information system to predict a machinery maintenance before the machine is broken at HPC Power Plant, and a use of biodiesel to ignite the power plants' incinerators at BLCP Power Plant.



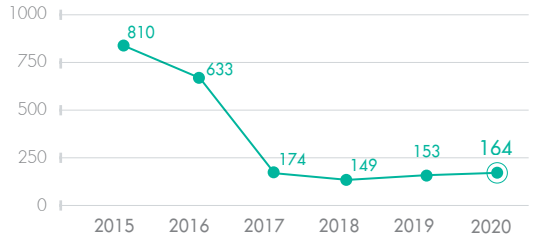
Environmental Quality

Operating business in parallel with environmental quality preservation is a preliminary operation, representing a socially responsible business operation. The three CHP plants in China have used clean technology to endlessly improve the air quality emitted from stacks. This hasn't only helped control emissions of sulfur dioxides, oxides of nitrogen, and particular matters at very low levels, but has been also recognized and received financial subsidies from the government sector in 2020. In addition, the Luannan Power Plant's water treatment system has been improved in order to reuse such a treated water. It is also a pilot project to minimize water consumption until the power plant discharges none of wastewater (zero discharge).

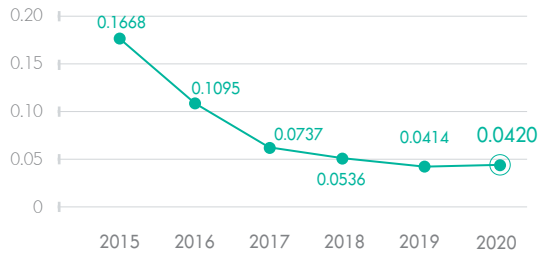
Sulfur Dioxide (SO_2) Intensity
(Tonnes/ GWh)



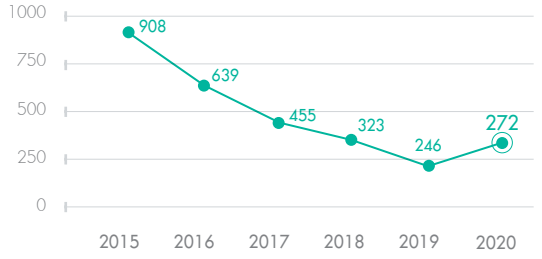
Total Sulfur Dioxide (SO_2)
(Tonnes)



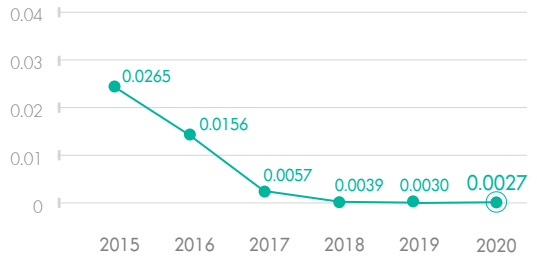
Oxide of Nitrogen (NO_x) Intensity
(Tonnes/ GWh)



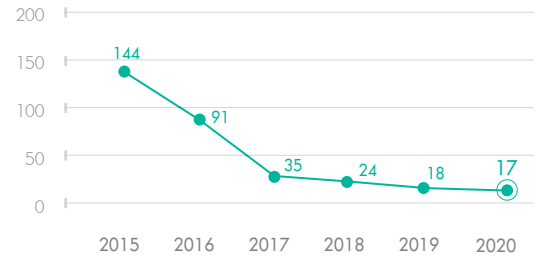
Total Oxide of Nitrogen (NO_x)
(Tonnes)



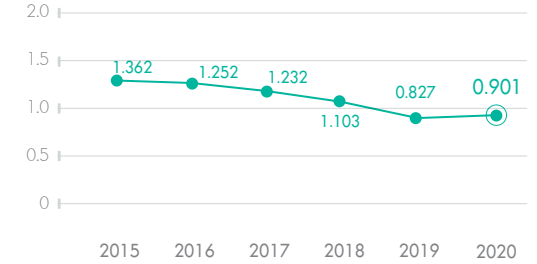
Particulate Matters Intensity
(Tonnes/ GWh)



