国家能源集团

龙源电力

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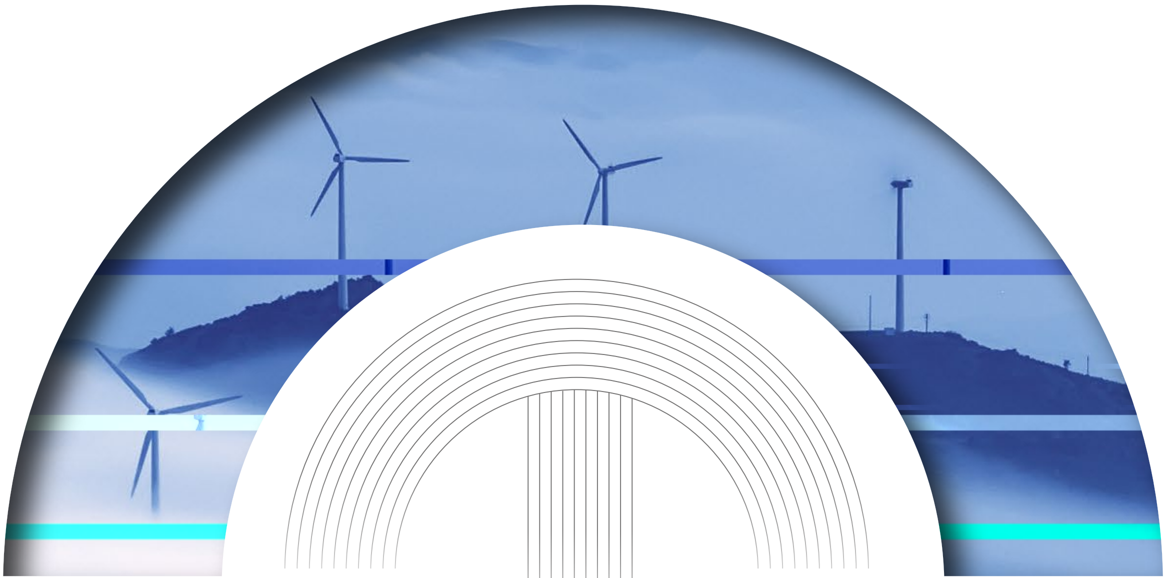


2022
ENVIRONMENTAL, SOCIAL AND GOVERNANCE (ESG) REPORT

LONGYUAN POWER

Contents

YOUR CONCERN BEACONS

OUR ACTIONS

YOUR CONCERN BEACONS

OUR COMMITMENTS

Chairman's Statement

In 2022, the international situation was severe, with many countries experiencing energy crises, and the new energy industry was faced with both opportunities and challenges. The listing of Longyuan Power on the A-share market in this year was a landmark year for the Company's development and an important milestone for us to draw up a blueprint for high-quality development and create a world-class new energy company with global competitiveness.

Time flies while we ring in the new year. In this year, in the face of the complex and severe external environment and multiple challenges, all Longyuan employees continuously cleared obstacles on the way forward, overcame numerous difficulties, strived to promote high-quality development, actively served the goals of green development and national "dual carbon", and completed various objectives and tasks in a high-quality manner, demonstrating Longyuan's responsibilities and achievements in the new journey of the new era.

Ramping up e f orts for digital safety inspection to create digital new energy. In the era of digitalisation, digital technology has become a new driving force for the transformation and reinvention of various industries. To solve the common problems in the management of the new energy industry, we have built a digital platform for new energy production with a problem-oriented approach and with the guideline of enhancing standardisation with digitisation and promoting leanness with standardisation. After three years of continuous efforts, we have built the largest digital platform for new energy production in the industry. The "Digital Safety Inspection" project has begun to bear fruit, equipment reliability and power generation performance have continued to improve, and the reform of the production management model has continued to advance.

Riding the wind to set sail to a clean and bright future. The green and low-carbon transformation of energy is one of the top ten actions to achieve carbon peak in China. As the world's largest wind power operator, we are obliged to undertake a mission and responsibility of revolutionary significance. During the year, we were at the forefront of the green and low-carbon transformation, with a stronger foundation and better conditions for quality development. By adhering to our "Troikas, Dual-core Development, Four Growth Engines" development model, we have opened up a new situation in which onshore, offshore and large-base wind power and photovoltaic power are advancing side by side.

Prioritizing ecology protection for a green and low carbon future. In the development and construction of wind power, photovoltaic and other high-quality new energy, we took ecological environment protection as a prerequisite, and environmental protection measures were interlocked; we actively demonstrated a new

Chairman

Longyuan Power

About Longyuan Power

Founded in 1993, China Longyuan Power Group Corporation Limited ("Longyuan Power") is affiliated with CHN Energy. In 2009, it was successfully listed on the Main Board of the Hong Kong Stock Exchange. In January 2022, it was officially listed on the A-share market, becoming a company listed in both Shenzhen and Hongkong stock markets.

Longyuan Power is the earliest specialized company to develop wind power in China, and the leader in exploring wind power fields such as offshore, low wind speed and high altitude in China, firstly realizing "going global" of the whole industry chain of wind power in China. The Company established ten industry-leading technical service systems, including new energy project consulting and design, carbon asset development and management and vocational training, constantly leading the development of the industry and technological progress.

The Company possesses wind power, photovoltaic, tidal, geothermal and other power generation projects. Its business in 32 provinces (municipalities or autonomous regions) of the PRC, with oversea projects distributed in Canada, South Africa and Ukraine, making positive contributions to the utilization of renewable energy and the realization of sustainable development goals.

As of the end of December 2022, the Company's consolidated installed capacity had reached 31,107.84 MW, including 26,191.84 MW of wind power, 1,875 MW of coal power, and 3,041 MW of photovoltaic and other renewable energy. The Company has been granted honors such as the Best Investment Value in Listed Company and Best Listed Company of the Golden Bauhinia Award of China Securities, Global Top 500 New Energy Enterprises for ten consecutive years and ranked 335th in the Fortune China 500 list in 2022, up 23 places from the previous year.

Mission

Developing clean energy and building a Beautiful China

Vision

Building a world-class new energy company with global competitiveness

Core Values

Endeavour, E f ciency, Innovation, Harmony

RMB billion*
Total assets

RMB billion
Total market value

MW
Total consolidated installed capacity

RMB billion
Total revenue

MW
Wind power installed capacity

%
Proportion of renewable energy vs. consolidated installed capacity

* The financial data in this report prepared in accordance with IFRSs *(International Financial Reporting Standards)* issued by IASB (International Accounting Standards Board).

Data of 2022

Environment

million tons

Carbon dioxide emissions reduced by renewable energy

%

Proportion of power generated from renewable energy

RMB million

Investment in environmental management and protection

Social

person-time

Employee training participants

Honors of 2022

Ranked 2nd in the "Central Enterprise ESG • Social Value Pioneer 50 Index"

Ranked 14th in the "Central Enterprise ESG • Pioneer 50 Index"

"2022 Golden Bull Award for Responsibility - Overseas CSR Practice Award"

The "Best Listed Company" of the China Securities Golden Bauhinia Awards

The 300 MW Wind Power Project in Chensuoliang, Shangyi, Hebei Province and the 400 MW Wind Power Project in southern offshore area of Sheyang, Jiangsu Province won the **"2022 China Quality Power Project Award"**

Longyuan Carbon Asset Company was awarded the **"Double Carbon Practice Award"** by Shanghai Environment and Energy Exchange for 2021

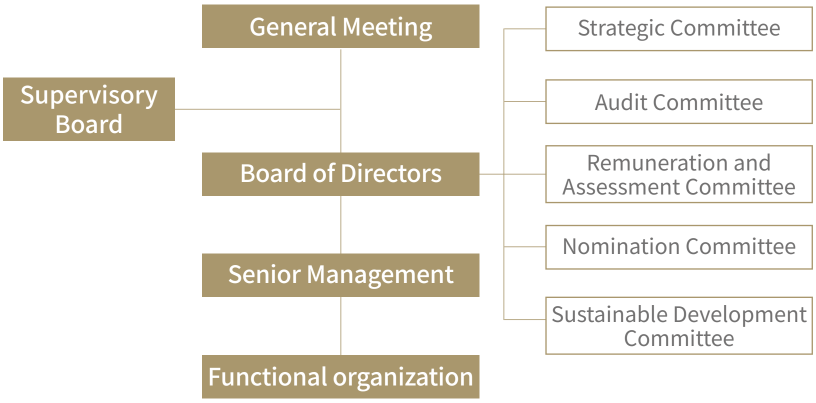
"Research and Promotion of Reliability Prediction Maintenance and Quality Improvement Technology of New Energy Equipment" project of Longyuan Power Engineering Technology Co., Ltd. won the **Gold Award of "Revitalization Cup" National Youth Professional Competition**

Won the **"Contribution Award for Supporting Youyu's High-quality Development"** for five years in a row

Your Concern Beacons **Our Care**

Corporate Governance

We pursue a high-quality modern corporate governance structure with mandatory and transparent responsibilities and a governance mechanism with coordinated operations and effective checks and balances, enhancing the value of the company and protecting the rights and interests of shareholders. We are convinced that board independence and diversity are essential for better corporate governance and decision-making and sustainable value creation.



Protection for shareholders' rights and interests

The Company attaches great importance to the protection of shareholders' rights and interests. On the basis of strengthening our main business and constantly creating shareholder value, we improve the mechanism for protecting shareholders' rights and interests, proactively communicate and interact with shareholders, listen to their opinion, deliver corporate value, and disclose to shareholders the corporate information about operation results, financial performance, environment, society and governance in timely and accurate manner, which gain their long-term trust and support.

In 2022, we firstly adopted "video conference and telephone conference" to convene the Briefing on the Interim Results, which established a "warm" interactive mode for investors and took the initiative to deliver corporate value.

Board independence

We continue to improve the system of specialized committees and enhance the independence and professionalism of board of directors, who used to handle the Company's business and financial matters.

Specialized committees of the board of directors provided professional advice before the board made any decision. The establishment of a Sustainable Development Committee has incorporated ESG and sustainable development into the agenda of the board. Independent directors harness their independent roles by expressing their views on related party transactions and other matters of the Company. Directors of the board fulfill their duties diligently with 11 research projects throughout the year 2022 and put forward their opinions and suggestions on the Company's operation and development.

To give full play to the directors' professional skills, further strengthen their abilities, and continue to improve their scientific decision-making, the directors participated in the professional development training including corporate governance, risk assessment, laws and regulations and strategic investment in 2022.

