2022

ENVIRONMENTAL SOCIAL & GOVERNANCE REPORT

MINGYANG SMART ENERGY GROUP CO., LTD.

MINGYANG

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Chairman’ s Message

Currently, the changes in the world, the times and history are taking place in an unprecedented way, especially the deep adjustment of the global energy map and the green and low carbon have become the main theme of energy development. In the past five years, renewable energy has offered about 60% of the world's newly generated power. China's new energy development as represented by wind power and photovoltaic power generation has achieved remarkable results, with the installed capacity ranking first in the world, the proportion of power generation steadily increased and the cost dropped rapidly, thus entering a new stage of cheap and unsubsidized development.

Along with the wave of smart energy as combining clean energy with industrial intelligence in the fourth industrial revolution, Mingyang people always observe the initial mission of "transforming clean energy for the benefit of human society", devote themselves to every major event and every effort of sustainable development, and expect to promote the development of green energy, contribute to the creation of a green energy world with scientific and technological innovation and "double carbon" economy, and move towards a better and more sustainable future.

Adhere to technology first and innovation drive.

Innovation is the first driving force. In the present world, a new round of scientific and technological revolution and industrial transformation is booming, and technologies such as new energy, new energy storage and hydrogen energy are accelerating and iterating at an unprecedented speed. We believe that the core of fossil energy is exploitation, which depends on resource endowment; and the essence of new energy is manufacturing, the foundation and source power of which is technological innovation. In terms of science and technology, Mingyang launched an epoch-making "double-rotor" floating offshore wind power platform, and released a customized large MW product line for the "desert, gobi and wasteland" large base, realizing the successful offline of the world's largest single water electrolysis hydrogen production equipment and the world's longest blade, and winning many global firsts in technological innovation. Looking forward to the future, Mingyang lays out green energy to help deep carbon neutralization based on the diversified needs of future carbon neutralization application scenarios.

Insist on manufacturing and work for prosperity based on the sea.

Born near the sea, Mingyang prospers with the sea, and is unswervingly promoting the clustering and application scenario of the marine energy industry, taking the lead in implementing innovative demonstration of key equipment, materials and processes such as offshore wind power, floating, flexible DC and marine ranching, leading a new model of large-scale and cluster construction in the sea, and creating a globally competitive industrial cluster of three-dimensional integration of floating and marine energy. It creates guiding demands relying on smart energy application scenarios, extends to industrial clustering, whole-value chain and whole-life cycle value creation, and builds new kinetic energy from leapfrogging to surpassing development.

Adhere to green development and benefit the whole world.

Mingyang implants green genes and concepts into every link of its product design, manufacturing, sales, operation and maintenance. Innovating energy service and management mode based on big data and blockchain, and realizing the interconnection and efficient utilization of green energy, Mingyang creates the concept of green value for its customers, owners and the whole society, and joins hands with suppliers to build a green ecological supply chain, fulfilling its responsibility and mission of supporting environmental protection and protecting the environment. While promoting the low-carbon transformation of energy, it also makes new energy embrace the era of fair price through model innovation, benefits the users at a lower price, assumes social responsibility, actively donates the Hope Project, fights against disasters and pandemics, helps rural revitalization, as well as contributes more clear water and blue sky.

Green development has only a starting point but no ending point. We look forward to working with all parties to build a beautiful world full of sky blue, green land and clean water. We hope that more new energy enterprises will join hands in innovation and support the 2030 United Nations Sustainable Development Goals as embodied by their practical actions, so as to realize green sustainable development of all mankind. We will firmly move towards the goal of "establishing ourselves as a leader in smart and inclusive clean energy", and strive to contribute the wisdom and strength of Mingyang people to promote global green, low-carbon and high-quality development and build a community with shared future for the mankind!

Chairman’ s

About Mingyang Smart Energy

Company Profile

Mingyang Smart Energy Group Co., Ltd. (stock abbreviation: Mingyang Smart Energy, and stock code in Shanghai Stock Exchange: 601615) was established in 2006, headquartered in Zhongshan, Guangdong, China, and formerly known as Guangdong Mingyang Wind Power Industry Group Co., Ltd., and is a supplier dedicated to building clean energy life cycle value chain management and system solutions. As a global overall solution provider of clean energy, Mingyang is committed to green, inclusive and smart energy. Its business covers the development, operation and equipment manufacturing of new energy such as wind, light, storage and hydrogen. It ranks among the best of China's Top 500 Enterprises and Global Top 500 New Energy Enterprises, and ranks the first in the Global Offshore Wind Power Innovation. And it is striving to build a world-renowned new energy industry group of 100-billion level.

The primary business of Mingyang Smart Energy includes the development and design, product manufacturing, operation and maintenance services, as well as investment and operation of high-end new energy equipment, megawatt-class wind turbines and core components. The Group has established a R&D and innovation platform composed of "one headquarters and five centers" in the world, built a post-doctoral scientific research workstation, a national enterprise technology center, and a national and local joint engineering laboratory. As a national advantageous intellectual property enterprise and a national high-tech enterprise, it has obtained the design and type certification of more than 30 models.

Mingyang Smart Energy focuses on developing renewable green and clean energy, transforms renewable energy from supplementary energy to alternative energy through technological innovation and business model innovation and from noble energy to inclusive energy, and shoulders the mission of building a beautiful China full of sky blue, green land, green mountains and clean water, and of really benefiting the people.

On July 13, 2022, the Global Depositary Receipt (GDR) of Mingyang Smart Energy Group Co., Ltd. was officially listed on the London Stock Exchange and approved to use the "Green Economy Mark", with the security code of MYSE.L. Mingyang Smart Energy has become the first A-share listed company to complete the overseas listing of GDR since the implementation of the new regulations on interconnected depositary receipts.

2022

Ranked No. **385** among China's Top 500 Enterprises

Ranked No. **192** among China's Top 500 Manufacturing Enterprises

Ranked No. **15** among Global Top 500 New Energy Enterprises

Ranked No. **1** in Global Offshore Wind Power Innovation

Corporate Strategy

Over the next three to five years, we will continue to pursue green development. With “transforming clean energy for the benefit of human society” as our mission and “making global clean energy smart” as our strategic positioning and development vision, we are committed to delivering professional lifecycle value chain management and system solutions for clean energy. Upholding the five major ideas of development - innovative development, coordinated development, green development, explorative development and shared development, the Company is, by virtue of technological and business-model innovation, taking proactive approaches to develop supporting industrial service formats and extend the value chain, fueling its transformation from a production-oriented manufacturer to a service-oriented one.

Company Culture

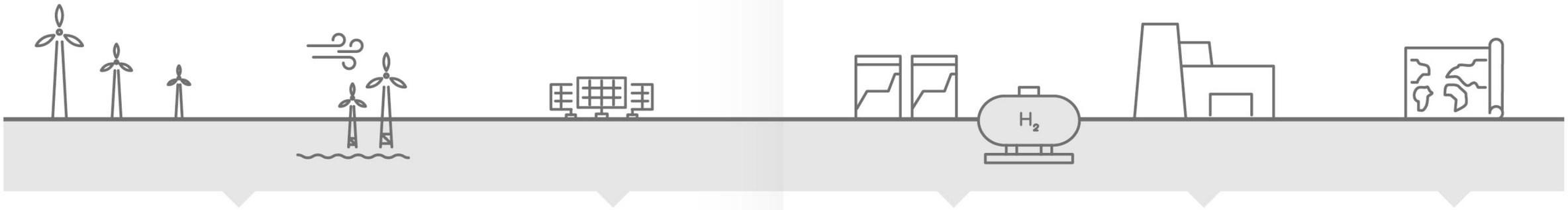
Our mission:
To transform clean energy for the benefit of human society

Our vision:
To make global clean energy smart

Our values:
Based on the essence of its corporate culture, being “natural-born and initiative-enabled”, and the rules of conduct, namely, to “pursue excellence in operations”, “be open and seek shared growth”, “meet customers where they are”, “break new ground in cooperation” and “be contributor-oriented”, Mingyang Smart Energy endeavors to create a symbiotic business ecosystem together with stakeholders.

Industrial ecology

Mingyang is making every effort to build a new energy industry ecology of "wind, light, storage and hydrogen", create guiding demands based on smart energy application scenarios, promote high-end new energy technologies, ecological industries and application scenarios, explore new power system application scenarios and implementation paths centered on new energy, form an overall new energy solution, adhere to "low carbon, low price and low energy consumption", as well as help early realization of the national dual-carbon strategic goal.



1.5-2.0
3.0-7.X

5-16

100MW
5\10

EMS\BMS
First

10
400

500
375MW

Wind energy industry

Mingyang is committed to the development of high-power and low-speed wind turbines on land and sea, significantly improving the utilization rate of regional wind resources, breaking through key technical difficulties in the industry, becoming a global leader in semi-direct drive technology, and continuously leading the large-scale development of wind power.

Onshore wind power: Mingyang adheres to high power generation, high availability and low power cost. Pursuing the advanced concept of life cycle management and the aerospace-grade lean production mode, it has successively launched a series of internationally leading onshore wind power products of 1.5-2.0 MW double-feed type and 3.0-7.X MW MySE semi-direct-drive type with customized and unique design, such as low-wind speed type, anti-typhoon type and plateau type.

Offshore wind power: Mingyang has overcome the worldwide technical problems concerning offshore wind power development in a majority of strong typhoon areas by virtue of independent innovation. With the advanced concept of life-cycle management, it has launched the world's largest semi-direct-drive anti-typhoon large offshore wind turbine set of 5-16 MW as coming with independent intellectual property rights. And it has developed a floating foundation and innovative floating wind turbine island suitable for deep water areas, and formed an offshore wind power product line as adapted to various wind conditions around the world.

PV industry

BIPV (cadmium telluride): Mingyang has mastered the new generation of cadmium telluride thin-film PV technology, and built the largest 100MW cadmium telluride thin-film cell production line in China. The products are applied in breaking the traditional PV application field, widely used in building PV integration projects and applied in the benchmarking demonstration projects such as the National Speed Skating Oval for Beijing Winter Olympics.

HJT (heterojunction): Mastering the most advanced heterojunction and perovskite photovoltaic technology, it has built and put into operation the 5 GW production line, is planning and laying out a 5 GW production line, and will form a 10 GW production capacity in the near future.

Energy storage industry

Mingyang renders energy storage system products and solutions including EMS integrated energy management system, BMS cell management system and energy storage inverter, as well as smart microgrid overall solutions.

Country-wide

In order to get closer to the market and customers, Mingyang Smart Energy has built ten production bases across the country, along with nine regional O&M service centers, over 400 spare parts warehouses, and a responsive service platform characterized by production bases + O&M service centers + projects, enabling the customer to be accessible to efficient O&M services and spare parts response channels.

Global Presence

Mingyang Smart Energy has put into operation more than 500 wind farm projects around the world, and exports its products to Italy, Norway, Bulgaria, India, Romania, Pakistan, Japan, South Korea, Vietnam and other parts of the world.