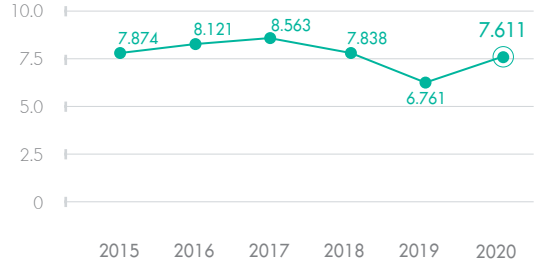
Total Particulate Matters
(Tonnes)



Water Consumption Intensity
(Cubic Meters/ MWh)



Water Withdrawal
(Million Cubic Meter)



Sustainable Development at Zhengding Power Plant

Although the winter season is considered having the coldest weather and the lowest temperature of the year, it is, on the other hand, the happiest and warmest moments for the communities. Since the special festivals with long holidays have always been organized during winter, it allows family members working in different cities to return to their hometowns where they join together to celebrate and do activities on the festive period. Therefore, it is a time of warmth and happiness for the family.

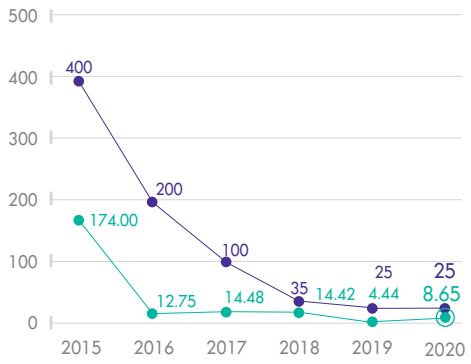
The outbreak of coronavirus 2019 (COVID- 19) in 2020, however, has inevitably affected habitants on this earth. People had to quarantine themselves by staying at homes during the cold period to protect themselves from the COVID-19 epidemic. As a result, utilities such as the city's centralized electricity and heating systems were necessary to keep indoors to cope with this difficult time.

Amid such a difficult condition, the employees of Zhengding Power Plant had tried hard running the plant together. As a result, the power plant has been able to generate power and heat supplied for the communities stably throughout the year. It is, therefore, the pride of Zhengding Power Plant's employees for their dedications and hard works that can help the community members get through this difficult period.

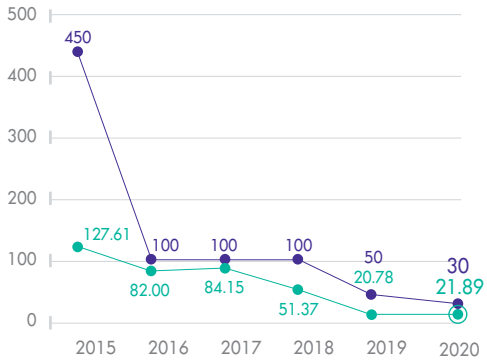
Shijiazhuang City is located in Zhengding County, Hebei Province in northern China, where the weather is cold and dry during winter with an average outdoor temperature of 0.3 degrees Celsius. Prior to the operational commencement of Shijiazhuang Chengfeng Cogen Co., Ltd. (Zhengding Power Plant), bulk coal fired boilers had been widely used by industrial enterprises and residents for winter heating. This had caused the severe air pollution. When Zhengding Power Plant started its operation in 2000, however, the centralized heat supply was implemented in Zhengding County. At present, the Power Plant, with a total installed capacity of 73 MW and annual heating capacity of 10 million GJ, undertakes the task of supplying heats to 58,000 residential users and over 180 industrial and institutional utilizers in Zhengding County.

In recent years, China has been facing increasingly the serious environmental problems. To cope with this situation, Zhengding Plant has been committing to exploring a sustainable development way of clean heating supply and creating a **'green and warm winter'** for the people. Not only does the plant meet the requirements of environmental protection, low costs, and low subsidies, but it is also well received by users for its stable supply, reliable quality and perfect services.