Specialized committee meetings

Proposals reviewed by specialized committees

person-time

Professional training opportunities for directors

Board diversity

In accordance with the *Board Diversity Policy*, we diversify the Board with directors of different genders, ages, cultural and educational backgrounds, professional experience, knowledge and length of service, including senior energy experts, economists, auditors and entrepreneurs. Currently, the Company has three independent directors with financial economy or financial accounting background and four non-executive directors with the background of the same energy power industry. Among the eight current board members, one is female.

Read more For more details on corporate governance, please refer to sections of the board work report and corporate governance report in the 2022 *Annual Report of China Longyuan Power Group Corporation Limited.*

Business Ethics

The Company strictly abides by the laws and regulations, regulatory provisions, industry standards, articles of association, and rules of China and countries (regions) in which its business operated, follow international treaties, international practices, and business ethics, and engage in law-based market competition to establish sound business partnerships featuring mutual respect and win-win results. We prohibit bribery, corruption, money laundering, monopoly, unfair competition, and illegal procurement, and fully respect the trade regulations and requirements of countries (regions) in which our business operated.

Enhancing compliance

The implementation plan for building a law-based enterprise has been submitted to the board of directors for deliberation, constantly deepening the construction of the compliance system. Compliance management responsibilities are shared among the business department, the compliance management department, and the discipline inspection and audit department. We have compiled the *New Energy Sector Compliance Risk Preemptive Control Guide* to walk employees through compliance procedures. We conduct a comprehensive investigation on contract compliance risk, specifically sort out projects compliance and rectify them on a case-by-case basis. We explore the digitization of contract management and formulate a systematic construction plan.

Promoting anti-corruption campaigns

We establish an integrity culture system featuring Longyuan Power and make sustained efforts to build the "Honest Longyuan with Transparent Environment". We continuously establish and improve the management mechanism for petition-letter whistleblowing, and make investigation and verification in strict accordance with the relevant laws and regulations of the state as well as *the Measures for Management and Handling of Petition and Whistle-blowing Matters and Clues of Longyuan Power* for petition and whistle-blowing matters and clues, to ensure that matters and clues can be handled timely and effectively. We carry out the construction of "clean projects", formulate the Clean Practice Guide, and ensure supervision and inspection of the Company's projects under construction.

Reinforcing risk control

We continue to optimize the internal control system, build information technology platforms, and conducond t ☒on
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The Party Building

The Company adheres to the guidance of Xi Jinping Thought on Socialism with Chinese Characteristics for the New Era, conscientiously studies and publicizes the gist of the 20th National Congress of the CPC (NCCPC), resolutely implements the decisions and arrangements of the CPC Central Committee, thoroughly acts upon the great call of "socialism is achieved by earnest work", puts the brand strategy of "leading in the party building, making progress with empowerment" in place, continuously promotes the "four enhancements and six promotions" measures, gives full play to the leadership of Party committee, the combat effectiveness of the branches and the executive ability of cadres, and plays a leading role in high-quality development of enterprises with quality party building.

Teach Party History Lesson "Drawing Spiritual Strength from Party History Stories"

Visit Memorial Square for Unsung Heroes in Xishan

Study and publicize the gist of the 20th NCCPC

- Launch theme activities of "New Age for Making Contribution, Celebrating the 20th NCCPC" and "Dedicating to the Great Nation"
- Introduce 18 articles and 21 new media videos in respect of learning the gist of the 20th NCCPC, carry out 79 lectures, and conduct 62 lectures to youth league members and people outside the Party
- Party committees at all levels hold more than 40 seminars with cumulative duration of more than 65 days

Strengthen political construction

- Rigorously put the "first issue" system into effect, and establish and perfect the long-term mechanism as well as supervision and inspection mechanism
- Implement 6 aspects, 59 key works and 187 specific measures based on checklist; promote learning, implementation and deepening of the gist of the important speech of General Secretary Xi Jinping visiting a chemical company during his inspection in Yulin

Consolidate ideological construction

- Organize and implement 24 key contents; coordinate and promote the normalization and sustainability of Party history learning and education
- Conduct 13 theoretical central group studies, five seminars and two linkages of the Company's party committee
- Creatively carry out the "Strong Foundation" party lessons for mutual learning and communication, and complete 38 research projects on party building and political research

ESG Governance

Longyuan Power integrates ESG into the Company's development strategy, continues to improve the ESG governance structure and operation mechanism, and supports the Board's role in supervising and promoting the Company's ESG matters to improve company value.

ESG governance structure

The Board established the Sustainable Development Committee, to study and make recommendations on the Company's sustainable development policies and measures, evaluate ESG governance goals and plans, propose coping strategies for the Company's performance and risks in the ESG area, and assist the Board in exercising supervisory responsibilities over the Company's sustainable development policies and measures. The Company set up the ESG working office, aiming to coordinate all departments and subsidiaries to promote ESG-related works under the guidance of the management.

ESG strategic planning

Guided by advance planning and goals, we take effective measures and formulate the *Three-Year Plan for ESG Development*. We also set overall goals, priorities, and schedules and take systematic approaches in ESG implementation to enhance the Company's sustainability, brand influence, and social contribution for high-quality development.

Objective	Under the guidance of ESG development, we strive for a leader of high-quality low-carbon development of the whole wind power industry chain			
Principles	Adhere to strategic guidance	comprehensive integration	coordinated promotion	
Tasks	Management optimize the organizational structure, build an ESG system, and promote the full integration of ESG into operation and management	Practice keep abreast of the latest trends, take actions of Longyuan characteristics, and explore a new nature-positive economic model of the new energy industry	Communication explore multi-dimensional, multi-level, and diversified information disclosure manners, build new sustainable partnerships, and improve our influence	
Guarantee	Improve the governance mechanism	Improve the management system	Build an indicator system	Strengthen capacity-building

ESG system development

A solid foundation: Measuring up to rating standards at home and abroad and based on the latest ESG trends and expectations of stakeholders, we screen out key material topics, refine the ESG indicator system, and build an information management system. We also establish management methods, conduct special training, and consolidate the foundation of ESG management.

Extensive exchanges: We have held four external expert seminars to discuss ESG planning, indicators of material topics, and responsible supply chains and listen to what they offered. We also share our ESG practice at the Global Official Website of World Economic Forum, China Enterprise Forum, and the International CSR Forum.

Research: We are engaged in the formulation of the *Corporate ESG Evaluation Guide* and *Corporate ESG Management System Requirements by China Association for Quality.*

Identi f cation of material topics

The Company invites ESG experts from World Economic Forum, Tsinghua University and other institutions at home and abroad to identify, evaluate, and screen out 16 topics in line with the ESG disclosure requirements of regulatory authorities and the Company's strategic planning, form an ESG indicator system, and highlight these topics in our disclosure.

Identify

The external professional consultants assisted in the research of the topics to form a list of topics through the analysis of national macro policies and industry trends, reference to domestic and international sustainability-related standards and guidelines, and benchmarking with ESG mainstream rating requirements.

Evaluate

The importance of the topics was screened out and evaluated by means of expert seminars and research interviews with relevant departments.

Review

Based on the results of the survey and evaluation, and with reference to the opinion of experts, 16 core topics were finalized in two dimensions: "importance to stakeholders" and "importance to Longyuan's business".

Environment

01 Renewable energy opportunities
02 Clean technology opportunities
03 Addressing climate change
04 Environmental control
05 Pollutant emission
06 Waste disposal
07 Resource use
08 Biodiversity protection

Social

09 Supply chain management
10 Product liability
11 Equal employment
12 Health and safety
13 Employee development
14 Community feedback

Governance

15 Business ethics
16 ESG governance

Stakeholder communication

Through various communication channels such as general meetings about business performance, road shows, expert workshops, and social media platforms, we understand the expectations and demands of stakeholders on Longyuan Power's ESG performance, respond in a timely manner, and take targeted improvement approaches.

Stakeholders	Communication and Exchange		
Government and regulators	◆ Special meetings and reports	◆ Dialogue with the government	◆ Work reports
Investors	◆ General meetings ◆ Road shows	◆ Annual reports and ESG reports ◆ Result announcements	◆ Results release conference
Employees	◆ Employee Representative Conference	◆ Openness of factory affairs	◆ Feedback and consultation
Customers	◆ Customer visits	◆ Service activities	◆ Feedback and consultation
Industry and Partners	◆ Strategic cooperation ◆ Standard preparation	◆ Experience sharing	◆ Industry communication
Communi	◆ Community visits ◆ Social media platforms	◆ Voluntary activities	◆ Open day

Contributions to UN Sustainable Development Goals

The Company proactively complies with the UN Sustainable Development Goals, and cooperates with governments at all levels to take a series of actions in rural revitalization, employee health and safety, education and training, response to climate change, resource and environmental improvement, etc.

UN Sustainable Development Goals (SDGs)	Achievements in 2022
1 NO POVERTY	Longyuan Power responded actively to rural revitalization through paired assistance in Youyu County, Shanxi Province. ◆ Invested RMB18 million of assistance funds and achieved over RMB50 million of consumption assistance ◆ Recruited 191 people out of poverty in Youyu County for employment transfer ◆ Won the "Contribution Award for Supporting Youyu's High-quality Development" for five years in a row
2 ZERO HUNGER	Longyuan Power facilitated self-motivated development through industrial assistance to drive up the income of farmers. ◆ Customized "Solar Greenhouse" and "TCM Processing Poverty Alleviation Workshop" to build Youyu County into a demonstration zone of modern agriculture ◆ Worked out a development plan for industries with local features and advantages, and drove the sales of produce exceeding RMB50 million in Youyu ◆ Organized over 3,000 people to attend live streaming e-commerce training to promote the sales of produce with local features
3 GOOD HEALTH AND WELL-BEING	Longyuan Power protected the health and safety of employees by organizing medical assistance. ◆ Invested RMB299 million of health and safety funds ◆ Built "Health Huts" in areas where conditions are harsh such as Tibet, Heilongjiang, and Yunnan ◆ Held "Care for the Health of Female Employees" and "Health Longyuan: Physical and Mental Health Management and Stress Relief", with zero staff suffering occupational diseases ◆ Donated RMB16.27 million to Youyu County for purchasing medical equipment and organized rural doctors to receive trainings on diagnosis and treatment of cardiac and cerebral diseases ◆ Provided free health care services to 9,000 community residents in South Africa every year
4 QUALITY EDUCATION	Longyuan Power tailored high-quality training projects for employees and supported education programs at home and abroad. ◆ Carried out 89 training projects such as "Craftsmanship Training Camp", "Grassroots Comprehensive Management Ability Promotion Class", "Employees with Certificates", "Lead Instructor Training", and "Famous Teachers' Lecture", with an investment of RMB42.92 million ◆ Provided educational assistance to Youyu County in Shanxi by paving plastic athletic tracks, building indoor gyms, donating over 340,000 books, and setting up 41 love bookstores ◆ Launched the "Aid, Dreams, People" Education Action Campaign in South Africa to help poor students complete formal education and offer over 469 children educational services
5 GENDER EQUALITY	Longyuan Power pursued equal employment, ensured equal pay for men and women, and respected and protected the legitimate rights and interests of employees. ◆ Supported the development of female talent, with female managers representing 25% of the total ◆ Strictly implemented the leave regulations for female employees during pregnancy and childbirth, and carried out activities themed on care for them
6 CLEAN WATER AND SANITATION	Longyuan Power enhanced water usage efficiency, including campaigns on comprehensive utilization and pollution prevention and control of water resources, as well as improving the local water use infrastructure. ◆ Took measures such as improving the utilization rate of industrial cooling water, recollection and renovation of the first-class reverse osmosis concentrated water, closed circulation of slag water, and renovation of industrial water system ◆ Implemented the rural domestic water renovation project in Gaojiabao Township, Youyu County, Shanxi to ensure safe drinking water for villagers
7 AFFORDABLE AND CLEAN ENE	Longyuan Power fully tapped the potential of new energy development and kept exploring new models for comprehensive utilization of clean energy. ◆ Generated 600.60 TWh of power with renewable energy, and newly added self-built project with consolidated installed capacity of 2,409.6 MW ◆ Created multi-mode, multi-scenario new energy projects such as "photovoltaic sand governance", "fishery and photovoltaic complementarity", and "agriculture and photovoltaic complementarity", "integration of wind, solar, storage and hydrogen", and "integrated project of deep-sea cage aquaculture and floating offshore wind turbines"