Mingyang is the first enterprise in China to export offshore wind turbines to Europe
Mingyang won the first order of offshore wind power project in Japan among Chinese complete machine factories
Mingyang won the bid for the largest offshore wind power single project in Southeast Asia - Vietnam Ca Mau 375MW Offshore Wind Power Project

2022 Sustainable Development Indicators

Environment

Exhaust emission

Total non-methane hydrocarbon emission: 566.34 kg

Emission of volatile organic compounds (VOCs): 3,331.25 kg

Emission of nitrogen oxides (NOx): 449 kg

Emission of sulfur oxides (SOx): 11 kg

Wastewater discharge

Emissions of chemical oxygen demand (COD) (in waste water): 14.47 tons

Emissions of ammonia nitrogen (NH3-N) (in waste water): 1.95 tons

Emissions of domestic wastewater: 237,267.6 m^3

Waste discharge

Total amount of hazardous wastes generated: 392.26 tons

Total harmless wastes generated: 14,133.71 tons

Energy utilization

Power consumption: 68,301,892.73 kWh

Natural gas consumption: 774,463.8 m^3

Liquefied petroleum gas consumption: 302,054.79 L

Gasoline and diesel consumption: 344,107.14 L

Water consumption: 533,003.91 m^3

Greenhouse gas emission [1]

Total emission of greenhouse gas: 42,928.05 tons of carbon dioxide equivalent (tCO2e)

Direct greenhouse gas emissions (Scope I): 3,975.48 tons of carbon dioxide equivalent (tCO2e)

Direct greenhouse gas emissions (Scope II): 38,952.57 tons of carbon dioxide equivalent (tCO2e)

Carbon dioxide emissions per 10,000 yuan of revenue: 0.01 tons/10,000 yuan

Environmental benefits

(The total wind turbine installation capacity till end of 2021 was 39.575 GW)

Carbon dioxide emission reduced by about: 5,543 million tons/year

Society

R&D

Number of R&D technicians: 2,163

Proportion of R&D technicians: 19%

R&D investment: RMB 10.98 billion

Proportion of R&D in operating income: 3.57%

Employee

Total number of employees: 11,475

Labor contract signing rate: 100%

Social insurance coverage: 100%

Employees with master's degree and above: 768

Number of female employees: 1,640

Number of ethnic minority employees: 956

Training sessions held: 4,183 sessions

Corporate Governance

Total assets: RMB 68.940 billion

(YOY increase: 12.11 %)

Operating income: RMB 30.748 billion

(YOY increase: 13.22 %)

Net profit attributable to parent company: RMB 3.455 billion

(YOY increase: 11.42 %)

Basic earnings per share: RMB 1.59

Ranking of newly installed wind power capacity in globe/China: fifth in the world and third in China;

Ranking of offshore wind power newly installed capacity: Second in the world and second in China

(Data from: Chinese Wind Energy Association of China Renewable Energy Society)

[1] In 2022, total carbon emission is 42,928.05 tons. Among, Scope I (its direct emissions) includes direct emissions caused by energy use within the organizational boundary, such as emissions of natural gas, gasoline, diesel oil, acetylene, etc.: 3,975.48 tons; Scope II (its indirect emissions), includes but is not limited to indirect emissions from electricity, heating, cooling and steam purchased or acquired and consumed by the organization: 38,952.57 tons.

Milestones of Social Responsibility

Looking back to 2022, green and low carbon has led the global energy revolution, broken through innovation and promoted high-quality development. In a year full of challenges, Mingyang was steadfast in its efforts to keep persevering. Here, we apply three key words: innovation leading, dual-carbon ecology and universal benefits to review the marks, sweats and smiles gained in 2022.

Innovation Leading

In 2022, a variety of wind power products went offline one after another to achieve a new round of innovation and leadership of onshore and offshore products. The success of fishing in the "offshore wind power + marine pasture" demonstration zone coupled with the official commencement of the offshore wind farm demonstration project show Mingyang's ability and strategic leadership in the three-dimensional integrated development of marine energy.

Offshore wind power continues to break through and innovate

The world's largest anti-typhoon semi-direct-drive offshore unit went offline

On June 1, MySE12MW semi-direct-drive offshore unit officially went offline. The unit was customized and designed for the domestic typhoon regions and the overseas markets such as Europe. And it was the world's largest anti-typhoon semi-direct-drive offshore unit at that time, promoting the development and upgrading of the entire industrial chain of high-end equipment and large-scaled equipment in terms of manufacturing, testing and transportation, as well as large lifting equipment in terms of installation, operation and maintenance, and helping China's energy structure in adjustment and transformation and the early realization of the ambitious "double carbon" goal.

The dual-rotor floating offshore wind power platform was launched in a leap-forward way

On September 29, as an epoch-making and landmark product of Mingyang, the OceanX double-rotor floating offshore wind power platform launched by Mingyang to the world adopted a refreshing double-rotor structure with a total capacity of 16.6MW, and became the world's largest and lightest double-rotor anti-typhoon floating wind turbine, creating a new scene for the development of far-reaching offshore wind energy resources, and opening up a new imagination space for the development of global offshore wind power.

The world's first 7MW anti-typhoon floating wind turbine went offline

On November 30, MySE7.25-158, the world's first 7MW anti-typhoon floating wind turbine, was officially launched. Customized for the far-reaching sea environment, the unit adopts the world's leading semi-direct-drive, anti-typhoon and floating technology, and can resist up to the typhoon of Level 17 and cope with complex ocean currents and waves. Such a monomer can output 36 million kWh of clean electric energy every year, which can meet the normal electricity consumption of 10,000 families composed of three members for one year, and can reduce coal consumption by 6,500 tons and carbon dioxide emissions by 18,200 tons.

The world's longest offshore anti-typhoon blade went offline

On December 11, the world's largest and longest offshore anti-typhoon blade (MySE260) was officially launched at Guangdong Shanwei Marine Energy Equipment Smart Manufacturing Center. This was the record that Mingyang Smart Energy refreshed the length of wind turbine blade again in less than half a year after it released the assembly line on June 24 this year, when the longest anti-typhoon blade in Asia was 111.5m.

Desert, gobi and wasteland cluster construction is moving towards a new model

The world's largest onshore wind turbine for "desert, gobi and wasteland" went offline

On December 29, the MySE7.15-216 onshore super-large wind turbine successfully went offline, which is currently the largest onshore wind turbine unit with the largest impeller diameter in the world; and in the meantime, the MySE8.5-216 model was released, which is the largest onshore wind turbine with the largest monomer capacity and the largest impeller diameter in the world. These two models are the flagship models launched by Mingyang for desert, gobi and wasteland-type wind power bases. In the future, they will continue to give equipment support for the construction and development of such "desert, gobi and wasteland" wind power bases relying on high reliability and high power generation genes.

The integrated development of marine energy goes to a three-dimensional stage

China's first "offshore wind power + marine pasture" demonstration zone ushers in the harvest

On January 19, Mingyang Group Guangdong Yangjiang Shapai Deep-sea Fishery and Culture Experimental Zone completed its first harvest of fish, which was the successful innovative practice of China's first "offshore wind power + marine pasture" demonstration zone, creating a precedent for the world's far-reaching anti-typhoon aquaculture in the sea and leading the three-dimensional integration and development of China's marine energy and the high-quality development of marine economy.

The oriental CZ9 offshore wind farm demonstration project commenced

On November 30, the oriental CZ9 offshore wind farm demonstration project of Mingyang Group commenced, which was the first three-dimensional development demonstration project of marine energy in Hainan. And it will be built into a three-dimensional marine energy innovation and development demonstration project of "offshore wind power + marine pasture + hydrogen production from seawater" in the era of non-subsidy, and made into the leading domestic and the first affordable offshore wind power demonstration benchmark in Hainan Province.

Dual-carbon Ecology

With the development of green ecological civilization, the goal of "double carbon" has brought new opportunities for China's economic and social development. Mingyang follows the pace of the times and seizes the opportunity to realize the comprehensive competitiveness of the whole-industrial-chain and full-factor wind, light, storage and hydrogen energy. In terms of application scenarios and application models, it makes continuous innovation and adopts blue ocean strategy, two-integration strategy, desert, gobi and wasteland development strategy and rural revitalization strategy. All of such key strategic measures have created the strong vitality of Mingyang to build a full-scene ecosystem under the dual-carbon economic system.

Wind, light, storage and hydrogen full-factor competitiveness

The first "fire, wind, light, storage, manufacturing and research" project in China was connected to the grid

On September 2, Phase I of the First Integrated Demonstration Project of "Fire, Wind, Light, Storage, Manufacturing and Research" of Mingyang - Kailu County 600MW Wind Power + 115MW/345MWh Energy Storage Facilities was officially put into grid operation. This project of Mingyang Group was not only the first wind storage joint demonstration project with the largest single capacity, but also the new energy project with the largest single capacity of energy storage facilities in the eastern Inner Mongolia and even the Northeast China, and also the first in China to carry out customized wind turbine application demonstration, large-scale power grid peak-regulating and energy storage demonstration, as well as non-subsidized wind power preferential pricing and energy storage compensation mechanism demonstration.

The energy storage industry won awards one after another

On September 7, REsource Electric, a subsidiary of Mingyang Group, appeared at the 12th China International Energy Storage Conference with a variety of application scenario solutions including "supporting energy storage for wind, light, fire and water power plants, etc." and "supporting energy storage for industrial and commercial parks, households, 5G base stations, etc.", and won the award of "2022 Best System Integration Solution for China's Energy Storage Industry". On November 12, at the "9th China International Optical Storage and Charging Conference", RENergy Electric won the award of "2022 Best Power-side Application Scenario Innovation Project". Recently, RENergy Electric, REsource Electric and other companies jointly applied for the project of "Key Technologies and Engineering Applications of High-reliability Multi-energy Microgrid Collaborative Support and Planning Evaluation", which won the second prize of the 2022 Science and Technology Progress Award of the China Electrotechnical Society, representing that the technical strength and solutions of the energy storage industry of Mingyang have been fully affirmed by the peers.

Mingyang Photovoltaic Company was established

On June 29, Guangdong Mingyang Photovoltaic Industry Co., Ltd. was officially registered and established as a professional photovoltaic business company wholly owned by Mingyang Group. Mingyang Photovoltaic launched the production plan of 5GW-HJT high-efficiency heterojunction cells and modules in November 2021. So far, it has formed a capacity of 5GW cells and modules, and become a world-leading heterojunction production line. Compared with conventional crystalline silicon cells, heterojunction cells have the overall advantages of low temperature coefficient, low attenuation, high conversion efficiency and high double-sided rate, and contain no light-induced attenuation (LID) and potential attenuation (PID), which brings lower power consumption cost.