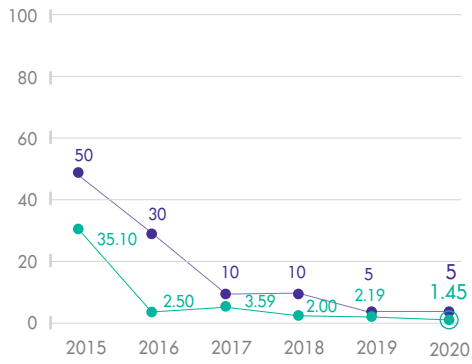
Sulfur Dioxide (SO_2) Concentration
(mg/ m^3)



Oxide of Nitrogen (NO_x) Concentration
(mg/ m^3)



Particulate Matters Concentration
(mg/ m^3)



Standard Zhengding Power Plant

RELIABLE

Promoting a project development via innovations and improvement of heating capacity:

Through a series of technical innovations such as recycled water heating and wasted heat recovery, Zhengding Power Plant has continuously improved its heating capacity and expanded the heating supply area. **At present, 96% of urban residents in Zhengding County are supplied by the centralized heating system of Zhengding Power Plant.**

ECO-FRIENDLY

Achieving clean and efficient heating production:

To achieve ultra-low emissions, Zhengding Power Plant has invested nearly CNY 200 million in recent years for the construction and upgrade of environmental protection facilities such as desulfurization and denitrification.

AFFORDABLE

Affordable heat supply for the benefit of the public:

Technological innovations have brought down heating costs and prices as well as benefited residential users. The power plant has also extended its heating period for five consecutive years and taken the initiative to bear part of the increased costs, in an amount of as much as CNY 17 million during the heating period of 2019- 2020.

In addition, the power plant has been keeping good maintenance and upgrading its heating facilities, strengthening a dynamic monitoring of heating operations, as well as improving the emergency plans to ensure a stable operation of heating supply. Furthermore, the plant has also taken various measures to improve its heating services, such as implementing the grid management and clearly identifying responsibilities of involved parties; providing a 24- hours service to solve unexpected problems in heat supply; focusing on the stable heat supply for key user groups, namely nursing homes, hospitals and schools; launching the new payment system by scanning the QR Code so as for user's conveniences, especially during the COVID-19 outbreak at the beginning of 2020 when the whole populations were quarantined at home.

The Zhengding Power Plant's employees, however, were able to overcome numerous difficulties by providing stable heating and extending the heating period. This is to ensure the normal life of people during the quarantine period and stabilize the community members.

The heating model of Zhengding Plant does not only meet the demands for environmental protection, but also utilize coal resources in an efficient way. The plant is able to provide high- quality heating services with affordable prices for residents. It is also acceptable by the government. In addition to ensure that the project will be developed in a sustainable way in the long- term, the Zhengding's heating model has helped improving the quality of life and sense of well- being of local people. As a result, Zhengding Power Plant has won praise from the local government and communities, creating significant social benefits mainly in:

In 2020, Zhengding Power Plant's 'Smoke Plume Control and Heat Recovery' project was recognized as **Top 100 Eco- environmental Innovation Project in China**

Customers' satisfaction: With the high- quality heating with affordable price and good services, the centralized heating of Zhengding Power Plant has become the first choice of the users. Many residents who used other heating methods have switched to the plant's centralized heating system. This has raised customer satisfaction continuously, enabling the plant to achieve the 'zero complaints' from users.