Longyuan Power actively created diverse employment opportunities and organized skills trainings to promote talent development.

- Shortened employees' fieldwork time in remote and hardship areas through a digital platform for new energy production
- Adopted the open, fair and just employment policy to provide equal access to work for all employees
- Provided high-quality training projects such as "Craftsmanship Training Camp", "Grassroots Comprehensive Management Ability Promotion Class", "Employees with Certificates", "Lead Instructor Training", and "Famous Teachers' Lecture" tailored for employees

Longyuan Power innovated clean energy technology, strived to be the source of original technologies, and led digital transformation.

- Invested RMB111 million for renewable energy R&D
- Finished constructing the only national R&D center in the field of wind power operation
- Initially built the world's largest digital management platform for wind power production

Longyuan Power prohibited forced labor, child labor, and discrimination because of ethnicity, gender, nationality, religious belief, and cultural background.

- Had a total of 8,842 employees, of which 14.87% were female
- Hired 653 minority employees

Longyuan Power initiated ecological governance based on its new energy advantage to improve the living environment of communities.

- Built cattle and sheep sheds in Yangqianhe Township, Youyu County, Shanxi, to improve the lives of villagers
- On-grid power generation of the solar-tidal complementary intelligent photovoltaic power plant in Wenling, Zhejiang is expected to provide stable green power for 30,000 households

Longyuan Power improved the reliability and power generation performance of equipment via its digital platform, and strictly regulated waste disposal to escalate disposal efficiency.

- Pioneered the construction of "no-fault demonstration wind farm", reducing the frequency of downtime per unit by 46% YoY
- Carried out research on the harmless recovery and resource utilization of new energy solid waste, and independently developed the blade mixing formula at the leading level in China

Longyuan Power intensified climate control and improved climate adaptability to resist the impact of climate change.

- Analyzed meteorological data on its digital platform for new energy production to increase the certainty of new energy power generation
- Completed the industry's first fuel carbon emission data acquisition system and built a digital management and control system for carbon inventory

Longyuan Power studied and monitored the influence of wind turbine noise on marine animals, affirming great importance attracted to the protection of marine and fishery resources.

- Designed wind turbine installations away from communities and monitored the influence of wind turbine noise on marine animals for a long time
- Released 475 million fish fry of various types in Sheyang County, Jiangsu

Longyuan Power monitored birds and installed guards to minimize the impact of wind farm on biodiversity.

- Set up a wild bird observatory and carried out research on the influence of offshore wind farm on birds
- Used warning colors to minimize the probability of hit of birds by blades
- Built artificial bird nests on power grid lines in wind power projects to provide good habitats for birds

Longyuan Power improved corporate governance, put greater efforts into the compliance system, and abided by business ethics to ensure fairness and justice.

- Conducted integrity warning education with 99.06% integrity training coverage for middle and senior managers
- Required all suppliers to sign an *Integrity Commitment Agreement*, and provided the reporting hotline

Longyuan Power enhanced cooperation with a diverse range of stakeholders and built a new type of sustainable development partnership.

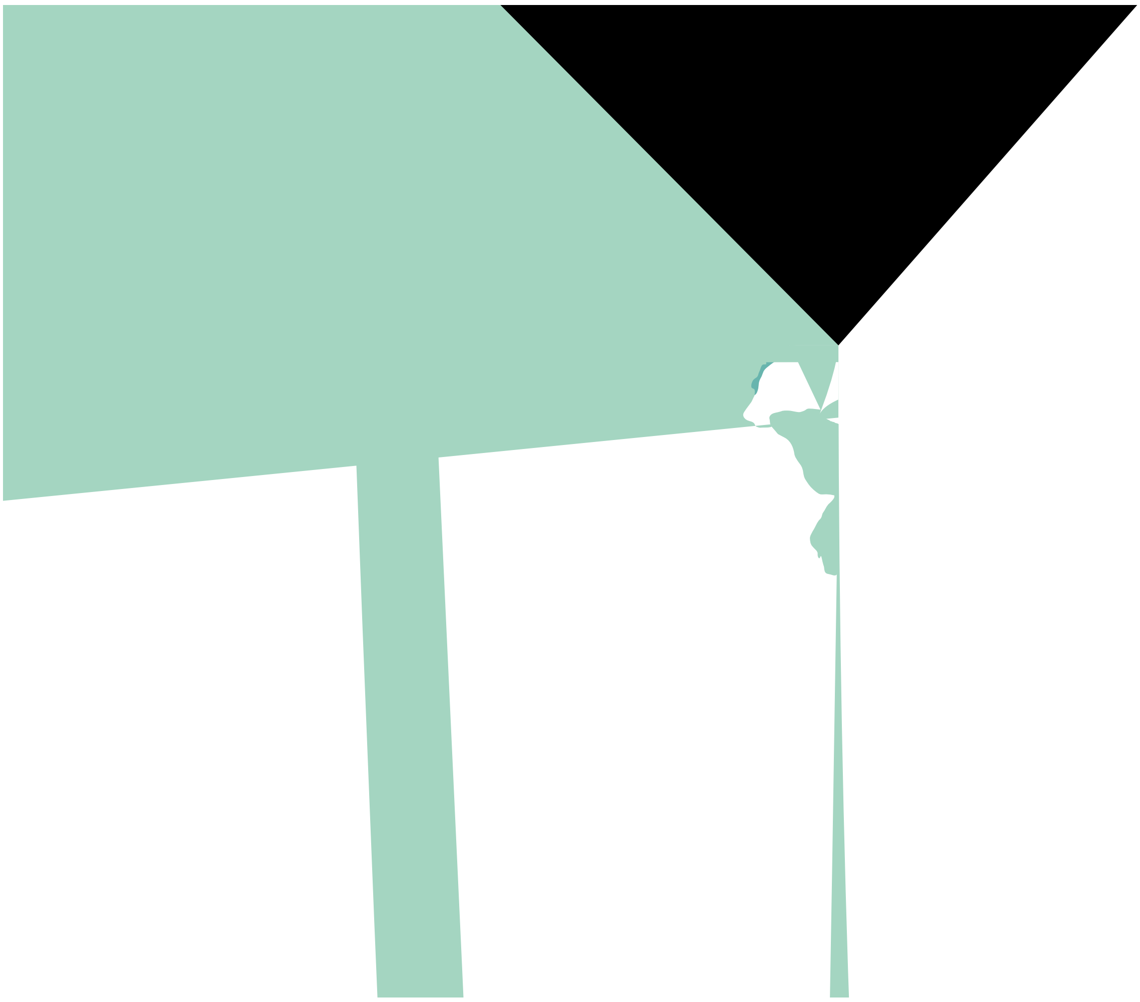
- Strengthened cooperation with institutions specialized in sustainable development, and participated in ESG exchange and sharing
- Enhanced exchanges and cooperation with international organizations, universities and colleges, and well-known enterprises to build harmonious partnerships

YOUR CONCERN BEACONS **OUR ACTIONS**

Act for Carbon Reduction:
Developing of High-Quality Clean Energy

Leading development of new energy

The development of clean energy has become the main force of the global energy transition. Adhering to one policy for one province, by advancing agglomeration within the industry, collaboration across industries, and integration of industries, Longyuan Power fully taps the potential of new energy to develop and construct wind power and photovoltaic on land, at sea and in large bases simultaneously.



Distribution of renewable energy business

Scale up renewable energy

Longyuan Power pursues onshore and offshore, domestic and overseas, and self-built and acquired parallel development. With a forward-looking vision, the Company always improves its layout of wind power development to secure synchronous growth in scale, quality and efficiency, constantly consolidating its global presence as the largest wind power operator. Longyuan Power focuses on planning and promoting the development of large-scale bases for integration of wind, solar and storage in sands, Gobi and desert areas, and offshore integration of wind, solar and fishery to consolidate and expand its leading position in the wind power sector. Additionally, the Company accelerates the development of photovoltaic generation, and actively explores hydrogen energy, ammonia energy, and energy storage projects. The consolidated installed capacity of the new self-built project is 2,409.6 MW.

MW

Developed capacity with permission

MW

Consolidated installed capacity of wind power

- Longyuan Power won the bid for Jiangsu Sheyang 1 GW Offshore Wind Power Project, among the national first batch of offshore wind power projects for grid parity.
- Tianjin Nangang 300 MW Offshore Floating Photovoltaic Project, its first offshore photovoltaic project.
- Hainan Dongfang 500 MW Offshore Wind Power Project, the province's only one of its kind during the "14th Five-Year Plan" period was approved.
- The 200MW Capacity Increase and Technical Reform Project through replacing smaller units with larger ones in Ningxia Helanshan No. 4 Wind Power Farm was also approved.