High-quality development of smart energy overall solutions

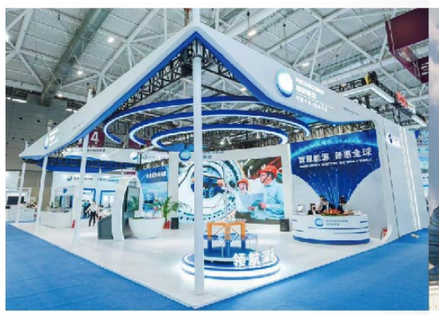
The "Action of Sending Support to Thousands of Townships and Ten Thousands of Villages" helped rural revitalization

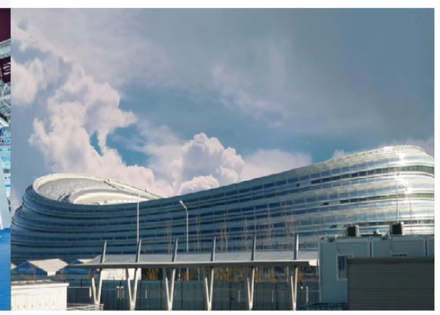
On September 29, the pilot project of "Action of Sending Support to Thousands of Townships and Ten Thousands of Villages", with Mingyang Group as the main investment and construction entity, was launched in Huaibin County, Henan Province, which was the first one to implement rural revitalization and take the lead in preparing implementation plans and starting construction in the country. After its completion, Huaibin County will become the first county with wind power coverage in villages, which can provide about 4.3 billion kWh of clean energy and save 1.51 million tons of standard coal per year, as well as innovate the wind power investment and construction model and the land use mechanism, activate the stocked collective land in rural areas to be priced into shares and achieve share profits, increase the collective economic income by more than RMB17 million per year, realize the annual tax revenue of RMB150 million, provide employment positions, and truly make the people's increase income guaranteed and the rural revitalization powerful.

Dual-carbon Ecology

Mingyang Solutions were unveiled at the 24th Hi-Tech Fair

On November 15, Mingyang Smart Energy was invited to participate in the 24th China International High-tech Achievements Fair to display its high-end and specialized clean energy science and technology innovative achievements and its three-dimensional integration and development solution of marine economy, among which the marine integrated energy island demonstrated the overall solution of the three-dimensional integration and development of marine economy, such as far-reaching sea floating wind power, marine pasture, hydrogen production from seawater, wave power generation, etc., which created industry-leading examples for marine energy technology advancement, industrial cluster and application scenarios, while the urban smart energy brain and smart power system of Mingyang demonstrated the industry-leading examples that Mingyang Group had brought in promoting the energy industry from traditional scenarios to digital management and smart production.





The complete solution of onshore and offshore wind turbines was unveiled at Lanzhou Investment & Trade Fair

Mingyang Smart Energy was invited to participate in the 28th Lanzhou Investment & Trade Fair to bring its onshore and offshore wind turbine to show the guests the independent innovation and core competitiveness of Mingyang in leading the large-scale wind turbine capacity, promoting the development of far-reaching offshore wind power and advancing the innovation and development of new photovoltaic and energy storage technologies. And models and objects of Mingyang wind turbine, photovoltaic and energy storage were exhibited in Lanzhou and Jiuquan, respectively, attracting groups of visitors to stop and watch.

Smart wind farm solution for holographic operation

On December 28-29, the "Smart Wind Farm Solution for Holographic Operation" project of Quant-Cloud under Mingyang Group won the fifth place among the national Top 100 competitors of the 4th China Industrial Internet Competition, which solution represented the highest level of China's excellent industrial Internet solutions. Prior to this, the "Xinyang Smart Energy Brain" of Quant-Cloud was successfully selected among a demonstration case of "Industrial Internet + Double Carbon" in the energy field.

Building PV products empower green city construction

Mingyang Smart Manufacturing shines in Beijing Winter Olympics

As an important symbol of the 2022 Beijing Winter Olympics, the National Speed Skating Oval is wearing 22 "ice ribbons" made of 120,000 pieces of sapphire blue PV power generation glass, which is the latest generation of product - BIPV power generation glass customized by Mingyang Ruike for the project. According to the appearance requirements of the Speed Skating Oval, this product combines metallic color coating technology, and applies high-strength laminated structure to perfectly integrate the building. And it is a real BIPV product born for buildings, which can not only decorate the facade of buildings like ordinary building glass, but also continuously produce clean electric energy.

Mingyang PV products are applied to the permanent venue of top forums

On November 6, the 5th World Top Scientists Forum was held at the permanent venue of Lingang New Area in China (Shanghai) Pilot Free Trade Zone. With a total floor area of 228,000 square meters, the venue project is currently the largest ultra-low energy-consumption public construction project in China. The conference hall is designed and installed with BIPV power generation glass up to 2,200m, which is provided by Zhongshan Ruike New Energy Co., Ltd., a subsidiary of Mingyang Group, and can provide nearly 2 million kWh of electricity and save nearly 2,000 tons of carbon dioxide emissions every year. This project adopts the double-hollow and double-laminated structure, and combines LOW-E and argon technology to minimize its thermal conductivity, reaching the fourth-level energy-saving standard.

Universal Benefits

"Smart Energy and Universal Benefits" is the unswerving belief and pursuit of Mingyang people. In 2022, Mingyang made major breakthroughs in its overseas market expansion, financial capital market expansion, industrial strategic cooperation, etc. The first offshore wind farm in the Mediterranean region - Taranto Offshore Wind Farm in Italy was built, and it has successively concluded contracts with wind power enterprises in Japan and South Korea, successfully entered the wind power market in Japan and South Korea, and obtained the evaluation and certification of ClassNK (Japan Classification Society). The 350MW project in Ca Mau, Vietnam was successfully hoisted for the first time.

Continuous breakthroughs in overseas markets

Mingyang helped Italy build its first offshore wind power project

On April 21, the Beliolico 30MW offshore wind power project in Taranto, Italy, was successfully connected to the grid. It was the first commercial offshore wind farm built and put into operation in Italy and the whole Mediterranean region, and was also the first show of offshore wind turbines of Chinese complete machine manufacturers in the European market. After the grid connection, it is estimated that it can meet the electricity demand of nearly 20,000 local households every year, and will reduce about 730,000 tons of carbon dioxide emissions in the 25-year service life.

Mingyang entered the offshore wind power market of South Korea

On May 30, Mingyang Smart Energy concluded a strategic cooperation agreement (MOU) with Unison Co., Ltd., a wind turbine manufacturer and wind power enterprise in South Korea, aiming at jointly expanding the cooperation of local and overseas offshore wind power in South Korea, promoting the development and optimization of fixed and floating offshore models applicable to the market, enhancing local cooperation of the wind turbine supply chain and exploring the development of wind power project resources, which was an important step for Mingyang to break through the South Korean market and solve the localized requirements.

The first hoisting of Vietnam Ca Mau No.1 350MW Offshore Project was successful

On August 7, the first hoisting of Vietnam Ca Mau No.1 350MW Offshore Project was successful. With a total installed capacity of 350MW, it was the largest offshore wind power project currently under construction in Vietnam and the entire Southeast Asia region, for which Mingyang MySE5.0-166 offshore wind turbine was selected.

The ClassNK (Japan Classification Society) assessment and certification was passed

On November 22, the three MySE3.0-135 offshore wind turbines provided by Mingyang for the Nyuzen Offshore Wind Power Project in Japan have been assessed and certified by ClassNK (Japan Classification Society), which meant that Mingyang offshore wind turbines had met the mandatory technical standards for wind turbines as approved by the Japanese government for the construction of offshore wind power projects. Mingyang has become the first Chinese wind turbine manufacturer to obtain such certification. Based on the ClassNK unit certification of Mingyang offshore wind turbine, the Nyuzen Offshore Wind Power Project would become the fourth offshore wind power project in Japan to complete wind farm certification.

The financial capital market has made new achievements one after another

The global depositary receipt of Mingyang Smart Energy was successfully listed on the London Stock Exchange

On July 13, the global depositary receipt (GDR) of Mingyang Smart Energy was officially listed on the London Stock Exchange, due to which, Mingyang Smart Energy has become the first A-share listed company to complete the overseas listing of GDR since the implementation of the new regulations on interconnected depositary receipts, and received the "Green Economy Mark" from the London Stock Exchange.

Mingyang Smart Energy was included in the Shanghai and Shenzhen 300 Index

Mingyang Smart Energy was transferred to the index list of 31 ones including Shanghai and Shenzhen 300, 300 Dynamic, Well-off Index, CSI 200, 300 Industry, 300 Growth, Green Leading, ESG Leading, Carbon Neutral 60 and Cross-Strait. As an enterprise in the wind power equipment sector, Mingyang Smart Energy has been included in the Shanghai and Shenzhen 300 Index, representing that the Company's comprehensive strength in the capital market has ranked among the top of the A-share market, and that its investment value has been recognized.

Social Responsibility Management

For implementing the new development concept and building a new development pattern,
we have been forging ahead towards our common goals:
To promote the low carbonization and democratization of energy,
and drive the overall layout on globalization, industrial chain,
value chain and whole life cycle under the strategy of
intelligent clean energy and GSP leadership,
thereby benefiting both China and
the world with clean energy and smart energy.

Social Responsibility Planning

Adhering to the mission of “developing clean energy and benefiting the human society”, Mingyang has integrated social responsibilities into corporate management and built a social responsibility implementation mechanism of “responsibility integration-responsibility implementation-responsibility enhancement” on corporate governance, products, R&D, environment, employees, community and other aspects across the board through top-level design, system guarantee, key indicator formulation, tracking and optimization.

Responsibility integration

We have incorporated the concept of social responsibility into the company's strategy, and hold unwavering commitment to green and low-carbon development and innovation drive. We strive to establish a sound social responsibility management system, optimize social responsibility evaluation indicators, and train the professional workforce of social responsibility.

Responsibility implementation

Towards the concept of social responsibility of green energy, we keep practicing the industrial poverty alleviation plan on the basis of industry features and independent innovation ability. We constantly follow up the implementation of all social responsibility solutions and build a multi-level evaluation system. We improve the application of public welfare platforms like Love Fund to further provide assistance and support to those in need.

Responsibility enhancement

The principal leaders of Mingyang Smart Energy direct the strategies on corporate social responsibility to solve key and difficult problems in the fulfillment of social responsibilities. Meanwhile, we continue to develop the awareness of corporate managers and employees to practice social responsibilities, and build a social responsibility team that dares to be innovative, responsible and active.

Social Responsibility Organization System

In order to further strengthen the environmental, social and governance (ESG) management and improve the ESG management system for and within the Company, the Company announced the establishment of the Environmental, Social and Governance (ESG) Management Committee (hereinafter referred to as the “ESG Committee”).