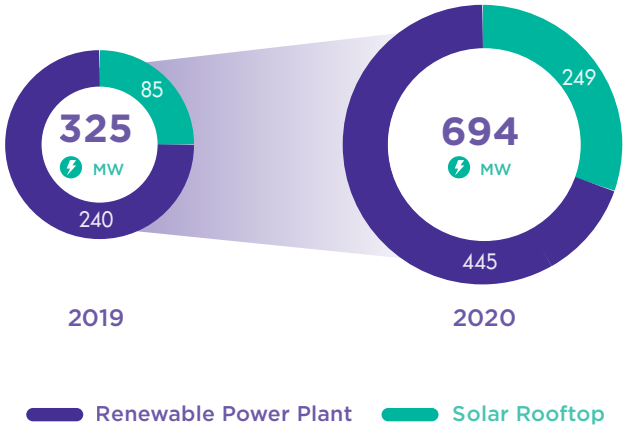
Government's satisfaction: The heating model of Zhengding Power Plant is highly recognized by the Chinese government at all levels. The leader of the inspection team from Ministry of Environmental Protection said that ***"Zhengding Plant is the most eco-friendly power plant of its size I have ever seen in China. The power plant's experience in environmental protection and management is worth spreading."*** After researching, the Shijiazhuang municipal government organized several heating companies to visit the power plant and recommended the heating model of Zhengding Power Plant to the National Energy Administration as a typical example of clean heating.

At the same time, Zhengding Power Plant is achieving its own sustainable development. Over the years, the power plant has been maintaining the largest centralized heating area, the fewest heating issues, the lowest heating subsidy, and the best heating quality in the surrounding counties of Shijiazhuang City with affordable cost and environmental friendly. This has greatly enhanced the reputation of Zhengding Power Plant and BPP as the sustainable energy provider in the area.

Expansion of Production Capacity to Renewable Energy and Power Technology at Banpu NEXT

In response to adaptations to climate change, BPP has continuously invested and developed the renewable energy business and expanded its scope to develop energy technology and integrated energy related business through the investment of Banpu NEXT in which the Company holds 50% of stakes. Aside from creating a strong position in the renewable energy sector, Banpu NEXT will also help increase a diverse of our related businesses. In line with the Company's growth, the power generation capacity target has been adjusted to 5,300 MW, consisting of 4,500 MWe from the thermal power and 800 MW from the renewable energy by the year 2025.

Banpu NEXT Power Generation Capacity
(MW)



Banpu NEXT has operated the renewable power and integrated energy technology businesses including:

Renewable Power Plant

Banpu NEXT is operating the energy generation and distribution business from renewable power generation. It has grown and expanded its portfolio to the strategic markets for energy industries in the Asia-Pacific region, namely China, Japan and Vietnam. Currently, the company has a total power generation capacity of 445 MW from the investments in solar power plants in China, Japan, Taiwan, Vietnam and other countries in the Asia Pacific region with a total capacity of 407 MW, and the investments in the wind power plants in Vietnam with a power generation capacity of 38 MW (as of 31 December 2020).

Solar Rooftop

Banpu NEXT provides one- stop solar rooftop solutions and installation, with services ranging from site survey and system design and installation of solar system. All the services are provided with cutting- edge technologies by the specialized teams of engineers. To maximize customer service efficiency, advanced technologies are also introduced to the 24/7 after-sales service for industries and large businesses looking for reducing their electricity costs.

Energy Storage System

Banpu NEXT is exploring development of solar power storage systems for numerous applications, such as uninterruptible power supply (UPS) and integration to smart grid and microgrid so as to help customers minimize their energy cost with efficient electricity management during on-peak times.

The company has acquired 47.68% stake in Durapower Holdings Pte Ltd, an energy storage system provider based in Singapore, to operate a lithium-ion battery factory in Suzhou, China, with annual output planned at 1 Gigawatt-hour. Meanwhile, the company is also studying development of solar power storage systems both for industrial and household applications.

Electric Vehicle

Banpu NEXT is the first in Thailand to provide integrated electric vehicle fleet management with the concept of 'Mobility as a Service', offering one-stop service solutions including consultancy, evaluation of mobility needs, provision of the right vehicles to meet specific needs of each company, and after-sales support combining advanced hardware and digital technologies for greater efficiency of its after-sales service to meet the accurate needs of customers.

Smart Community

Banpu NEXT offers state-of-the-art energy technology solutions for a well-developed ecosystem of clean energy and optimum energy efficiency based on individual needs of each customer organization. These accessories include Smart Pole, Solar Kiosk and EV Charging Stations.