Case: Replacing smaller units with larger ones explores to tackle the pain point of old wind turbines

In China, as wind power accelerates development, we will see explosive growth in the capacity of old wind turbines reaching the end of their service life. Old wind farm units pose various safety hazards and exhibit an evident decrease in both reliability and power generation efficiency. They are challenging and costly to operate and maintain while producing low yields. As a result, replacing smaller units with larger ones has become a mainstream solution to upgrade old and small wind turbines. As the first of its kind filed on record in China, the equal capacity and technical reform project through replacing smaller units with larger ones in Helanshan, Ningxia has replaced 80 old and small units with 16 units capable of generating 5 MW power. When put into production, the project is anticipated to produce approximately 193 GWh of on-grid power and reduce carbon dioxide emissions by around 0.16 million tons. The project will play an exemplary and leading role in the wind power industry by effectively reducing safety hazards and operation and maintenance costs of wind farms, while also increasing the utilization rate of wind power to yield significant economic and environmental benefits.

Innovate new model for renewable energy development

Longyuan Power develops wind power, photovoltaic, biomass, geothermal, tidal, and other renewable energy adapted to local conditions. Through expanding the innovative natural economy model of "new energy + ", the Company aims to increase the unit utilization efficiency of resources by several times, positioning renewable energy as a protector of ecology and environment.

Fishery and photovoltaic complementarity: Power generation over photovoltaic panels and breeding in the water

The "fishery and photovoltaic complementarity" model was innovated adopted by Longyuan Power Anhui Company's 100 MW photovoltaic project in Liu'an to develop on the water of fish ponds, realizing three-dimensional spatial utilization of power generation over photovoltaic panels and breeding in the water. While saving land without impact on water aquaculture, the project can increase the power supply of clear energy. The project is estimated to generate about 150 GWh of power on average annually, reducing 0.15 million tons of carbon dioxide emissions per year.

100 MW photovoltaic project in Liu'an, Anhui Province

Wenling tidal and photovoltaic complementarity intelligent photovoltaic power station in Zhejiang

Tidal and photovoltaic complementarity: Coordinated photovoltaic and tidal power generation

Tidal and photovoltaic complementarity involves installing photovoltaic panels on the water surface of a tidal power station reservoir to generate power to complement tidal power generation. By controlling the timing and power of tidal power generation, this model can effectively stabilize the fluctuations in photovoltaic power generation to improve both the quality and volume of power generation. In 2022, the Wenling tidal and photovoltaic complementarity intelligent photovoltaic power station in Zhejiang, China's first of its kind, began on-grid power generation, creating a new model for coordinated photovoltaic and tidal power generation. Once put into operation, the project is expected to generate more than 100 GWh of power each year, providing stable power for 30,000 households and reducing carbon dioxide emissions by 0.08 million tons.

Photovoltaic sand governance: Power generation over photovoltaic panels and sand governance under them

The active promotion of photovoltaic sand governance projects in sandy, Gobi, and desert regions contributes to the comprehensive utilization of land, solar energy, and other resources, which can yield significant ecological, economic,

Innovating technology of clean energy

Committed to serving the country, leading the industry, and supporting enterprises. To achieve the goal, the Company accelerates digital transformation, improves its capabilities to tackle key technologies, and advances the transformation and application of scientific and technological outcomes, leading the innovative development of clean energy science and technology.

Optimize scienti f c and technological innovation system

Longyuan Power has set up the Science and Technology Committee responsible for determining the strategic direction, key project, and evaluation and transformation of scientific and technological R&D. In 2022, the only national R&D center in the field of wind power operation was completed.

The Company developed special demand plans for key and core scientific and technological talents through the dual system of "management + technology", and launched the mechanism of "selecting the best candidates" for major scientific and technological projects, with the purpose of training a group of high-level scientific and technological talents capable of tackling key and core technologies, leading industrial transformation, and driving the development of clean energy.

Longyuan Power constantly improves the management of intellectual property creation and application by strictly adhering to laws and regulations on intellectual property protection, and regularly revising and improving the management measures for intellectual property. The Company also conducts training on intellectual property to increase the awareness of its employees in this regard. In 2022, no dispute or legal proceeding related to intellectual property occurred.

Technical staff test and verify the core module of contactless laser slip ring under research

Invention patent applications

Utility model patent applications

Lead digital transformation

Following the principle of "promoting standardization by digitalization and promoting lean management by standardization", Longyuan Power accelerates the deep integration of clean energy industry technology and information technology, initially building the world's largest digital management platform for wind power production.

Change the production and management model. Longyuan Power deeply solidifies the "provincial centralized control and regional operation and maintenance", and distinguishes way of doing business by operation and inspection separation. The Company also set up the safety production and operation monitoring center, 29 provincial centralized monitoring centers and 74 regional maintenance centers. 30 provincial units have achieved full coverage of regional maintenance, and the work efficiency has increased by 35%.

Improve the reliability and power generation performance of equipment. Leveraging the digital platform for new energy production, Longyuan Power implemented predictive maintenance, and became the first in the national wind power industry to propose and build a "trouble-free wind farm" in 2021. In 2022, the Company launched the "100-day long-cycle competition", in an effort to achieve "zero accident, more power generation and less downtime". In 2022, single-unit downtime of wind turbines decreased by 46% year-on-year, and the proportion of trouble-free operating units for 100, 200 and 300 consecutive days increased by 10, 19 and 20 percentage points year-on-year.

Ramp up efforts for digital safety inspection. Longyuan Power utilizes nearly 50,000 CCTV monitors for remote safety inspections of high, medium, and low-risk operations on site. This allows monitoring personnel to see and control operators, and to check and correct any issues at any time, thereby avoiding safety risks. In 2022, the Company achieved full coverage of remote safety inspections for high-risk operations across all 14,000 units to ensure personnel safety.

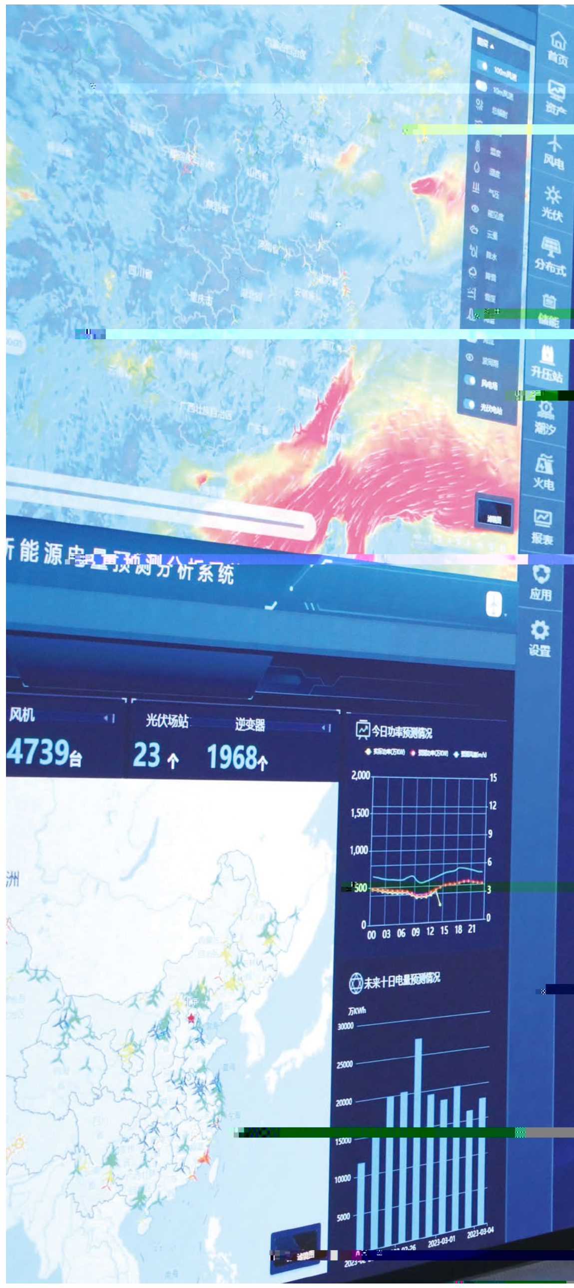
%

Wind power utilization rate

hours

Number of hours wind power utilized are above the industry average *

** Statistic data from China Electricity Council*



Digital platform for new energy production

Enhance scientific and technological innovation capability

Won the second prize of the China Electricity Council's 2022 Power Innovation Award for the project "Research on Residual Life, Health Status Assessment and Sustainable Economic Operation of Wind Turbines"

Won the third prize of 2022 China Renewable Energy Society Scientific and Technical Award for the technological topic "Research on Lightning Stroke Observation and Lightning Risk Assessment in Wind Farms".

Pioneer the new nature economy integrating wind power and fishery. The Company created a new natural economy model that integrates floating wind power development and deep-sea fishery culture in China, completed the structural design of the world's first floating wind power-fishery integrated platform. Its development model of "structure sharing, wind power-fishery interaction" has doubled the income per unit of sea use and improved the efficiency of resource utilization.

Apply the composite ice-covering-proof technology for the first time in the industry. The technology is the first of its kind with independent intellectual property rights in the industry, which can effectively lower safety hazards of ice covering and improve the power generation efficiency and service life of the unit.

Self-designed new energy supporting energy storage and power generation. The self-designed Xuyi 10 MW/20 MWh Energy Storage Power Station commenced on-grid operation, becoming the first new energy supporting energy storage and power generation project in Jiangsu Province.

Participate actively in the formulation of clean energy industry standards. China's first industry standard *Smart Wind Farm Technical Guidelines* (NB/T 10918-2022) in the field of smart wind power farms complied by Longyuan Power was approved of publication, which is of important guiding significance to promoting the digital and intelligent transformation and upgrading of wind power industry.

RMB million

R&D investment for renewable energy

%

Took the lead in compiling 86 national and industry standards, accounting for 52% in the field of wind power O&M

Actively responding to climate change

As a renewable energy power generation company, we develop renewable energy, innovate wind power and photovoltaic design as well as management technologies, and analyze meteorological data to increase the certainty of power generation, reinforce carbon assets management and advance green and low-carbon development.

Response to climate change

Longyuan Power addresses the challenges posed by climate change by integrating climate risks into its risk management process, enhancing climate risk identification, and refining measures for preventing and controlling climate risks. The Sustainable Development Committee investigates and oversees climate change-related risks, evaluates the Company's climate change-related performance and risks, and proposes corrective actions.

Climate risk management

Longyuan Power acknowledges that climate change poses physical risks, transformation risks, and business opportunities. Physical risks primarily involve acute and chronic hazards caused by extreme weather in the new energy sector. Transformation risks stem from market and policy shifts prompted by the transformation towards low-carbon economy. In addition to coping with risks, the Company also secured opportunities for new energy development.