ESG Architecture and Responsibilities

Item	Responsibilities
Member of the ESG Committee	· The member of the Board of Directors of the Company, including independent non-executive directors · The chairman of the committee is generally the chairman of the Board of Directors or an independent non-executive director
Competence of the ESG Committee	·Right to appoint, access to resources, access to information and right of deliberation
Functions of the ESG Committee	·Supervision of the formulation and implementation of ESG strategy ·Other functions: including but not limited to monitoring the budget and expenditure, monitoring the internal and external communication communication with stakeholders and and reviewing reports on ESG
ESG Execution Group functions	·ESG Execution Group is mainly composed of the heads and executors from ESG-related departments Functions:To meet ESG compliance requirements during work ·To identify ESG risks of the Company through constant communication with stakeholders, report the same to the Board of Directors, and formulate management policies and plans for ESG risks ·To set ESG management objectives and work plans for approval by the Board of Directors ·To report ESG work results and prepare ESG report

ESG Work Planning

Item	Content
Improve ESG index system	· Refer to industry standards and ESG indexes of advanced enterprises and build ESG index system of the Group
Build ESG management architecture	· Determine ESG management architecture
Define ESG index targets	· Collect data based on the established ESG index system of Mingyang · Compare the current situations, benchmark the model enterprises, and determine ESG index targets and main responsible departments
Target undertaking	· Submit a work plan by the target responsible department
Follow up special issues	· Sort out key tasks and form a special team to follow up
Release ESG report	· Complete the release of annual ESG report

Stakeholders

Mingyang Smart Energy attaches great importance to the concerns of stakeholders and actively communicates with them. After understanding the demands, opinions and suggestions of various stakeholders, such demands, opinions and suggestions are gradually transformed into the action goals of the Company during its sustainable development, and the substantive issues they pay attention to are incorporated into the Company's decision-making and actual operation, so as to respond to the reasonable demands of various stakeholders to the greatest extent.

Stakeholders:
Shareholders and investors

Concerns of Stakeholders:
Corporate profitability
Corporate governance standards
Information disclosure standards
Guarantee of shareholders' interests
Profit distribution ability
Fair information disclosure

Mode of Communication:
Shareholders' meeting
Company reports
Periodic reports

Stakeholders:
Customers

Concerns of Stakeholders:
Technical service quality
Product safety and stability
Performance in good faith
Ability to create value

Mode of Communication:
Strict contract execution
Control product quality
Constant investment in product R&D
Quality products and services provision
Customer satisfaction survey

Stakeholders:
Employees

Concerns of Stakeholders:
Legitimate rights and interests protection
Workforce training mechanism
Career development platform
Salary and welfare protection

Mode of Communication:
Equal and standardized employment
Full coverage of labor contract
Professional skill training opportunity
Provision of a diversified development platform
Health and safety protection enhancement

Stakeholders:
Suppliers

Concerns of Stakeholders:
Compliance with contract requirements in good faith
Regulation of procurement management
Win-win cooperation
Material quality assurance

Mode of Communication:
Fair and open procurement
Sound supply chain management
Improvement of supplier performance evaluation
Long-term strategic partnership
Cooperation and exchange mechanism within the industry

Stakeholders:
Government and regulators

Concerns of Stakeholders:
Operation in compliance with laws and regulations
Social benefit creation
Economic development boost
Scientific and technological innovation capability

Mode of Communication:
Compliance with laws, regulations and policies
Tax payment according to law and business operation in good faith
Innovation and R&D capability enhancement
Stable job provision
Local development driven by featured industries

Stakeholders:
Communities

Concerns of Stakeholders:
Local environmental protection
Community construction and development
Community charity

Mode of Communication:
Environmental protection and "green operation"
Community construction support
Industrial and education poverty alleviation
Charitable activities in communities

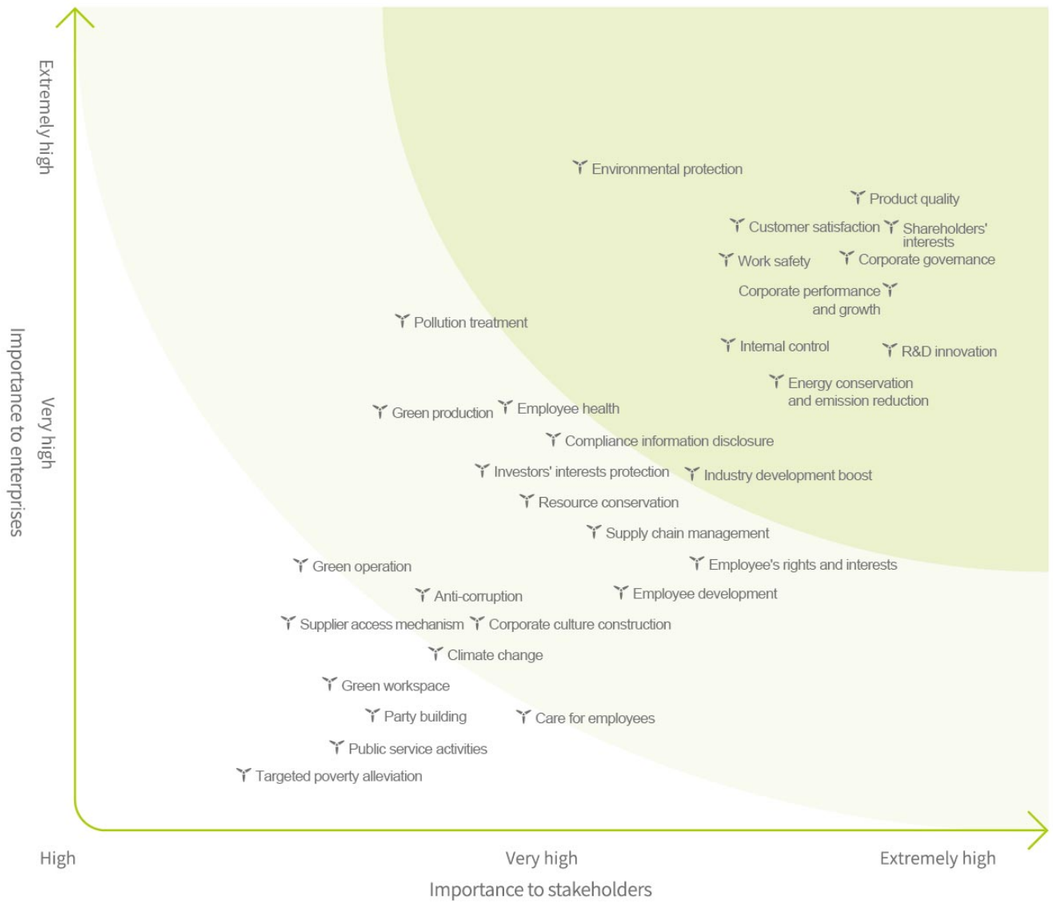
Identification of Substantive Issues

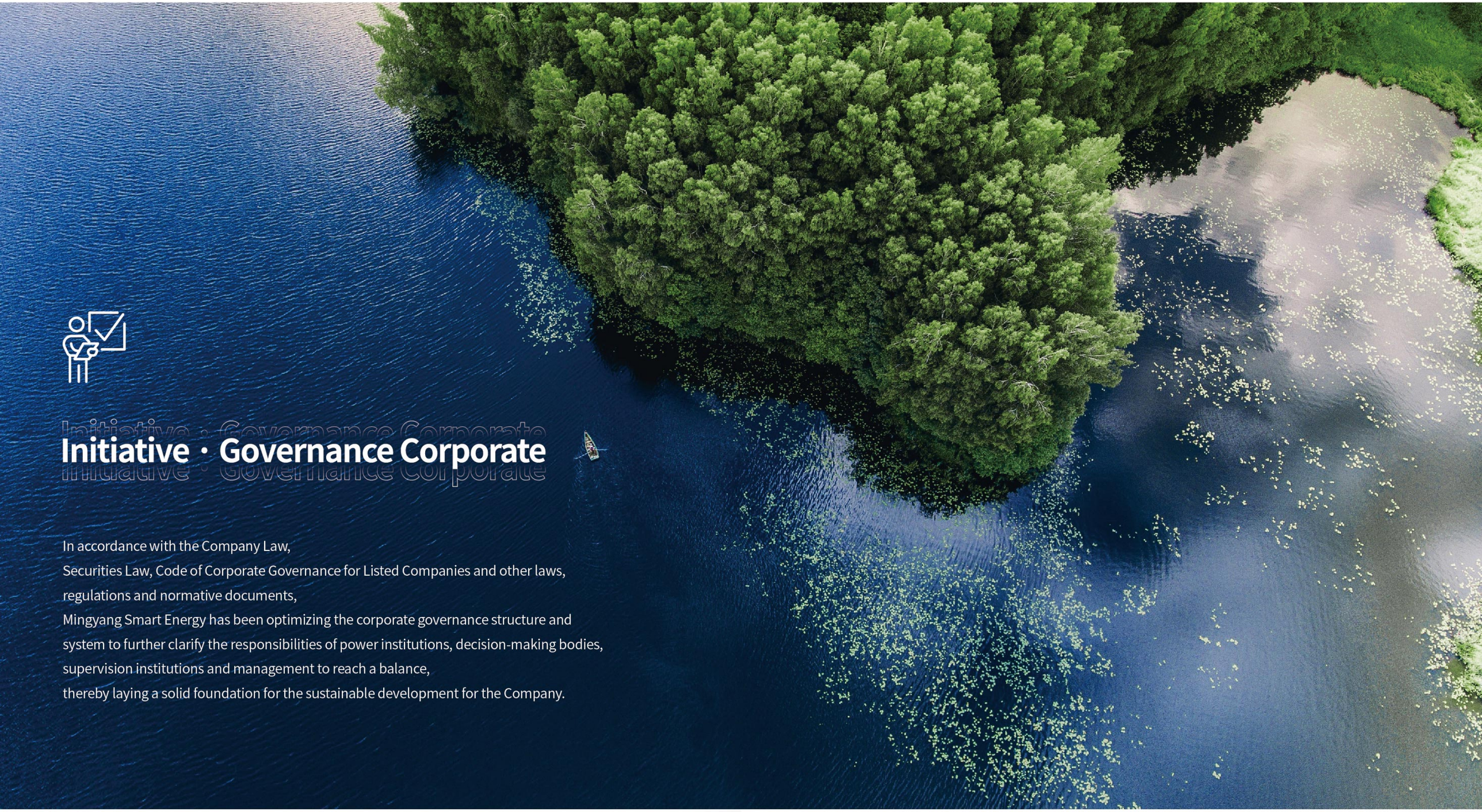
Referring to the standards, guidelines and initiatives relating to environment, society and governance at home and abroad, the Company has identified 26 issues that stakeholders pay close attention to from three dimensions: environmental performance, social performance and corporate governance.

Based on the expectations of stakeholders and the strategies of sustainable development for enterprises, considering the hot issues, state policies, industry development and other factors, we distributed to stakeholder questionnaires on substantive issues on corporate environment, society and governance to evaluate the importance of corporate governance, product service quality, safety production management, employees and society. We collected 112 questionnaires, all of which were valid, with the effective rate of 100%.

With the support of matrix of substantive issues, we finally defined the issues to be disclosed in the Environment, Society and Governance Report of Mingyang Smart Energy.