Energy Management System

Banpu NEXT offers consulting service in energy management to provide energy solutions that will optimize energy management system of each customer company. These include evaluation and analysis to provide guidelines for lower energy cost and better energy management system contributing to sustainable growth of customers businesses. Every step of the service is provided by a team of experts in energy technology.

‘Do by Heart’ – Luannan Banpu Special Education School

Luannan Power Plant is located in Tangshan City, Luannan County, Hebei Province. As the only combined heat and power (CHP) plant in Luannan County, the plant takes care of the heat and power supplied for the residential and industrial users in the county. Since its operations, the plant has been running well and providing stable heat and power to the local market, strongly supporting the urban constructions and economic development of the Luannan County.

Since being acquired by BPP in 2006, the Banpu Group’s corporate social responsibility (CSR) philosophy has been fully recognized by the power plant’s management and integrated into its operations and management through carrying out the appropriate CSR programs. The aim is to improve the living standards and welfares of local people in the Luannan communities.

With a commitment to develop an industry in tandem with social and environmental development following the Banpu Group’s business philosophy, the Luannan Power Plant did not hesitate to investigate the educational resources and social demands of the Luannan County. The plant learnt that the Luannan Special Education School was in urgent need of help for its shabby buildings and poor teaching facilities. As a full-time boarding school in special education, the school took care of 65 students with hearing impairments, speech deteriorations, intellectual challenges, and other physically challenged.

Rocky Zhang, who was the general manager of Luannan Power Plant, therefore proposed to sponsor the school as a long- term CSR project, hoping to assist the local government and communities to improve educational conditions for the physically challenged children and to achieve a common development of the plant and the communities.

In August 2008, Luannan Power Plant reached an agreement with Luannan Special Education School to provide CNY 50,000 per year to improve the school's facilities. In appreciation of BPP's support, the school later renamed itself as the **‘Luannan- Banpu Special Education School’**. For 13 consecutive years (2008 to 2020), Luannan Power Plant has provided financial supports and educational materials including computers, school uniforms and beddings etc., amounting to around CNY 850,000 in values. As a result, **the school has been equipped with advanced teaching and training facilities while its dormitories are convenient to accommodate the students. Since 2012, the school has become the only one special education school in Hebei Province to provide free-of-charge education services,** offering educational opportunities for many more children.

In addition to the infrastructure improvement, the school has kept innovating teaching and learning models to meet the needs of each student and achieved satisfactory results. At present, there are 110 students studying in the school.

Throughout 13 years of the Luannan Power Plant's supports (since 2008), a total of 128 students graduated from the school, 5 of whom were admitted to universities for further studies while another 25 students have been successfully employed and can support themselves. Furthermore, most of the graduates can take care of themselves after years' training in the school. This has greatly help relieve any burdens/ dependencies on their families. The power plant's contributions have created the social stability and harmony.

Throughout **13 years**
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Luannan Power Plant has committed to instilling and promoting the sense of social responsibility and caring for the unfortunate people among its employees by having more staff involve in this CSR project. Over the past years, the teachers and students of Luannan Banpu Special Education School were regularly invited to the power plant to join its activities such as the new year parties, the power plant visits and outings, etc. Through the CSR project participation, **over 80 employees are able to get close to and interact with the physically challenged children, delivering warmth and caring for children. Additionally, they have also had a better understanding of the corporate commitments in social responsibility and voluntary involvements.**

Luannan Power Plant is highly recognized by the local government as a model enterprise, providing consistent social contributions to local communities and a corporate supporter for special education for over a decade. **In recent years, this special education school has been gradually transforming itself from the educational and skills training center for physically challenged children to the rehabilitation training school for the growing group of autistic children, inclusion of providing psychological supports to their families.**

In 2020, Luannan Banpu Special Education School launched the home delivery education service, enabling autism children to be rehabilitated at home, while providing psychological guidance to their families. Under the new circumstance, the Luannan Power Plant will continue supporting the school to meet the communities' new needs. The plant will be also an active supporter for special education and a good corporate citizen in the Luannan County.