Category	Description	Response
Policy and legal risks	◆ As carbon peak and carbon neutrality goals progress and carbon emission reduction policies emerge, Longyuan Power's two coal-fired power plants face rising operating costs. In the meantime, the increasingly stringent requirements of national ecological protection policies pose new challenges to the development of new energy projects, and impose higher compliance costs.	◆ To ensure compliance with laws and regulations, Longyuan Power encouraged energy conservation and emission reduction in its two coal-fired power plants, expedited low-carbon transformation, kept abreast of relevant policies, and rigorously implemented environmental and ecological protection throughout project life cycles.
Market and technical risks	◆ The launch of the *14th Five-Year Plan for Renewable Energy Development* has attracted major energy firms to vie for high-quality wind and solar resources, making it harder to acquire projects. ◆ All regions encourage a corresponding energy storage proportion for new energy projects and demand greater R&D and application of energy storage technologies. ◆ All regions promote the comprehensive development and utilization of new energy and require innovative methods and advanced technology technologies to secure market opportunities.	◆ Longyuan Power innovated new energy supporting energy storage and power generation technology, and explored a new natural economic model of "new energy +".
Extreme weather risk	◆ Extreme weather mainly impacts the year-on-year variability of high-quality wind and solar resources, which can result in unstable annual power generation.	◆ Longyuan Power scientifically optimized the project layout nationwide and balanced the distribution of project development across different climate-affected regions. ◆ The Company also analyzed meteorological data on its digital platform for new energy production to increase the certainty of new energy power generation.
Product and service opportunities	◆ Against the backdrop of carbon peak and carbon neutrality goals, the renewable energy market presents vast opportunities for growth.	◆ Through wind and photovoltaic power simultaneously, multi-energy complementarity, and diversified development, Longyuan Power secured the large-scale development of clean energy, and promoted the new natural economic model that benefits nature.

Measures for climate change

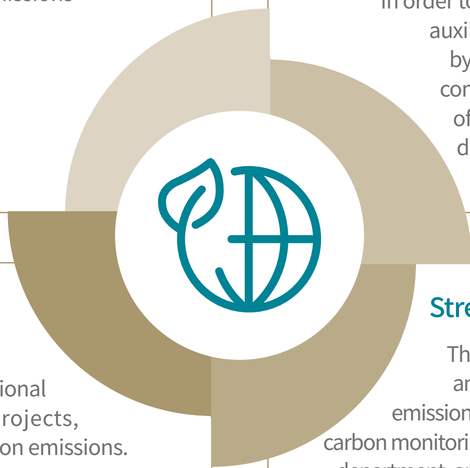
Contribute clean power

The Company put great efforts into renewable energy to improve the stability, reliability and efficiency of power generation. In 2022, power generated from renewable energy reached 600.60 TWh, equivalent to a reduction in standard coal consumption by 17.60 million tons and carbon dioxide emissions by 50.17 million tons.

Practice low-carbon production

By promoting the efficiency improvement of coal-fired power business and increasing the distributed photovoltaic construction, the Company's coal-fired power business reduced carbon dioxide emissions by 0.12 million tons compared to 2021.

In order to achieve the goal of "comprehensive auxiliary electricity rates at least decrease by 0.05 percentage points", in 2022, the comprehensive auxiliary electricity rates of wind power and photovoltaic power decreased by 0.06 and 0.59 percentage points YoY, respectively.



Facilitate low-carbon development

The Company rolled out 35 international verified carbon standard (VCS) projects, reducing over 15 million tons of carbon emissions.

The Company assisted Youyu County, Shanxi Province in developing forestry carbon sinks, concluded a development agreement on the grassland carbon sink project with Gangca County, Qinghai Province, and won the bid for Qinghai Qumalai Grassland Carbon Sink Project, contributing to the realization of ecological value.

Strengthen technical innovation

The Company carried out the research on and realized online monitoring of carbon emissions data, participated in pilot research on carbon monitoring of the ecological and environmental department, and provided reference and basis for it to formulate online monitoring standards.

The Company perfected and upgraded the carbon asset trading operation platform system, and built the first fuel carbon emission data acquisition system in the industry, and a digital management and control system for carbon inventory.

TWh

Generating capacity of renewable energy

million tons

% i

million tons

f Equivalent to a reduction of carbon dioxide emissions

Establishing low-carbon partnership

Upholding honest and efficient performance, Longyuan Power strives for standardized, transparent, clean, and efficient procurement. By building a low-carbon partnership to encourage its upstream and downstream partners for low-carbon practices, the Company has created a low-carbon ecosystem within the wind power industry that covers equipment supply, construction and operation, and the sale of green electricity.

Act for Sustainable Nature:
Protecting Ecosystem with the Green Philosophy

Environmental management

Longyuan Power constantly improves its environmental management system in strict accordance with the *Environmental Protection Law of the People's Republic of China*, and related laws and regulations on water, atmosphere, soil, solid waste and ecological and environmental protection. By making clear the main persons in charge of its affiliates as the primary persons in charge of its ecological protection, the Company requires them to sign a target responsibility document that specifies their objectives and tasks for ecological protection. By preparing the *Measures for the Management of Ecological and Environmental Protection*, the *Rules for Ecological and Environmental Protection*, and the environmental protection inspection list for production enterprises, the Company has built a routine mechanism of performing duties and pursuing responsibilities according to the list.

RMB million

Investment in environmental management and protection

Violation or penalty for incompliance

Emergency management. The Company formulated an emergency plan, identified environmental risks, prepared emergency rescue materials, and strengthened environmental monitoring and early warning. The Company also initiated emergency drills regularly for typical events, to improve the ability of dealing with ecological and environmental emergencies.

Special inspections. The Company strengthened the management of projects under construction that environmental protection facilitates must be designed, constructed and put to use simultaneously with the main part. It also carried out special inspections on ecological and environmental protection, focused on optimizing the plans for constructing roads, slopes, slag yards and restoring vegetation, and created three demonstration projects of ecological and environmental protection works. The Outline for Inspections of Ecological and Environmental Protection was released to regulate the inspection standards at various stages.

Training and promotion. The Company organized regular trainings on water and soil conservation and environmental protection to enhance employees' awareness of environmental protection, and encouraged the experience summary and sharing of excellent practices in projects.

Construction site of offshore wind power project in Dafeng, Jiangsu

Pollution prevention and control

In accordance with national and local laws and regulations such as the *Environmental Protection Law of the People's Republic of China*, Longyuan Power strictly controls pollutant emissions, and strengthens monitoring and supervision to constantly improve its level of pollution prevention and control.

In order to minimize pollution in the production and operation of coal-fired power business, all coal-fired units in two coal-fired power plants have been equipped with environmental protection facilities for desulfurization, denitrification and dust removal, and completed the ultra-low emission transformation of sulfur dioxide, nitrogen oxides and soot. Both coal-fired power plants produce ultra-low emissions.

The primary sources of pollution for Longyuan Power's new energy business are dust and waste slag produced during the construction process. The Company reused the waste slag generated during construction for backfilling and site leveling, and covered with greening after construction. Tarpaulin was used to cover earthwork, building materials and construction waste, and mud-bound gravel was adopted for construction pavement to reduce dust pollution.

Water resources management

Longyuan Power's impact on water resources primarily results from the cooling process in the production of coal-fired power and the generation of steam to drive turbines for power generation. The Company implemented several effective measures to enhance water resource utilization efficiency, including projects for comprehensive utilization and pollution prevention and control, improving the utilization rate of industrial cooling water, recollecting and renovating first-class reverse osmosis concentrated water, adopting a closed circulation system for slag water, and renovating the industrial water system% /f r wCuat e☒ys oal%ffpowis n

Waste disposal

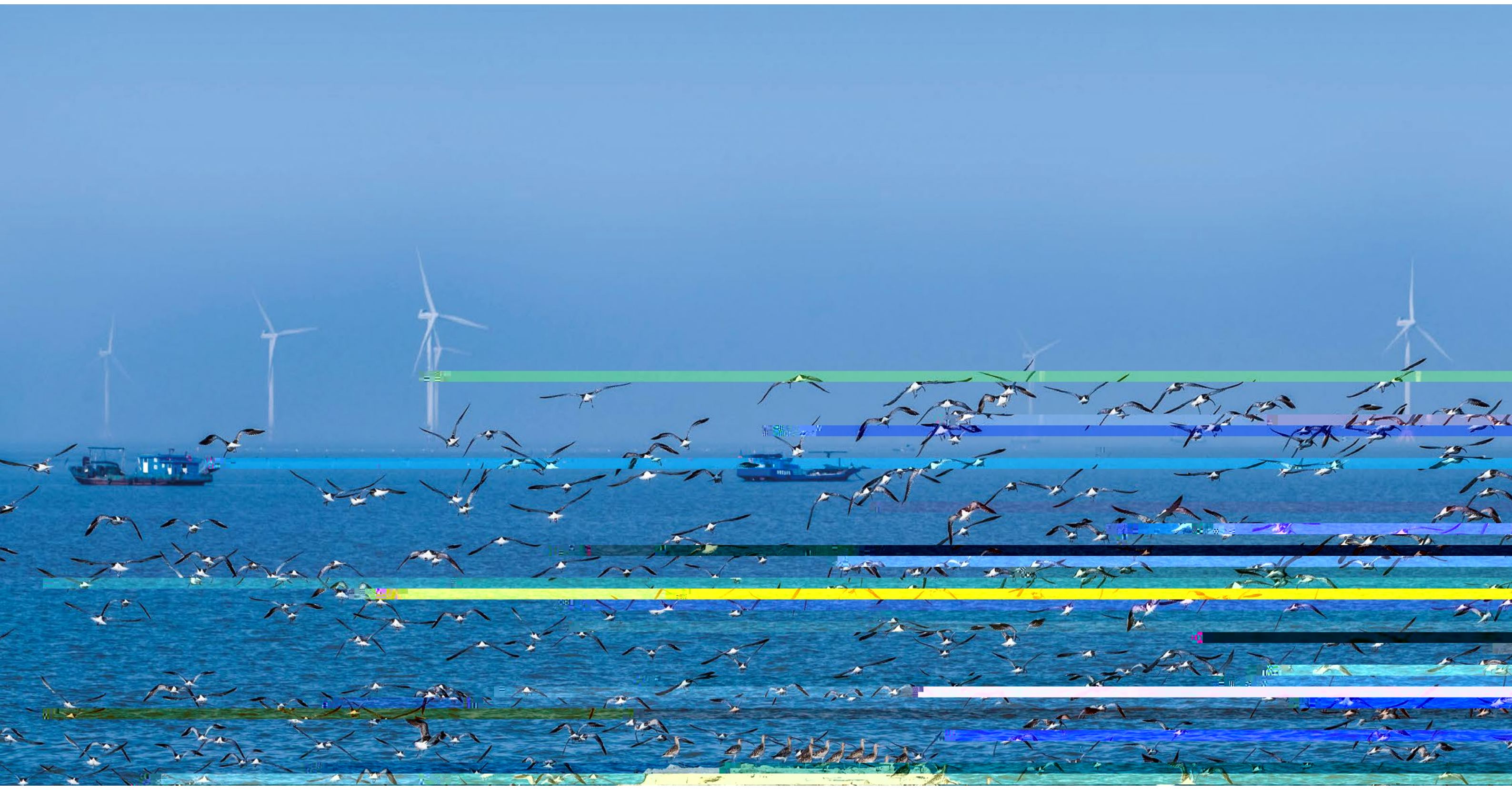
In strict accordance with the laws and regulations such as the *Law of the People's Republic of China on Prevention and Control of Environmental Pollution by Solid Waste*, the Company prepared the *Measures for the Management of Waste Disposal of Longyuan Power Group Corporation Limited* to regulate waste disposal procedures, improve the prevention and control system of hazardous waste, raise disposal efficiency, prevent disposal risks, and minimize the threat posed by waste to the ecology, environment and human health in soil, water source, and atmosphere.