Matrix of Substantive Issues in theEnvironment, Society and Governance Report 2022

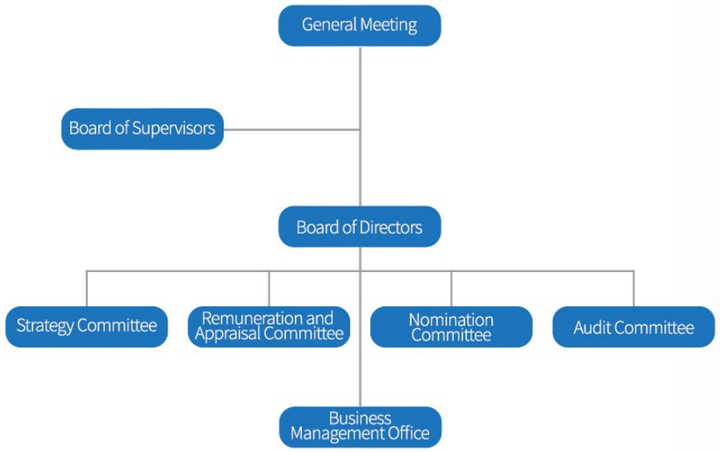




Initiative · Governance Corporate

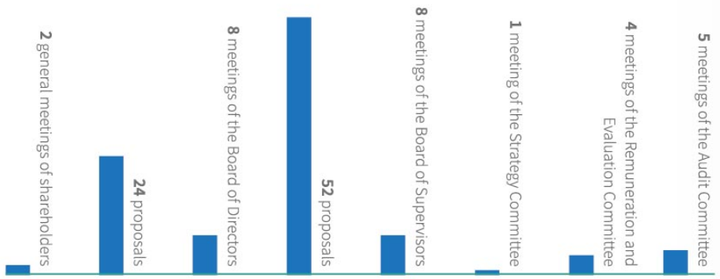
In accordance with the Company Law,
Securities Law, Code of Corporate Governance for Listed Companies and other laws,
regulations and normative documents,
Mingyang Smart Energy has been optimizing the corporate governance structure and
system to further clarify the responsibilities of power institutions, decision-making bodies,
supervision institutions and management to reach a balance,
thereby laying a solid foundation for the sustainable development for the Company.

Corporate Governance System



The Company has a standard and independent corporate government structure, of which the general meeting, Board of Directors, Board of Supervisors and Special Committees of the Board of Directors duly perform their duties on deliberating all major issues for the operation of the Company. Members of the Board of Directors have rich experience in management, and lay a great emphasis on the daily operation and management, financial position, major investment and financing and other matters of the Company, and carefully review all proposals considered by the Board of Directors, in a bid to make effective suggestions and proposals for the Company' s operation and development, and promote the sustainable, stable and healthy development of the Company' s production and operation.

In 2022, the Company convened 2 general meetings of shareholders, and deliberated and passed 24 proposals, including [Proposal on the 2021 Profit Distribution Plan, Proposal on the 2022 Daily Connected Transaction Quota Prediction of the Company, Proposal on the 2022 External Guarantee Amount Prediction of the Company, and Proposal on the Company's GDR Issuance and Listing Scheme on the London Stock Exchange]; convened 8 meetings of the Board of Directors, and deliberated and passed a total of 52 proposals; as well as convened 8 meetings of the Board of Supervisors, 1 meeting of the Strategy Committee, 4 meetings of the Remuneration and Evaluation Committee, and 5 meetings of the Audit Committee.



Risk Control

Mingyang Smart Energy formulated the Contract Management Guide, revised the Group Litigation Treatment Regulations and several long-term control systems, with an aim to ensure the Company operates in compliance with laws and regulations from the aspects of system formulation and control and dynamic management including initial information of risk management, risk assessment, risk management strategy, risk management supervision and improvement, and risk management organization improvement.

Risk control is composed of system control and special control.

System control: With the inspection on legal affairs as the main line and texts, systems and procedures as the grasp, through document review, questionnaires, interviews, etc., the Company conduct systematic diagnosis and inspection of the basic situation and operation procedures of each ministry of the Group, and complete risk identification, analysis and evaluation, including the completeness of system documents, the task achievement of responsible persons, and the standardization of project approval requirements.

Special control: For specific risk items or early warning: 1) formulation of risk prevention plans; 2) handling of risk events (including timeliness and effectiveness). The Company takes various measures to reduce the possibility of risk events, or restrain the possible losses within a certain range, in order to avoid the unbearable damages incurred by risk events.

Risk control training system

For risk control, the Company has designed a series of training courses and formed a training system, including:

About training on enterprise employment system: Enhance the training and risk tips against the signing of employment contracts in the human resources department, improve employees' legal awareness, protect their labor rights and interests, and complete online training such as "Employer's Right of Recourse" and "Legal Risks and Prevention in the Four Links before the Conclusion of Labor Contracts", as aimed at employees of the human resources department and front-line production employees.

About training on matters needing attention in sales contracts and risk prevention: By sorting out the risks existing in sales contracts, give tips on the legal risks that often occur in sales and project management, put forward countermeasures, and completes the online training of "Risk Identification and Prevention in Bidding and Sales Contracts" and "Contract Validity and Liability for Breach of Contract", as aimed at interested colleagues from the sales and project management departments; as well as complete the online course learning of "Legal Training on Contract Validity" within the department.

About training on legal risk prevention in winning contracts from the perspective of judicial judgment: By studying classic cases, draw lessons from the opinions of judges, combine the practice of bidding and contract signing in the process of contract performance, increase understanding of the Bidding Law, improve practical ability, complete the offline training of "Delivery Risk Case Seminar (with Qinghai Haiyan and Yuya Projects as Examples)", as well as conduct online training of "Risk Identification and Prevention in Bidding and Sales Contracts", as aimed at interested colleagues from the Legal Risk Control Department, the Bidding Department, the Contract Commerce Department and other departments.

And in addition, there are trainings such as "Legal Risks and Prevention of Trade Secret Protection System" and "Main Responsibilities of Safety Production of Enterprises in 18 Aspects".

Risk management system

Collection	Integrate the unfavorable factors of internal and external environment and combine the risk management performance and internal control evaluation results to find the vulnerable spots in management
Identification	Identify foreseeable risks in business activities, define risk assessment methods and conduct risk assessment
Analysis	Conduct a thorough analysis and evaluation of risks, check the effectiveness of existing risk management measures, identify major risks, and propose available countermeasures
Assessment	Conduct risk management evaluation according to the current risk management plan and form periodic and annual risk management evaluation reports
Prevention and control	Improve the management business process according to the comprehensive evaluation, and apply pre-job training for the managers of risk control

Internal Audit

In order to enhance the management and governance of the Company, the Audit Committee under the Board of Directors set up a permanent organization-Supervision and Audit Department to supervise, verify, evaluate and verify the economic activities of various departments and subsidiaries. The Company formulated the Internal Audit System, Internal Audit Reward and Punishment System, Internal Audit Problem Rectification Management System and other relevant procedures to regulate the internal audit of the Company and further implement and clarify the relationship among responsibilities, rights and interests for each post.

The internal audit team of the Company has the professional and business ability to engage in auditing. During the reporting period, the Supervision and Audit Department completed routine audits on annual economic benefits, wind farm operation and maintenance management and EPC project operation and management, and conducted a number of special audits including engineering, sales, infrastructure, operation and management. Through internal routine and special audit, the Company effectively regulated the key links of the Company' s operation and management from the long-term mechanism, while avoiding operational risks and reducing property losses.

Anti-Corruption Efforts

Mingyang Smart Energy formulated the Anti-fraud Management System, Discipline Inspection and Supervision Management System, and the Supervision and Audit Department is responsible for anti-corruption. In order to prevent corruption, improve and enhance the operation and management environment, considering the actual situation of the Company, the Supervision and Audit Department conducted joint inspections on key positions of various departments and subsidiaries of the Company from time to time. In the meantime, the Company also conducted anti-fraud investigation for all reports and complaints.

With a view to enabling all employees of the Company to fully participate in integrity construction, understand the importance of integrity risk prevention and control and prevent corruption, the Company has prepared the "Handbook of Integrity Risk Prevention and Control of Mingyang Group" on the basis of fully soliciting self-assessment results from subsidiaries and functional departments. The Handbook covers 11 key areas such as procurement, sales, engineering, technology research and development, and finance, effectively covering the key links prone to corruption during operation and management. Besides, the Company sets up suggestion boxes in the office area and information platform, arranges full-time personnel to accept registration, and takes effective protection measures for those who report and cooperate with the investigation.

Integrity risk level

According to the frequency and harm degree of integrity risk behaviors, the risk points are divided into three levels:

A (significant risk), B (relatively high risk) and C (general risk)

Key prevention and control areas

Procurement, sales, logistics, technology research and development, infrastructure, engineering, administrative logistics, finance, production, human resources and capital operation

Key prevention and control links

Decision-making power, execution power and supervision power

Integrity risk prevention and control

Three lines of defense:

Pre-prevention - Prevent ideological and moral risks, institutional mechanism risks and post responsibility risks

Mid-term monitoring - Dynamically monitor the conduct of leading cadres, the implementation of institutional mechanisms, the operation process of rights, etc.

Post-processing - Interview, warn and reminder, admonish to correct mistakes, order to rectify, and organize treatment

In 2022, the Company organized several online training sessions for management staff, and endeavored to strengthen the awareness of preventing integrity risks of management institutions and departments at all levels of the Company through lectures, case analysis, knowledge contest, integrity fun activities and participation in industry sharing sessions and other internal and external forms, thereby strengthening the ideological and moral and integrity of employees. In addition, we also set up complaint boxes in the office area and at the information work platform, arrange full-time staff in charge of registration, and take effective measures to protect those who make reports and cooperate with the investigation.

Complaint Hotline: +86-(0)760-28138838
Ernail: audit@mywind.com.cn
Address: Supervision and Audit Department of Mingyang Industrial Park, No.22 Huoji Road, Zhongshan Torch Hi-tech Industrial Development Zone, Zhongshan City, Guangdong Province

Investor Relations and Information Disclosure

The Company formulated the Management System of Investor Relations in accordance with the requirements of Shanghai Stock Exchange and CSRC, and earnestly implemented the requirements in the work related to investor relations, including the formulation of investor relation files and the training on investor relation regulations, which effectively maintained the legitimate rights and interests of investors, especially medium and small investors. During the reporting period, the Company continued to strengthen communication with investors and fully listened to investors' suggestions on the Company's development for continuously improving work quality of investor relations and further promoting investors 5 recognition of the Company's strategic positioning and development direction. The shareholding ratio of institutional investors in the Company has continuously increased through continuous and stable investor relations work. Overseas investors have also recognized the Company unanimously and the shareholding ratio of overseas investors is at the front rank in the same industry.

Care for shareholders

- In deliberating major issues that affect the interests of small and medium-sized investors, the general meetings count the votes for small and medium-sized investors separately;
- With full consideration of the return to investors in profit distribution, the Company distributes dividends to shareholders as per the prescribed proportion of distributable profits in the current year;
- And timely discloses the product profile, project progress and performance on the official website as an access to the Company's information in time for investors.

Response to investor's doubts

The Company actively response to the investors, questions through the hotline. In 2022, the Company responded to more than 1,400+ investors through the hotline and answered 240 questions through online, with a response rate of over 98%.

Information disclosure

With a great emphasis on information disclosure and investor relations management, the Company has been disclosing its information on China Securities Journal, Shanghai Securities News, Securities Daily, Securities Times and the website of Shanghai Stock Exchange in a truthful, accurate, timely, fair and complete manner to all investors, so as to increase the transparency of the Company and earnestly safeguard the legitimate rights and interests of the Company and all shareholders.