Board Game Design Competition Titled 'Energy Sustainability'

BANPU B-Sports Thailand is a project supporting board games as a tool for the development of emotional, social and intelligence skills, or soft skills essential to our daily lives in the 21st century. The project's activities were introduced in 2018 by Banpu Group with an aim to encourage and expand the playing of board games to a wider group of the new generation and to underline the benefits of this tool for soft skills development that not only enhances **'cognitive and intellectual skills'** and **'emotional and social skills'** but is also fun. Playing board games has been shown to improve critical thinking, planning and handling immediate problems while simultaneously strengthening human relationships. Furthermore, it helps players apply the skills gained for learning and working in a real-life.

In 2020, Banpu Group joined force with Board Game Night or BGN, a cast board game program attracting the biggest audience in Thailand, to organize the Board Game Design Competition under the topic of 'Energy Sustainability'. **10 teams consisting of more than 30 students from universities nationwide joined this competition. The competition allowed participants to learnt about energy sustainability and participated in a board game development and design workshop** as well as visited a smart campus at Rugby School Thailand in Chonburi Province where they had an opportunity to learn more about clean and sustainable energy and technology management, experiencing how solar rooftop and electric vehicles were used in the school. The visit to a smart campus also helped them to use knowledge on energy sustainability for a design of board games, allowing players to gain knowledges with funs when playing the game.

The wining team will have opportunities to showcase their winning board game at a world- class board game fair in Taiwan in order to have these young board game designers experience the international board game events, fueling and inspiring them to develop their own board game to be better.

FOLLOW US

To find out more and stay tuned on activities and news about the project, please visit:

https://www.facebook.com/BanpuBSportsThailand/

#EnergyOnBoard

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Live@Banpu Power

BanpuHeart

Banpu Power employees combine their differences into strengths, uniting into solidarity through a strong corporate culture, the 'Banpu Heart', as well as working together with **'Passionate, Innovative, and Committed'**.

Learning is a Lifelong Journey

BPP has attached great importance to human resources development because we believe that human resources development is the starting point for a sustainable development. Nowadays, in particular, business operations are changing and expanding rapidly. The organization, therefore, will need leaders who can build the next generation leaders.

As modern times has changed dramatically, developing employee's capabilities must respond and keep up with the rapid changes. As a result, the Company has analyzed the future skills needed for each position, assessed the staff's capabilities, and formulated the individual development plan. The key success factor for developing employees' competencies is not only providing them the knowledge supporting the organizational strategies, but also enhancing their expertise skills, allowing them to gain direct experiences, and creating a positive attitude at work. In addition, sharing knowledges and experiences from employees and executives are also the inspiration for them to work together.

BPP's people are given opportunities to develop their capabilities, learn and grow equally without discriminations. The Company has prepared its personnel to have skills and experiences to support the operations in accordance with the corporate strategic plan. As such, the individual development plans and the leadership programs have been provided for our employees in preparation for moving up to key positions in the organization as stated in the succession plan.

Examples of Competency Development Course

- 7 Habits of Highly Effective People
- Managing Business Performance
- Taking the Risk and Moving Forward
- Project Management
- Hands- on Financial Model
- Strategic Foundation Workshop
- Power Apps
- Design Thinking
- Sustainable Development
- Global Leadership Programs
- Engaging Leader
- Great Coach
- Building Organization Talent
- Building Global Mindset for Success
- Understanding Global Perspective
- Future Leader

The Leadership Program, a Uniqueness of Banpu Group

Consolidation of Leadership Development and Organization Engagement

HI COACH

Learning advanced coaching skills in order to create a coaching culture within the organization, emphasizing the open communication and collaboration between departments, and heightening skills and experiences through cross-functional coaching, as well as continuously strengthening leadership development skills.

GREAT COACH

Learning coaching skills and creating inspiration by asking questions to encourage subordinates to find answers for self- development.

ENGAGING LEADER

Learning the good qualities of leaders including being trustworthy and creating engagement with the organization.

FUTURE LEADER

A beginner leadership program for developing emotional intelligence and creating cooperation networks and teamwork to create innovations.