%

Comprehensive utilization of solid wastes as fly ash, slag and gypsum

Dispose solid waste. To prevent environmental pollution, the Company developed a rigorous waste replacement plan and installed emergency storage equipment and facilities to temporarily store by-products during the off-season. Additionally, a qualified third party was entrusted to carry out comprehensive utilization of these by-products. In 2022, Longyuan Power achieved 100% comprehensive utilization of solid wastes as fly ash, slag, and gypsum. The Company also strengthened its R&D efforts in waste recycling technology, such as grinding waste wind turbine blades into home building materials, and proactively responded to the intensive decommissioning period of wind turbines in the industry from 2025 to 2029 to promote low-carbon development throughout the industrial chain.

Dispose hazardous waste. The primary hazardous wastes generated by Longyuan Power's new energy business are waste lubricating oil and batteries. The company collected these hazardous wastes in a timely manner and stored them in a designated hazardous waste warehouse before packaging and labeling with warning signs as per environmental protection requirements. During transportation, the Company used licensed means of transportation for hazardous waste transportation and delivered them to a qualified third-party organization for proper disposal.



Biodiversity protection

Longyuan Power is dedicated to establishing a new natural economy that fosters a harmonious relationship between energy and nature. Upholding the principle of "protection in development and development in protection", the Company promotes biodiversity protection reliably in multiple actions during project site selection, project construction, and power plant operation, striving for a harmoniously beautiful homeland.

Bird protection. Longyuan Power studied the influence of wind power on the migration of birds and ensured sufficient space between wind turbines to allow safe passage of birds. Warning colors were also used to minimize the probability of hit of birds against blades. In wind power projects, the Company built artificial bird nests on power grid lines to provide sound habitats for birds.

Marine life protection. Longyuan Power studied the influence of wind turbine noise on marine life and monitored for a long time, and kept a close eye on the changes in biological resources in the reservoir areas in which tidal power plants are located. The Company attached great importance to the protection of marine and fishery resources and promoted the breeding and growth of fish resources by way of freeing fries regularly. In 2022, Longyuan Power Jiangsu Company organized welfare breeding and releasing activities in Sheyang County and released 475 million fish fry of various types.

Act for Good:
Creating a Better Life with Community

Employee rights and interests

Equal employment opportunities

In strict accordance with the *Labor Law of the People's Republic of China, the Labor Contract Law of the People's Republic of China*, and other laws and regulations, we stick to equal employment and treat all employees equally regardless of their ethnicity, gender, nationality, religious belief, and cultural background. We say no to forced labor and child labor, maintain equal pay for equal work, reach 100% of labor contracts signing ratio, and protect the legitimate rights and interests of employees. In 2022, there were no incidents of discrimination, child labor, or forced labor.

Democratic management

We improve democratic management of the Company in the new era with the Workers' Congress at its core, collect proposals, suggestions, and opinions from employee representatives, supervise follow-up procedures, and standardize democratic supervision mechanism. In 2022, a total of 25 proposals were filed by employee representatives, and all of them were delivered.

Remuneration and bonus

We conduct performance appraisal for all employees, highlight performance contribution, and gradually establish a positive and incentive system with distinctive orientation and hierarchical classification. More attention is paid to high-level and high-skilled professionals on the front line who occupy key positions and are urgently needed. We also boost and maintain the salary competitiveness of key positions, make timely contributions to the five mandatory insurance plans and housing provident fund for employees with supplementary medical insurance and personal accident insurance, and strictly implement the leave regulations for female employees during pregnancy and childbirth.

Employees

%
Proportion of female senior managers

%
Labor contracts signing ratio

%
Social insurance coverage

Employee growth

We fully respect the talent value, place considerable value on talent growth, focus on the talent cultivation, constantly promote the Company's "14th Five-Year Plan" for talent cultivation and "Longteng" talent project, and continue to optimize the talent cultivation system and project curriculums, to ensure the sustainable development of enterprise talents.

Career advancement: We make clear the three talent channels including "technology, skills and management", and intensify efforts to cultivate outstanding young talents. In 2022, we selected and promoted 22 young managers, accounting for 67% of the promoted employees.

On-the-job training: We accelerate the training of professionals and establish a professional talent pool of 459 people covering five professional directions, including internationalization, law, science and technology innovation, directors and supervisors, and certified professionals. We continue to promote the construction of lead instructors, title evaluation and skills identification, with over 500 lead instructors employed in 2022. We also provide high-quality training projects such as "Craftsmanship Training Camp", "Grassroots Comprehensive Management Ability Promotion Class", "Employees with Certificates", "Lead Instructor Training", and "Famous Teachers' Lecture" tailored for employees.

RMB million

Investment in employee training

person-time

Cumulative training opportunities

Education background

- Number of employees with a master's degree and above
- Number of employees with a bachelor's degree
- Number of employees with an associate degree and below
- Number of employees graduating from technical secondary schools and below

Age

- Number of employees aged below 30
- Number of employees aged 30-50
- Number of employees aged over 50

Employee care

We roll out "Actions for Care" as well as cultural and sports activities such as sports competitions, autumn brisk walking, reading events, and themed activities for female employees to balance their work and life. Attention is paid to special groups and female employees while assistance covers all employees in need.

We put in place the "Happy Employee Project", and hold the Lantern Festival Celebration for seconded employees, so that employees whose homes are located thousands of miles away can share the reunion and joy of the festival.

We hold health activities themed "Care for the Health of Female Employees", including health knowledge lectures, DIY sachet making, AI physical examination and so on, so as to improve the health awareness and self-care ability of female employees, enabling them to engage in work with a healthier and positive attitude.

Lantern Festival Celebration

Health and safety

Putting the health and safety of employees first, we enhance our safety foundations to ensure a healthy and safe environment for employees.

Safety foundations

We strictly implement the *Law of the People's Republic of China on Work Safety, the Law of the People's Republic of China on the Prevention and Treatment of Occupational Diseases* and other laws and regulations, and establish a work safety management system featuring "culture first, responsibility delivered, risks controlled, measures guaranteed, and foundations cemented." Focusing on priorities such as production and infrastructure, we formulate and revise nine management policies such as *Measures for the Management of High-risk Operations and Measures for the Safety Management of Offshore Wind Power Operations*, standardize management responsibilities and processes, and improve the level of safe operation to further consolidate the foundation of safety. We revise and release comprehensive emergency response plans and 20 special emergency response schemes. Hidden dangers are investigated to identify major risks, safety hazards, and high-risk operations with special rectification actions. The number of work-related fatalities and the rate of work-related fatalities from 2020 to 2022 are 0.

Safety awareness

We standardize work safety, set up a team of internal trainers, and publicize work standards. The Company and grassroots leaders have given 42 lectures on work safety and all employees have participated in the safety knowledge network competition.

Digital empowerment

We complete the "one person, one machine" configuration of work recorders through digital platform for new energy production and real-time video monitoring site safety. All wind turbines of 260 power stations are included in the monitoring scope. Real-time positioning of production vehicles and vessels results in the visualization of the operation site. We establish digital management platform of engineering, to realize remote monitor of infrastructure sites, and significantly reduce safety hazards.

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Employees perform maintenance operations in the wind turbines

Community contributions

Rural vitalization projects

RMB million

Support funds in 2022

More than RMB million

Funds for consumption-based assistance

In response to the national strategy of rural vitalization and community development, we harness our strengths to promote local prosperity and a better life and practice our corporate social responsibility.

Rural vitalization: We help Youyu County through a targeted assistance program to ensure a smooth transition from poverty alleviation to rural vitalization.

Industry	
Talent	◆ Training 50 grassroots cadres and 30 leaders of rural vitalization ◆ Recruiting employees from families lifted out of poverty and offering 191 job opportunities to Youyu County ◆ Expanding the scope of education grants to cover elementary, junior high, and high schools in the county and giving financial rewards to 240 poor students and 50 outstanding teachers every year ◆ Donating more than 500 children's books to Chengguan Primary School in, Youyu County
Ecology	

Wind power promotion on campus

Wenling Donghaitang wind farm "windmill exploration" class in Zhejiang

Non-profit activities: We encourage employees to participate in non-profit activities. Employees regularly participate in "Energy Green Care" volunteering activities, and volunteers spread green energy knowledge. In 2022, we carried out wind power promotion events on campus to help students understand the knowledge of wind power generation and the requirements of protecting power facilities. Longyuan Inner Mongolia Company sent bilingual safety manuals to Mongolian herders to promote safety knowledge.

Overseas social responsibilities: We fulfill our overseas social responsibilities by improving local infrastructure and local people's livelihood, and engaging in poverty alleviation in South Africa. We support local education and cooperate with local governments to implement the "Aid, Dreams, People" education action plan to help financially challenged students complete their education. By the end of 2022, we had invested Rand 68.76 million (equivalent to RMB25,503,100) in non-profit activities in South Africa, providing education services to more than 469 local children. Every year, we offer free healthcare services to more than 9,000 residents.

World AIDS Day Campaign

Case: "Cloud Open Day" builds a bridge between Chinese and South African stakeholders

In December 2022, we launched the "Rainbow to the Future" China-South Africa Corporate "Cloud Open Day", attracting young representatives of government agencies, think tanks, universities, and enterprises in China and South Africa. In addition to discussions and exchanges, they paid an online visit to wind farms and shared the story of clean energy cooperation under the Belt and Road Initiative (BRI). The event promoted people-to-people ties along the BRI and displayed a good international image of Longyuan Power.