According to the Securities Law and the regulations of Shanghai Stock Exchange, a total of 124 announcements were disclosed in 2022, all of which met the requirements of Shanghai Stock Exchange. The Company successfully and effectively disclosed the annual reports, semi-annual reports, first quarterly reports and third quarterly reports, and properly solved the problems found in the reporting process.

In the meantime, the Company constantly improves the internal information disclosure system and corporate governance system, and urges relevant obligors to comply with the regulations on information disclosure, confidentiality of major information, and the registration of inside information. The Company lays stresses on the accuracy, legality, authenticity and completeness of information disclosure, timely controls and discloses as required the major information of each subsidiary/department.

Return to Shareholders

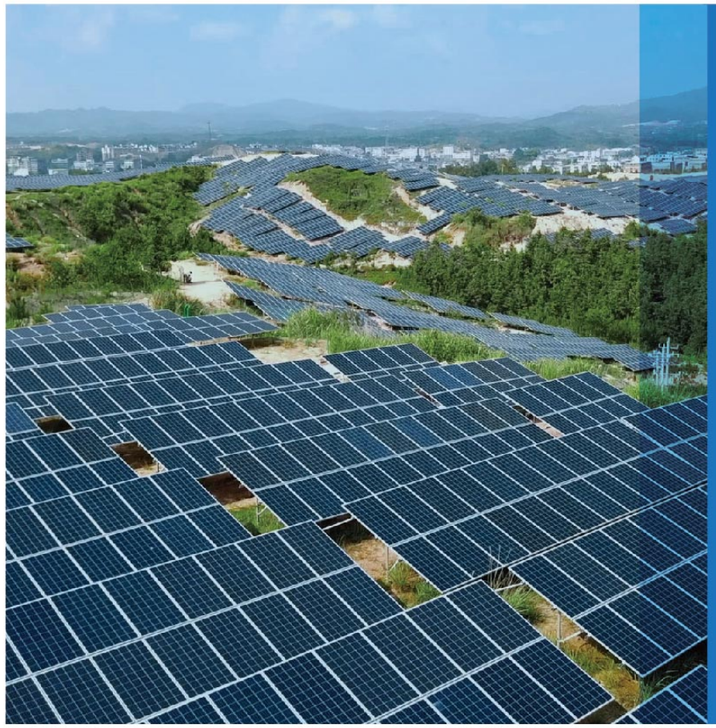
The Company has formulated a profit distribution policy that effectively safeguards shareholders' rights and clarified the principle and form of profit distribution, the specific conditions and proportion of cash dividends, the conditions of stock dividend distribution, the review procedures of profit distribution, and the adjustment mechanism of profit distribution policies: where cash dividends are available, the profits distributed in cash shall not be less than 10% of the distributable profits that can be realized in the current year. The relevant contents have been disclosed in the prospectus of the initial public offering.

The Company's profit distribution plan for 2022: the cash dividends of RMB 3.041 (tax inclusive) will be distributed to all shareholders by every 10 shares, with a total cash dividend of RMB 690.91 million. In 2022, the Company's cash dividends accounted for 20% of the realized net profit attributable to shareholders of the parent company. The balance of undistributed profits after distribution is carried forward to the next year.

In case of any change to the share capital of the Company after the Board of Directors and general meeting of the Company deliberates and approves the profit distribution plan and before the plan is implemented, the Company will adjust the distribution ratio in the principle of "fixed total cash dividends" based on the total share capital on the date of recording while implementing the distribution plan.

Operating results in 2022

In 2022, the Company realized basic eamings per share of RMB1.59/share.



Profit distribution plan for 2022

Cash dividends for every 10 shares

RMB **3.041** (including tax)

Cash dividends of

RMB **690.91** million

Operating results in 2022

Earnings per share of RMB **1.59**

Topic 1 | Party Building of Mingyang

The Party Committee of Mingyang, established in 2010, is the first Party committee for private enterprise in Zhongshan. It now has 3 general party branches, 24 party branches and 532 registered Party members, of which 59% are aged under 35, 67% are engaged in technical front line, and 89% hold bachelor degree or above.

In 2022, Mingyang Group always adheres to "four consciousnesses", strengthens "four self-confidences" and achieves "two maintenances". Guided by "listening to the Party's words, feeling the Party's grace, and following the Party", the Group, under the strong leadership of party committees at all levels such as Guangdong Province and Zhongshan City, implements the three "forces" put forward by Zhang Chuanwei, the Party Secretary and Chairman, for Party building, forms four mechanisms for Party building, and condenses and constructs a new Party building system of "1+3+4"

(wherein "1" is to take "listening to the Party's words, feeling the Party's grace, and following the Party" as the leading route; "3" means the three "driving forces" put forward by Zhang Chuanwei, the Party Secretary and Chairman, for Party building, namely ideological leadership, organizational cohesion and cultural leadership; and "4" is to strengthen the four mechanisms of Party building, namely the mechanism of selecting secretary, the mechanism of innovating in the education and management of party members, the mechanism of joint construction of Party building, and the mechanism of party-mass integration).

3	General party branches	532	Registered Party members	67%	Are engaged in technical front line
24	Party branches	59%	Are aged under 35	89%	Hold bachelor degree or above

I. Take the Party building on July 1 as an opportunity to consolidate the ideological construction of enterprise

1. Strengthen learning and constantly improve political understanding. Organize to watch the Party building promotional film posted by the Group, and tell the red stories of Mingyang through modern technology, so as to comprehensively show the Group's innovative development process, Party building results and summarized outlook under the guidance of Party building. Invite instructors from the Party School of Zhongshan Municipal Committee to give lectures, and give guidance to trainees on how to be a qualified Party member cadre, the struggle course of the Communist Party of China during the periods of reform and opening up and socialist modernization, and its enlightenment.

2. Solidly carry out the "July 1" series of activities. Hold the "July 1" celebration meeting with the theme of "Offering Gifts to the 20th National Congress of the Communist Party of China and Celebrating the 30th Anniversary of the Group". At the meeting, it was decided to set up 10 Party member tackling teams, including "Heavy Oil Pump Technical Reform and Cost Reduction Party Member Tackling Team of Huayang Changqing Party Branch", 10 Party member vanguards, including "Party Member Vanguard of Generator Product Technical Quality of the Fourth Party Branch of Wind Energy Research Institute", and 10 Party member commandos, including "High-quality Leaf Production Party Member Commando of Yangjiang Base Party Branch", giving full play to the role of fighting bastion of grass-roots party organizations and the vanguard and exemplary role of party members, and ensuring that key projects were led by party members, key positions were held by party members, and key moments were supported by party members.

3. Innovate the new online management mode of party members. Release the red cell party spirit cultivation cloud platform, which relies on Internet thinking to create a smart APP platform integrating Party building propaganda, Party member education, party affairs and Party building management, develop the red blood cell APP in combination with the fact that party members in the Group are widely distributed and scattered, and actively promote its landing.

4. Vigorously carry out practical activities on the theme of red education. Organize party members and cadres to Wugui Mountain for the party day activity themed quality development. Through the experience of Red Army meals and red theme quality development games, provide a driving force for trainees to boost their confidence and increase their strength, while enhancing the cohesion, centripetal force and combat effectiveness of the party organization, and encouraging them to devote to their work with firm willpower and resolute execution.

II. Focus on organizational construction and build a battle fort

1. Guide the Youth League Committee to adjust its organizational structure. In line with the requirements of the document released by Zhongshan Municipal Committee of the Communist Youth League, "Reminder Letter of the Second Quarter of the Three-year Action of Zhongshan Communist Youth League to Strengthen the Grass-root Construction and Improve the Organizational Power of the Youth League 'Lifeline Program 2.0'", and in combination with the actual situations of the Group, the optimization and adjustment of the overall organizational structure of the Youth League Committee and the Youth League Branch of the Group were guided. After that, there were 6 Youth League general branches and 37 Youth League branches remained.

2. Implement the secretary assessment mechanism. To thoroughly implement Xi Jinping's Thought on Socialism with Chinese Characteristics for a New Era and the spirit of the 20th National Congress of the Communist Party of China, implement the responsibility system for Party building, adhere to the clear orientation of "grasping grass-roots Party building" and "all work of the Party goes to branches", as well as comprehensively improve the organizational strength, cohesion and combat effectiveness of Party branches, the Group carries out debriefing evaluation of the Party (General) Branch Secretary every year, promotes the implementation of Party building work at all levels by combing work, identifying problems and strengthening responsibilities. In 2022, the Party General Branch of Wind Energy Research Institute won the "Demonstration Site of Party Building in Two New Organizations in Zhongshan".

III. Take Party building as the main line and empower the central work

1. The vast number of Party members are active and brave to be pioneers. In 2021, 105 Party member pioneer posts, Party member tackling teams and Party member commandos were set up in the frontline work of R&D, production, marketing, operation and maintenance. They insisted on innovation and made full use of the pioneering and exemplary role of Party members. Among them, the first Party branch of engineering service - the Party member tackling team for cost reduction and expense control of onshore engineering over-achieved the annual cost reduction and expense control of onshore engineering by RMB113.2 million, with a target achievement rate of 113.2%; the Party branch of Inner Mongolia Base - the Party member vanguard in reducing costs and controlling expenses during production and operation achieved a cost reduction of RMB10.928 million, with a target achievement rate of 175.37%.

2. Insist on publicizing excellent figures and learning from typical examples. 25 advanced models of Party member were interviewed, and a series of reports were released through the Group's OA and the WeChat official account of Mingyang Party Building. The third episode of "I Am a Communist Party Member", "Dedication: A Never-ending Offshore Wind Power Man", was broadcast on Zhongshan TV Public Channel, which showed the deeds of Comrade Bai Bin, Vice President of the Wind Energy Research Institute of the Group and Director of the Overall System Office, and further inspired the spirit of Party members, workers and the masses to start business.

3. Party co-building and strengthening cooperation on business. The Group has held Party co-building activities respectively with SPD Bank, Industrial Bank, China Construction Bank, Zhongshan Overseas Chinese Town and Tangshan Municipal People’ s Government and other units and promoted business exchanges through Party building activities, thus promoting the win-win interaction between Party building and business operation.

IV. Optimize the atmosphere within the organization with emphasis on group-related work.

1. Condolence for front-line employees. Related leaders of the Party Committee of the Group respectively led a team to investigate and survey and offer condolence and solutions for more than 20 engineering construction, production bases and engineering operation and maintenance areas, condoling a total of 1,398 people, in a bid to bolster their morale and strengthen their sense of belonging and identity.

2. Actively carry out popular cultural and sports activities. Led the Trade Union and the Youth League Committee to hold basketball, football, table tennis and badminton league matches, and carried out various activities such as youth fellowship and themed group building for more than 100 times, creating a favorable atmosphere. In 2022, the Youth League Committee of the Group won the title of "Provincial Non-public Youth League Construction Demonstration Organization" and "Guangdong May Fourth Red Flag Youth League Committee"; the Trade Union of the Group won the title of "National May First Labor Award" and "National Harmonious Labor Relations Establishment Demonstration Enterprise"; and the Group was elected as the "Guangdong Happy Enterprise Pilot Unit".