Banpu Group's Employees Attending Leadership Development Trainings

Levels	Total Number	Attendees Number (%)	Attending Hours (Hours)	Training Hours per Person (Hours)
Vice President Up	30	80	458	15.3
Manager Up	46	75	1,272	27.6
Section Manager Up	78	55	1,985	25.4

All in all, continuously developing employee's leaderships has yielded higher employee engagement results in all three dimensions including the work-life balance, the career opportunity, and the communication effectiveness.

Future Leader

Future Leader is Banpu Group's leadership development program provided for the new generation leaders. It gives opportunities for employees to learn and practice solving problems in the form of a hands-on learning application or the "Learning Application Project (LAP). Participating employees will group together to work across the line of work and come up with a project for organizational improvement. Meanwhile, senior management are assigned to coach and give advices closely when participating employees are working on their initiated projects.

In the previous year, 7 projects initiated by 29 participating employees were presented at the **'Future Leader Project Showcase'**. The benefits gained from this program can be used for creating true values for the organization.

Energy Titan

To make employees understand the Banpu Group's energy business and to develop business skills or commercial mindset for employees, the Company has designed a workshop with a specific content and a learning model through a two-day simulated business game. Throughout this program, employees will have opportunities to practice various skills on managing energy business through the roles of investors, power plant executives, business developers or strategic planners, etc. Three business models provided in the course are:

- Coal War Game: coal mine business simulation
- Powervana Game: thermal power plant business simulation
- Cleanergy Game: renewable energy business simulation

Benefits

1. Thoroughly understanding how to manage the energy business in a broader picture, from the beginning through the end.
2. Being able to analyze the market and understand the energy business supply chain.
3. Understanding the linkages between on-site working and the overall company's performance.
4. Analyzing financial statements, asset management, and investment plan for the maximum profit.
5. Knowing the principles of efficient production and maintenance management.
6. Realizing energy business related risks and risks mitigation.

Bound of Hearts, Growing Together

The Company believes that if employees work happily in the sound working environment and have a healthy balance between work and personal life, they will be able to fully unleash their potentials and grow together with the Company. In order to create a true employee engagement, the Company has implemented various activities as following:

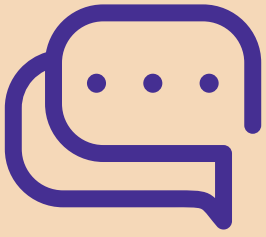
- **Developing the engagement action plan** based on the organization engagement survey results and employee comments as well as formulating a quarterly progress reporting system for executives so as to continuously strengthen the organization engagement.
- **Promoting the 'Work Life Balance' among employees,** for example at Bangkok Office employees are able to manage and plan their working hours efficiently by enabling flexible hours in attendance; employees are provided the 'Work Anywhere' program, allowing them to work anywhere through communication devices two days a week, etc.
- **Aiding employees during the COVID-19 epidemic,** such as supporting expenses on medical examinations, self-quarantine, building facilities to accommodate employees to work from home daily without presenting at the office, as well as doing the COVID-19 insurance for all employees.
- **Encouraging employees to have strong physical and mental health** through several activities, including organizing various sports clubs so that they can exercise and relieve working stress, providing a counseling program with psychologists - the 'RelationFlip' project, and an online doctor consultation, etc.
- **Establishing policies and practice guidelines on labors and human rights** in accordance with international laws and practices, as well as conducting risk assessments to create preventive measurements.
- **Conducting a survey on organization engagement and 'Banpu Heart' corporate culture annually** by external agencies in order to reflect the employee engagement and the success of corporate culture instillation activities, including hearing all employee's comments for improvement.

Social Equality and Women's Empowerment

BPP people are equally without discrimination of races, religions, creeds, genders, ages, etc. They are also provided equal opportunities to develop and grow in their career paths based on their performance assessments, characteristics and positive attitudes.

Although there are few female workforces in the power generation industry, the ratio of female employees working at the managerial level is balanced with the proportion of a total female workforce.

Talk to Us



Banpu Power welcomes your suggestions and additional information provided for our sustainability policies and operations. Please contact:

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