YOUR CONCERN BEACONS **OUR COMMITMENTS**

Commitments for 2023

Experiencing the critical period of "14th Five-year Plan", the Company adheres to the mission of sustainable development, and goes along the path of high-quality development in a rapid and steady manner, to accelerate the construction of the world-class new energy company to a new level.

Dedicating to quality clean energy

We comprehensively improve the scale and proportion of wind power development, accelerate the development of offshore wind power clusters, proactively strive for replacing smaller units with larger ones and other capacity increase transformation, plan new energy base projects in heavy carbon industry areas, innovate the "new energy + " project, continue to explore new natural economic models, and promote the natural benefit of energy transformation.

Enhancing safety foundations

To improve digital regulatory efficiency, we establish a three-level risk classification video monitoring system at the departmental, corporate, and plant levels. We also conduct in-depth data mining analysis, expand the scope of meteorological data collection, continuously optimize power forecasting technology, and promote the transformation of "digital resources" into "data assets", enabling data to better empower business and advance development.

Intensifying the ability of science and technology innovation

We focus on "consolidating advantageous technologies, exploring innovative technologies, and solving practical problems", while increasing investment in science and technology and R&D. Meanwhile, we endeavor to complete and put into operation the floating wind and fishery integration project, explore non-electric use of new energy, conduct analysis on submarine cable fault warning and research on the application of laser technology, and innovate the distributed photovoltaic intelligent operation and maintenance mode.

Upholding security in green ecology

We promote green energy in line with healthy ecology, practice harmless recycling and resourceful utilization of new energy solid waste, explore resourceful circular economy industrial model and layout of new energy industry, and realize coordination between economic and social development and population, resources and environment.

Strengthening the harmonious Society

We take more care of employees in remote and hardship areas. Combining with the rural revitalization strategy and "Wind Riding" and "Brightening" campaigns, we explore new cooperation models such as energy cooperatives and collective land for equity.

Improving corporate governance capabilities

We continuously deepen the construction of compliance management system, launch and implement ESG series actions, systematically carry out ESG training on hot topics and ESG key indicators, and strengthen the ESG awareness of all employees.

Appendix

Performance Progress of 2022

The blueprint has been drawn, and it is only through perseverance that we can realize our dreams. It is our mission and unwavering commitment to "developing clean energy and building a Beautiful China". Over the past year, by pouring our sweat and demonstrating our dedication, we have gained fruitful results concentrating on "essential safety, scale doubling, digital transformation, innovative leadership and healthy progress".

Governance

Indicator	Unit	Year 2022
Board meetings	Time	10
Meetings of specialized committees of the Board	Time	11
Meetings of the Supervisory Board	Time	4
The General Meetings	Time	3
Proportion of female independent directors	%	33.33
Proportion of female supervisors	%	66.67
Coverage of anti-corruption training for middle and senior managers	%	99.06

Environment

Indicator	Unit	Year 2022
Total consolidated installed capacity	MW	
Wind power installed capacity	MW	
Other renewable energy installed capacity	MW	
Total annual power generation	MWh	
Wind power generation	MWh	
Power generation from other renewable energy	MWh	
Electricity consumption	MWh	
Electricity intensity	kWh /RMB10 thousand in revenue	
Water consumption	Ton	
Water intensity	g/kWh	
Carbon dioxide emissions from coal-fired power business ①	Ton	
Scope 1 carbon dioxide emissions	Ton	
Scope 2 carbon dioxide emissions ②	Ton	
GHG emission intensity	g/kWh	
Sulfur dioxide emissions from coal-fired power business	Ton	
Sulfur dioxide emission density in coal-fired power business	g/kWh	
Nitrogen oxide emissions from coal-fired power business	Ton	

① Greenhouse gas emissions in this report are calculated based on the Scope 1 emissions of the two affiliated coal-fired power companies, two major greenhouse gas emitters of Longyuan Power. As of the release of the report, this data has not been verified by a third party.

② Most of the electricity consumption of the Company's coal-fired power business is from the self-generated electricity, and only a small amount of electricity is purchased.

Environment
Indicator
Nitrogen oxide emission density in coal-fired power business
Dust emissions from coal-fired power business
Dust emission intensity in coal-fired power business
Water consumption of coal-fired power business
Water intensity of coal-fired power business
Oil consumption of coal-fired power business
Oil intensity of coal-fired power business
Standard coal consumption of coal-fired power business
Standard coal intensity of coal-fired power business
Amount of fly ash generated from coal-fired power business
Fly ash intensity in coal-fired power business
Amount of slag generated from coal-fired power business
Slag intensity in coal-fired power business
Amount of gypsum generated from coal-fired power business
Gypsum intensity in coal-fired power business
Amount of waste lubricating oil generated
Waste lubricating oil intensityness
Amount of wast
Amount / wer businntensityness

Social		
Indicator	**Unit**	**Year 2022**
Number of employees	Person	8,842
Number of employees aged below 30	Person	2,273
Number of employees aged 30-50	Person	5,229
Number of employees aged over 50	Person	1,340
Number of employees with a master's degree and above	Person	687
Number of employees with a bachelor's degree	Person	5,570
Number of employees with an associate degree	Person	1,524
Number of employees graduating from technical secondary schools and below	Person	1,061
Number of employees of Han ethnicity	Person	8,155
Number of employees of ethnic minority	Person	653
Number of Chinese mainland employees	Person	8,807
Number of employees in Hong Kong, Macau, and Taiwan	Person	1
Number of expatriate employees	Person	34
Number of male employees	Person	7,527
Number of female employees	Person	1,315
Proportion of female senior managers	%	25
Employee turnover rate [④]	%	2.58
Turnover rate of male employees	%	2.14
Turnover rate of female employees	%	5.10
Turnover rate of Chinese mainland employees	%	2.59

④ The calculation of employee turnover rate is changed to employee turnover rate = number of resigned employees / total number of employees at the end of the period * 100%. The employee turnover refers to employees who resigned voluntarily, retired or otherwise terminated their employment with the Company.

Social

Indicator	Unit	Year 2022
Turnover rate of employees in Hong Kong, Macau, and Taiwan	%	0
Turnover rate of expatriate employees	%	0
Labor contracts signing ratio	%	100
Social insurance coverage	%	100
Trade union participation rate	%	97.01
Days of paid leave per employee	Day	7.42
Number of training employees	Person-time	140,390
Employee training coverage ⑤	%	86.07
Training coverage of production employees	%	64.99
Training coverage of management and technical employees	%	30.25
Training coverage of employees in other positions	%	4.76
Number of work-related fatalities	Person	0
Number of days lost due to work-related injuries ⑥	Day	906
Total donations to external beneficiaries ⑦	million	28.33
Total suppliers	-	7,267
Number of domestic suppliers	-	7,150
Number of overseas suppliers	-	115
Number of suppliers in Hong Kong, Macau, and Taiwan	-	2
Number of volunteers	Person-time	3,669
Total hours of volunteer services	Hours	19,889.20

⑤ Since the newly acquired project company was not included in the training information statistics in 2022, the data only reflect training in the headquarters and provincial subsidiaries.
⑥ The number of days lost due to work-related injuries is counted in the form of cumulative summary data.
⑦ The scope of external donation statistics is the total donations to external beneficiaries in the name of the Company.

ESG Reporting Guide of HKEx

Aspect	Indicator	Location in the Report / Note
Aspect A1: Emissions	General Disclosure*	P36-38、P56
	KPI A1.1	P34、P37、P50-51
	KPI A1.2*	P50
	KPI A1.3	P51
	KPI A1.4	P51
	KPI A1.5	P37-38
	KPI A1.6	P38
Aspect A2: Use of Resources	General Disclosure*	P56
	KPI A2.1	P50-51
	KPI A2.2*	P50
	KPI A2.3	P24-34
	KPI A2.4	P37
	KPI A2.5	Since the Company is a power producer that does not require product packaging, it is determined that this indicator is "not applicable" after materiality assessments.
Aspect A3: The Environment and Natural Resources	General Disclosure	P56
	KPI A3.1	P39
Aspect A4: Climate Change	General Disclosure	P33、P56
	KPI A4.1	P33-34
Aspect B1: Employment	General Disclosure*	P40、P56
	KPI B1.1*	P41、P52
	KPI B1.2*	P52 The Company doesn't track the age information of the employee turnover. We will improve and optimize the relevant statistical system to improve the data collection and disclosure in the future.
Aspect B2: Health and Safety	General Disclosure*	P43、P56
	KPI B2.1*	P43
	KPI B2.2*	P53
	KPI B2.3*	P43
Aspect B3: Development and Training	General Disclosure*	P41、P56
	KPI B3.1*	P40、P53
	KPI B3.2	P53 The Company doesn't make statistics on the information about the number of employees trained by gender, but makes statistics on the information about employee training by employee type. We will refine and optimize our training information system to improve data collection and disclosure in the future.

Aspect	Indicator	Location in the Report / Note
Aspect B4: Labour Standards	General Disclosure*	P56
	KPI B4.1	P40
	KPI B4.2	The risk of child and forced labor is low within the Company, so there is no need to establish relevant remedies.
Aspect B5: Supply Chain Management	General Disclosure*	P35、P56
	KPI B5.1*	P53
	KPI B5.2*	P35
	KPI B5.3*	P35
	KPI B5.4*	P35
Aspect B6: Product Responsibility	General Disclosure	Since the Company is a power producer, for whom the health and safety of products and services, advertising, labeling, privacy, and remedies are not concerned, this indicator is determined to be non-material after materiality assessments.
	KPI B6.1	Since the Company is a power producer that does not engage in the production or sales of consumer goods, it is determined that this indicator is "not applicable" after materiality assessments.
	KPI B6.2	The Company is a power producer whose customers are mainly power grid companies, and we always maintain facilitated communication with them and offer consistent power and high-quality services. This indicator is determined to be non-material after materiality assessments.
	KPI B6.3*	P29
	KPI B6.4	Since the Company is a power producer that does not engage in the recycling of goods, it is determined that this indicator is "not applicable" after materiality assessments.
	KPI B6.5	Since the Company is a power producer that is almost unlikely to leak customer information or have other problems, this indicator is determined to be non-material after materiality assessments.
Aspect B7: Anti-corruption	General Disclosure*	P14、P56
	KPI B7.1*	P8、P14
	KPI B7.2*	P14
	KPI B7.3*	P14、P50
Aspect B8: Community Investment	General Disclosure	P56
	KPI B8.1	P44-45
	KPI B8.2	P44-45