3. Volunteer service helps to build civilization. So far, there are nearly 300 registered volunteers in the Group, who organized the "Green River" river protection volunteer activity and the "Warm Helper" public welfare activity, visited the lonely elderly, and conducted home appliance services throughout the year. In 2022, over 80 people from the Group actively participated in blood donation, totally donating 26,300 ml.

Initiative · Partner Responsibility

Customer Responsibilities

The main strategic customers of the Company include CGNPC, China Three Gorges Corporation, China Huaneng Group, China Power Investment Corporation, Datang, China Huadian Corporation and other large state-owned power groups. Over 2022, the Company won the bids for 18.65 million kW orders.

Mingyang continuously improves customer satisfaction by providing high-quality pre-sales, in-sales and post-sale services.

Quality pre-sales services

1) Assist in selecting products and strengthening technical exchanges according to customer purposes;
2) Help customers choose the best order scheme, improve the availability of wind turbines and reduce customer costs;
3) Strengthen pre-sales technical exchanges and adopt reasonable and advanced technical standards at home and abroad based on different needs of customers;
4) Become the first to pass the low voltage ride-through test and power quality certification in China to meet the needs of customers.

Quality in-sales services

1) Strengthen production organization management, process technology management and product quality management;
2) Strengthen communication with customers, keep abreast of changes in customer demands, and make corresponding adjustments in time;
3) Give fast feedback of production progress through SAP system, and timely deliver project progress information to customers.

Quality post-sales services

1) Formulate the Project Site Quality Management Manual to clearly define specific contents of the site quality accident handling mechanism;
2) Timely track and understand the results of product quality inspection and the use by customers;
3) Establish customer files, issue questionnaires, pay attention to new customer demands, and maintain close cooperation between both parties; and
4) Provide technical support and relevant training services to customers.

Suppliers' Responsibilities

In the supply chain construction and management, we strictly implement the rules like Supply Chain Development and Capacity Building Procedures, Procurement and Supply Chain Capacity Management Procedures, Corporate Social Responsibility Statement and Letter of Commitment, Supplier Access Operation Guidelines, Management Measures of Supplier Performance Evaluation, and Supplier Quality Assurance Manual, and require suppliers to develop with the Company and regulate their operations. We advocate and encourage our partners, peers and other organizations to work together with the Company to create inclusive and low-cost clean energy, transform natural energy into a new method of development that is shared and produced by the people to drive the progress of human civilization and benefit the people. We also urge and promote enterprises on downstream supply chain to operate in compliance with regulations towards a high quality in production, manufacturing, transportation, construction and after-sales.

In order to improve suppliers' awareness of corporate social responsibility, according to the social responsibility principles and policies of Mingyang Smart Energy, suppliers are required to conduct self-inspection according to this principle and requirements from the aspects of business ethics, worker, health and safety, environment and supplier social responsibility management, so as to establish a healthy and benign supply chain. The Company also requires suppliers to comply with relevant international, state and local laws and regulations.

The Company encourages and guides suppliers to operate in full compliance with procurement guidelines for self-inspection or supplementary certification. The suppliers listed in annual audit for failure to meet the requirements on environmental and occupational health must prepare improvement plans within a time limit and take corresponding actions.

The Suppliers of the Company are required to make the following commitments to fulfill responsibilities under SA8000:

1. Comply with all requirements under SA8000 and local labor laws and regulations:
   - It is prohibited to use any child and forced labor and accept any supplier or subcontractor using child or forced labor.
   - It is required to respect workers' freedom and avoid any form of forced labor.
   - It is required to create safe and healthy working and living conditions for employees.
   - It is required to promote labor-management cooperation and safeguard employees' freedom of association and collective bargaining.
   - It is required to provide an equal and fair working environment without any form of discrimination.
   - It is required to respect the basic human rights of employees and avoid any form of degrading the dignity of employees.
   - It is required to make reasonable arrangement on production plans, working hours and rest and vacation for employees.
   - It is required to provide reasonable wages and benefits to meet at least the basic needs and minimum wage standard for employees.
   - It is required to comply with applicable laws, regulations and standards on environmental protection, and abide by local practices on environmental administration.
   - It is required to maintain plant safety procedures to prevent unauthorized shipments (e.g. drugs, dangerous goods or explosives, biological and other contraband).
2. Accept and actively assist in the on-site audit of social responsibilities, and provide the required information truthfully and completely.
3. Take corrective and remedial measures in time for any nonconformities in violation of SA8000 standards.

1

In 2022, in the process of supply chain construction and management, strictly implement such rules as "Supply Chain Development and Capacity Building Procedure", "Procurement and Supply Chain Capacity Management Procedure", "Corporate Social Responsibility Statement and Letter of Commitment", "Supplier Access Operation Guidelines", "Supplier Performance Evaluation Management Method" and "Supplier Quality Assurance Manual", and require suppliers to develop synchronously and standardize their operations with Mingyang Smart Energy Group Co., Ltd. Advocate and encourage cooperative institutions, peers and other organizations to work together with Mingyang Smart Energy Group Co., Ltd. to create the clean energy with inclusive and low prices, and transform natural energy into a new way for human enjoyment, production and sharing by the whole people, so as to promote the progress of human civilization and benefit the people. Urge and promote downstream supply chain enterprises to operate legally with high quality in terms of production, manufacturing, transportation, construction and after-sales.

2

In 2022, explicitly require all the developed suppliers to pass and obtain ISO9001 or IATF16949, ISO14001, ISO18001 and other management system certifications, and encourage suppliers to implement and pass SA8000 social responsibility management system certification. Strictly implement the requirements for management system and physical quality control, and implement import according to the review results of supplier access, so as to select the suppliers with stable and reliable quality, and do a good job in quality control of parts from the source.

3

Implant green genes and concepts into every link of product design, manufacturing, sales, operation and maintenance. Encourage suppliers to implement the ISO140001 standard and pass the third-party certification of ISO140001.

1) There are 112 parts suppliers in total, 88 of which have obtained ISO14001 environmental management system certification, and 78.57% of which have passed ISO14001 environmental management system certification.

2) The existing cooperative suppliers are all very normative and renowned leading enterprises in the industry, and there have been no cases of violating environmental protection laws and regulations such as illegal discharge and pollution.

3) Vigorously publicize the concept of green environmental protection to suppliers: To be a global leader in smart and inclusive clean energy.

4

Hold or assist in cooperation and exchanges, supplier conferences, etc. including the cooperation and construction of new energy industry chain from time to time. Assistance cooperative suppliers, advocate synchronous innovation and healthy development between suppliers and Mingyang Smart Energy Group Co., Ltd., and jointly complete the "double carbon" goal, "double control" task and high-quality development in the 14th Five-Year Plan.

Topic 2 | The Three-Dimensional Integration and Development of Marine Energy Helps Green and Low-Carbon Development of Marine Economy

The ocean is of great significance to the survival and development of human society, and has always been the object that human beings yearn for and conquer most. From Zheng He's voyages to the West to the development and exploration of the ocean by modern science and technology, human beings have never stopped exploring the sea.

On April 10, 2022, General Secretary Xi Jinping mentioned the importance of ocean construction during his visit to Hainan, and that building a strong ocean state is a major strategic task to achieve the great rejuvenation of the Chinese nation. It is necessary to promote marine science and technology to achieve a high level of self-reliance, strengthen original and leading scientific and technological breakthroughs, firmly grasp equipment manufacturing in our own hands, as well as strive to develop oil and gas resources with our own equipment, improve energy self-sufficiency rate and ensure national energy security.

Offshore wind power contains unlimited green energy, and can effectively reduce carbon emissions during operation. Compared with onshore wind power, offshore wind power is also an "emerging field" of wind power technology, and its difficulty is comparable to that of "lunar exploration project". China's offshore wind power started from the "12th Five-Year Plan", achieved the first round of high-speed leap-forward development in the "13th Five-Year Plan", and entered a magnificent new era of unsubsidized and high-quality innovation and development in an all-round way in the "14th Five-Year Plan", as embodied by that: The first is to comprehensively promote localization and large-scale, the second is to march into the deep sea from fixed to floating type and from "double 10" to "double 100", and the third is to develop from offshore wind power to hydrogen production from seawater and marine pasture, and to the high-quality integrated development of marine energy and marine economy.

5MW-16MW

MW offshore wind turbine

Above **5MW**

floating offshore wind turbine

As one of the Top 500 Chinese Enterprises and a leader in offshore wind power enterprises, since its establishment, Mingyang has always insisted on high-end equipment and independent innovation. It has overcome the worldwide technical problems of offshore wind power development in many violent typhoon zones with independent innovation. It has launched the largest semi-direct drive typhoon-resistant large-scale offshore wind turbine in the world with 5-16 MW and independent intellectual property rights with the advanced concept of life cycle management. It has developed floating foundations and innovative floating wind turbine islands suitable for deep water zones, forming a product line of offshore wind power which can adapt to various wind conditions in the world. Flexible DC delivery system and device on deep and remote sea successfully passed the appraisal for national products. The 3D development scheme of hydrogen production by seawater and marine pasture has entered the practical application stage. This has realized the efficient, economical, safe and large-scale development of offshore wind power. It has realized the comprehensive construction of three-dimensional economy from “Double 10" to “Double 100” of energy sources in deep and remote sea, contributing Mingyang’ s wisdom and strength to human’ s exploration of the ocean.

It transforms from joining hands with the Three Gorges to take the lead in realizing the grid-connected power generation of the world's first anti-typhoon floating offshore wind turbine with a capacity over 5MW, to launching the world's largest offshore wind turbine with a monomer capacity of 16MW and the world's first three-dimensional integration and development project of offshore wind power, hydrogen production from seawater and marine pasture.

On January 19	On September 29	On November 30
Mingyang Group Guangdong Yangjiang Shapai Deep-sea Fishery and Culture Experimental Zone completed its first harvest of fish, which was the successful innovative practice of China's first "offshore wind power + marine pasture" demonstration zone, creating a precedent for the world's far-reaching anti-typhoon aquaculture in the sea and leading the three-dimensional integration and development of China's marine energy and the high-quality development of marine economy.	Mingyang officially released to the world a new generation of scientific and technological innovation product called "OceanX" (in Chinese: Blue Dynamic) dual-rotor floating offshore wind power platform. As an epoch-making and landmark product of Mingyang's marine strategy, it is also a leapfrog breakthrough in the field of offshore wind power. "OceanX" has created a new scene for the development of far-reaching offshore wind energy resources and opened a new imagination space for the development of global offshore wind power.	The oriental CZ9 offshore wind farm demonstration project of Mingyang Group commenced, which was the first three-dimensional development demonstration project of marine energy in Hainan. And it will be built into a three-dimensional marine energy innovation and development demonstration project of "offshore wind power + marine pasture + hydrogen production from seawater" in the era of non-subsidy, and made into the leading domestic and the first affordable offshore wind power demonstration benchmark in Hainan Province. Mingyang breaks through a number of core technologies, possesses completely independent intellectual property rights, and can withstand typhoons up to Magnitude 18 at the maximum, constituting a major breakthrough in the independent design and research of fishery and aquaculture equipment in the far-reaching sea in China. The innovative breakthroughs of Mingyang in high-end equipment technology have pushed China's marine fishery to go deeper and farther, and have become a powerful engine to ignite the ocean.