* Selected key performance indicators

ESG Policy Index

HKEx ESG Content Index	2022 Company Policies
Governance	*Rules of Procedures of the Board* *Rules of Procedures of the Supervisory Board* *Rules of Procedures of the General Meeting* *Board Diversity Policy* *Key Points on the 2022 Rule of Law* *Internal Audit Management System* *Implementation of Related Party Transactions Management*
A1. Emissions	*Ecological and Environmental Management System* *Measures for the Management of Waste Disposal*
A2. Use of Resources	*Ecological and Environmental Management System*
A3. The Environment and Natural Resources	*Measures for the Management of Ecological and Environmental Protection* *Rules for Ecological and Environmental Protection of New Energy Power Generation Companies* *Outline for Ecological and Environmental Protection Inspection of New Energy Companies* *Document No.1 on 2022 Production Safety and Ecological and Environmental Protection* *Ecological and Environmental Management System*
A4. Climate Change	*Measures for the Administration of Energy Conservation* *Notice on Further Strengthening the Economic Operation Management of New Energy Power Generation Enterprises*
B1. Employment	*Measures for the Management of Labor Employment* *Notice on Strengthening the Performance Evaluation of All Employees*
B2. Health and Safety	*Regulations on Emergency Management* *Comprehensive Emergency Response Plans* *Provisions on Internal Investigation and Handling of Work Safety Accidents (Second Edition)* *Regulations on Emergency Management* *Safety Monitoring and Management Measures* *Measures for the Safety of Offshore Wind Power Operations* *Guidance on Promoting Occupational Health*
B5. Supply Chain Management	*Measures for the Management of Suppliers* *Implementation Rules for the Management of Deficit Behavior of Suppliers*
B7. Anti-corruption	*Implementing Measures for the Accountability System of the Work Style of the Party and Clean Administration* *Measures for Preventing Professional Integrity Risks* *Measures for Material and Procurement Supervision* *Measures for Management and Handling of Petition and Whistle-blowing Matters and Clues* *Measures for the Administration of Deepening Political Supervision and Promoting the Supervision of Key Tasks* *Provisions on Information Disclosure Management* *Key Points on the 2022 Rule of Law* *Internal Audit Management System*
B8. Community Investment	*2022 Rural Vitalization Work Plan*

GRI Content Index

Contents	GRI Sustainability Reporting Standards (GRI Standards)	Page
Chairman's Statement	GRI 2-22	p4-5
About Longyuan Power	GRI 2-1、GRI 2-6	p6-7
Data of 2022	GRI 2-4	P8
Honors of 2022	GRI 2-1	P9
Your Concern Beacons Our Care		
Corporate Governance	GRI 2	P12-13
Business Ethics	GRI 2-15、GRI 2-26、GRI 2-27、GRI 3-3、GRI 205	P14
The Party Building	/	P15
ESG Governance		P16-21
Your Concern Beacons Our Actions		
Act for Carbon Reduction: Developing of High-Quality Clean		
Leading development of new energy	GRI 3、GRI 302	P24-28
Innovating technology of clean energy	/	P29-32
Actively responding to climate change	GRI 3、GRI 201-2、GRI 305-1、GRI 305-2、GRI 305-5	P33-34
Establishing low-carbon partnership	GRI 3、GRI 204、GRI 308、GRI 414	P35
Act for Sustainable Nature: Protecting Ecosystem with the Green Philosophy		
Environmental management	GRI 3、GRI 303	P36
Pollution prevention and control	GRI 3、GRI 305-7	P37
Water resources management	GRI 3、GRI 303	P37
Waste disposal	GRI 3、GRI 306	P38
Biodiversity protection	GRI 3、GRI 304	P39
Act for Good: Creating a Better Life with Community		
Employee rights and interests		P40
Employee growth	GRI 3、GRI 404-1、GRI 404-2	P41
Employee care	GRI 3、GRI 401	P42
Health and safety	GRI 3、GRI 403	P43
Community contributions	GRI 3、GRI 413-1	P44-45
Your Concern Beacons Our Commitments		
Commitments for 2023	GRI 2-24	P48-49
Appendix		
Performance Progress of 2022	/	P50-53
ESG Reporting Guide of HKEx	GRI 2-5	P54-55
ESG Policy Index	GRI 2-23、GRI 2-27	P56
GRI Content Index	GRI 2-5	P57
Assurance report	GRI 2-5	P58-59
About this Report	GRI 2-3	P60

Assurance report

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Independent Limited Assurance Report

Ernst &Young Hua Ming (2023) No. 61310245_A01
China Longyuan Power Group Corporation Limited

To the Board of Directors of China Longyuan Power Group Corporation Limited:

Scope

We have been engaged to perform a limited assurance engagement on the selected key performance indicators contained in the Appendix (the "Key Information") of China Longyuan Power Group Corporation Limited (the "Company") 2022 Environmental, Social and Governance Report (the "ESG Report").

The Company's responsibilities

The Company's management is solely responsible for the preparation and presentation of the ESG Report in accordance with the disclosure recommendations of Guidelines for Standardized Operation of Listed Companies on the Shenzhen Stock Exchange (Revised in 2020) issued by the Shenzhen Stock Exchange (the "SZSE Guidelines") and the Stock Exchange of Hong Kong Limited Listing Rules — Appendix 27 to the Listing Rules "Environmental, Social, and Governance Reporting Guidelines (the "HKEX Guidelines "), in all material respects. This responsibility includes establishing and maintaining internal controls, maintaining adequate records and making estimates that are relevant to the preparation of the subject matter, such that it is free from material misstatement, whether due to fraud or error.

EY's responsibilities

Our responsibility is to express a conclusion on whether the ESG report is prepared according to disclosure recommendations of SZSE Guidelines and HKEX Guidelines and whether there are significant misstatements in the Key Information contained in the ESG Report based on the evidence we have obtained.

We conducted our engagement in accordance with the *International Standard for Assurance Engagements Other Than Audits or Reviews of Historical Financial Information* ('ISAE 3000'). The standard requires that we plan and perform our engagement to obtain limited assurance that ESG reports are free of material misstatements. The nature, timing, and extent of the procedures selected depend on our judgment, including an assessment of the risk of material misstatement, whether due to fraud or error.

We believe that the evidence obtained is sufficient and appropriate to provide a basis for our limited assurance conclusion.

Our Independence and Quality Control

We have maintained our independence and confirm that we have met the requirements of the Code of Ethics for Professional Accountants issued by the International Ethics Standards Board for Accountants and have the required competencies and experience to conduct this assurance engagement.

EY 安永

Independent Limited Assurance Report (continued)

Ernst &Young Hua Ming (2023) No. 61310245_A01
China Longyuan Power Group Corporation Limited

EY also applies International Standard on Quality Control 1, *Quality Control for Firms that Perform Audits and Reviews of Financial Statements, and Other Assurance and Related Services Engagements*, and accordingly maintains a comprehensive system of quality control including documented policies and procedures regarding compliance with ethical requirements, professional standards and applicable legal and regulatory requirements.

Description of procedures performed

Procedures performed in a limited assurance engagement vary in nature and timing from, and are less in extent than for a reasonable assurance engagement. Consequently, the level of assurance obtained in a limited assurance engagement is substantially lower than the assurance that would have been obtained had a reasonable assurance engagement been performed. Our procedures were designed to obtain a limited level of assurance on which to base our conclusion and do not provide all the evidence that would be required to provide a reasonable level of assurance.

Although we considered the effectiveness of management's internal controls when determining the nature and extent of our procedures, our assurance engagement was not designed to provide assurance on internal controls. Our procedures did not include testing controls or performing procedures relating to checking aggregation or calculation of data within IT systems.

A limited assurance engagement consists of making enquiries, primarily of persons responsible for preparing the ESG Report, and applying analytical and other appropriate procedures.

Our procedures included:

1) Interviewing the Company's management and staffs responsible for the ESG Report;
2) Performing analytical review procedures;
3) Performing sample inspection on the Key Information;
4) Performing recalculation procedures on the Key Information.

We also performed such other procedures as we considered necessary in the circumstances.

Conclusion

Based on our procedures and the evidence obtained, we are not aware of:

- that the ESG Report is not presented fairly, in all material respects, in accordance with the disclosure recommendations of the SZSE Guidelines and HKEX Guidelines; and
- any significant misstatements of the Key Information related to the ESG Report.

Ernst & Young Hua Ming LLP
China Beijing
29 March 2023

About this Report

This report is the twelfth independent report issued by Longyuan Power Group Corporation Limited. With the deepening of practices and the renewal of ideas, this report has renamed Environmental, Social and Governance Report since 2022, aiming to disclose information on environmental, social and corporate governance, and respond to the key issues of concern to stakeholders. This year, Longyuan Power engaged Ernst & Young Hua Ming LLP for the first time to perform independence limited assurance engagement on the selected key performance indicators of environmental, social and corporate governance in this report.

Reporting Period

The reporting period is between January 1, 2022 and December 31, 2022, with the disclosure of some contents extended as appropriate. The data in the report is from the annual reports and other official documents of Longyuan Power Group Corporation Limited and its subsidiaries, which have been reviewed by the senior management, administrative departments and subordinate entities.

Reporting Standards

This Report is prepared in accordance with the disclosure recommendations of the Stock Exchange of Hong Kong Limited Listing Rules — Appendix 27 to the Listing Rules "Environmental, Social, and Governance Reporting Guidelines (the "HKEX Guidelines") and Guidelines for Standardized Operation of Listed Companies on the Shenzhen Stock Exchange (Revised in 2020) issued by the Shenzhen Stock Exchange (the "SZSE Guidelines"). We are in strict compliance with all "comply or explain" provisions in the *Environmental, Social and Governance Reporting Guide* during the report preparation, and refer to the *GRI Sustainability Reporting Standards (GRI Standards)* of the Global Sustainability Standards Board, the *United Nations Global Compact and the ISO 26000：Guidance on Social Responsibility (2010)* issued by the International Organization for Standardization (ISO).

Reporting Principles

This report follows the reporting principles of materiality, quantitative, and consistency in *Hong Kong Stock Exchange ESG Reporting Guide*. We consider rating standards at home and abroad, the ESG latest trends, and the expectations of stakeholders to screen out material topics in response to the "materiality" principle. By establishing an ESG indicator information system covering the Company's headquarters and subsidiaries, we quantify key disclosure indicators in the ESG reports statistically in response to the "quantitative" principle. By referring to the disclosure scope of the Company's annual report, we adopt the same data disclosure standard and statistical method to meet the principle of "consistency".

Name Description

China Longyuan Power Group Corporation Limited is referred to as "Longyuan Power", "the Company" and "we/our" in the report.

Report Access

This report is available in simplified Chinese, traditional Chinese and English, and published in electronic version. You can read and download it from our website (www.clypg.com.cn).

Feedback

You can download the report from our website. To get a printed version or give any feedback on it, please contact us.

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