The essence of new energy lies in creation and innovation, while promoting offshore wind power to the far-reaching sea. Mingyang adheres to scientific and technological innovation, focuses on the high-end manufacturing of wind, light, storage and hydrogen matrix equipment, the flexible DC transmission technology and the localization of core components, actively develops the three-dimensional new integration and development business forms of marine energy, integrates and innovates the advantages of the world's leading technology chain, industry chains and marine ecological resources, leads the new mode of large-scale and cluster construction in the deep sea, makes every effort to build a high-end equipment industrial cluster of marine clean energy, provides marine clean energy for coastal areas, as well as assists in the green, low-carbon and high-quality development of marine economy.

Mingyang takes practical actions to implement the national dual-carbon strategy and green development concept, fully promotes the high-end technology, application scenario and industrial ecology of new energy equipment, innovates in leading the three-dimensional integration and development of hydrogen production from seawater and marine pasture based on offshore wind farms, and promotes the construction of an offshore high-end equipment industrial cluster and a world-class technological innovation platform for marine economy, so as to contribute wisdom and strength to the high-quality development of China's marine economy, walk to the innovative road of ecological priority and green development, and accelerate the construction of a new power system with new energy as the mainstay..

Initiative · Products and Services

Over the years, Mingyang has firmly followed the path of green development and ecological priority, and has firmly become the leader and main force of energy conservation and emission reduction, with a cumulative global installed capacity of over 39.575 GW and generating environmental benefits equivalent to an annual reduction of 55.430 million tons of carbon dioxide emissions.

We embed green DNA and concept in everything from our product design, manufacturing, sales to O&M. Targeting the construction of green and smart wind farms, we provide innovation in energy services and management models, based on big data and blockchain, toward the connectivity and efficient utilization of green energy. We bring the concept of green value to customers, owners and the whole of society, and together with our suppliers we are building a green ecological supply chain and fulfilling the responsibility and mission of supporting and protecting the environment.

Innovative R&D


Onshore wind turbine


Offshore wind turbine


Deep sea wind turbine

Innovative R&D layout

Zhang Chuanwei, Chairman of the Board of Directors, pointed out: "Looking at the future of renewable energy, its development is ultimately inseparable from innovation. On the one hand, through technological innovation, we will promote the smart and high-quality development of clean energy; and on the other hand, through model innovation, we will further reduce the cost of new energy application and benefit the people at a lower price". In 2022, Mingyang always adheres to technology-oriented, takes innovation as the first driving force for development, and drives technological development with innovation. Centering on the three aspects of complete-machine product research and development, technological innovation research and R&D infrastructure construction, it actively applies technological innovation, and implements innovative technologies into practical manufacturing and applications, thus highlighting the hard strengths of Mingyang in innovative R&D.

In 2022, in terms of complete-machine product research and development, Mingyang closely focuses on the goal of "two highs and one low" to adapt to high power generation, high availability and low power cost. From customized and personalized products and services to overall solutions in the whole life cycle, it presents the researched and developed products including more than 20 models from 1.XMW to 16MW, covering various land, offshore and far-reaching sea products. At the beginning of the year, Mingyang Group Guangdong Yangjiang Shapai Deep-sea Fishery and Culture Experimental Zone completed its first harvest of fish, which marked the successful innovative practice of China's first "offshore wind power + marine pasture" demonstration zone, creating a precedent for the world's far-reaching anti-typhoon aquaculture in the sea. In the middle of the year, the MySE6.X-193/200 unit, the world's largest onshore wind turbine as independently developed by Mingyang, was successfully launched at Turpan Base. So far, it has been delivered in batches in the three north areas. The unit is developed with the new three-point support double-feed technology route, taking full account of the characteristics of wind resources in the desert, gobi and wasteland, while considering the demand for extreme cost reduction. At the end of the year, the OceanX dual-rotor prototype was successfully launched at Yangjiang Base. OceanX is a strategic product for deep sea development. Relying on many technological innovations such as structure, new materials and artificial intelligence, it is deeply polished from reliability to economy, aiming at showing the world that the deep blue heavy equipment is made by Mingyang.

In terms of technological innovation and research and development, the innovation capability extends to new materials, new structures, new processes and digitalization; and based on the same, it has successively conquered a series of major key technologies such as new materials and new processes of carbon fiber pultrusion plates for blades, innovative technologies of concrete prefabricated slabs, new mechanical transmission system designs, marine energy and marine engineering system technologies, smart and digital innovative applications, and smart control and monitoring and fault identification and diagnosis of wind turbines.

In terms of R&D infrastructure construction, it is planned to build a marine energy detection and testing center. In 2022, the scheme design and key preparatory work have been completed; and it is planned to be put into use in 2023 to ensure the aerospace-level quality and reliability of wind turbines.

To strengthen the leadership and management of the Company's scientific and technological work, and make the Company develop towards a scientific and standardized direction, the Company has formulated a series of innovative management systems such as "Code for the Management of Research and Development Projects", "Measures for the Management of Technical Experts Database", "Measures for the Management of Research and Development Awards", "Measures for the Management of Patents", "Measures for the Management of Papers", "Rules for the Management of Technological Innovation", "Rules of Procedure of the Innovation Committee", "Measures for the Management of Technical Standards", "Control Procedures for New Product Development" and "Control Procedures for Technological Changes"; and based on the above management systems, the Company has also formulated the processes such as "Technical Standard Processes", "R&D Patent Application", "Paper Publication Approval", "R&D Technological Innovation Application", "Technology Innovation Scheme Project Approval Form", "Technology Change Processes" and "R&D Project Management WBS", so as to better support the implementation of such management systems.


OceanX double-rotor wind turbine


Offshore wind power + marine ranching


Offshore wind power + marine ranching

General situation and quantity statistics of R&D projects

By the end of 2022, the Company has carried out 96 R&D projects in total, including 27 complete machine R&D projects, 28 key parts R&D projects and 40 technical innovation projects, covering more than 20 R&D models from 1.XMW to 16MW and the R&D of various onshore and offshore products, demonstrating its strong R&D and innovation capabilities.

27 complete machine R&D projects

28 key parts R&D projects

40 technical innovation projects

Line label	Complete Machine R&D	Component R&D	Technology R&D	Others	Total	Proportion
Major projects	17	13	4	/	34	35.40%
Key projects	10	10	19	/	39	40.60%
General projects	/	5	17	1	23	24.00%
Total	27	28	40	1	96	100.00%
Proportion	28.10%	29.20%	41.70%	1.00%	100.00%	

Technological or R&D input

The Company plans for the collaborative innovation of products and the industrial chain guided by a “global view of the industrial chain”, allowing for the extension of its innovation capability to the whole value chain of new materials, new components, new devices and new solutions, and bringing leading technologies and product lines, both offshore and onshore.

In 2022, the Company invested RMB 1.098 billion in R&D (capitalized R&D expenditures included), accounting for 3.57% of operating revenues, or a level above the industry average. At the same time, Mingyang Smart Energy continued to focus on the introduction and training of high-caliber R&D personnel at home and abroad, and through hands-on practice, it has gathered, trained and tested a large number of inter-disciplinary talents with rich practical experience who have systematically mastered wind power theory. At present, there are 2,088 R&D persons and a technical team consisting of 13 doctors, 316 masters and 790 undergraduates. The R&D team comprises 33 chief engineers, 76 deputy chief engineers and 122 engineers in charge.

Characteristic R&D projects

Among the list of best wind turbines in the world as announced, Mingyang wind turbines ranked first!

In January, WindpowerMonthly, an international authoritative wind power industry magazine, announced the selection results of the world's best wind turbines in 2021. The MySE4.0-166 model of Mingyang Smart Energy ranked first in the world in the list of "the best onshore wind turbines in the world (4.6 MW and below)", becoming the only Chinese wind turbine topping the list; its MySE 6.25-182 model ranked third in the world and second in Asia in the list of "the best onshore wind turbines in the world (4.7 MW and above); and its semi-direct-drive transmission system of offshore MySE16MW wind turbine and MySE16-118A1 wind turbine blades were selected among "the best transmission system in the world" and "the best blade in the world" respectively, ranking second in the world and first in Asia, which made Mingyang the only Chinese complete machine manufacturer in such two lists.

The world's largest anti-typhoon semi-direct-drive MySE12MW offshore unit successfully went offline

On June 1, the world's largest anti-typhoon semi-direct-drive MySE12MW offshore unit successfully went offline at the Shanwei Base of Mingyang! The unit was customized and designed for domestic typhoon regions (including Guangdong, Fujian and other offshore regions) and overseas markets such as Europe, featuring higher safety and reliability, stronger wind resistance, better power generation efficiency and better economy.

The 160m super-high steel-concrete tower was successfully hoisted

On August 10, the 160m super-high steel-concrete tower as independently developed and designed by Mingyang Smart Energy was successfully hoisted in the Lingbi Lingbei Wind Power Project in Anhui Province. The successful hoisting of the first unit marked that the smart large-capacity and ultra-high mixing tower products of Mingyang have officially entered the stage of mass commercial operation.

The 10kW and 60kW small wind turbines based on the needs of comprehensive smart energy scenarios successfully went offline

Based on the needs of comprehensive smart energy scenarios, the 10kW and 60kW small wind turbines have been successfully rolled off the production line at Yangjiang Base, which was highly in line with the "Wind Control Plan for Thousands of Townships and Ten Thousands of Villages" put forward by the National Energy Administration, realizing its technical reserves in small wind turbine equipment.

The Innovation Team of Large MW Smart Wind Turbine of Mingyang Wind Energy Research Institute won the "Outstanding Contribution Team among Zhongshan Enterprises" in 2021

On September 7, the Leading Group for Talent Work of Zhongshan Municipal Party Committee unveiled the "2022 Talents Cherishing Monthly" at Zhongshan International Talents Station in Cuiheng New District. In the meantime, the launching ceremony of Zhongshan International Talents Station was held, and honors were awarded to outstanding talents (teams) among enterprises in 2021. The innovation team of large MW smart wind turbine of Mingyang Wind Energy Research Institute won the "Outstanding Contribution Team among Zhongshan Enterprises" in 2021.

The double-rotor anti-typhoon floating wind turbine with the largest capacity and lightest weight in the world went offline

On September 29, Mingyang officially released to the world a new generation of scientific and technological innovation product called "OceanX" (in Chinese: Blue Dynamic) dual-rotor floating offshore wind power platform. It is the largest and lightest dual-rotor anti-typhoon floating wind turbine in the world that can be applied to a wide range of global sea areas with a water depth above 35 meters. Currently, the full-size products of the platform have been developed by Mingyang Smart Energy, and will be installed in the South China Sea waters at the end of 2022 or in the beginning of 2023. Meanwhile, Mingyang is also promoting the landing of "OceanX" application scenarios in lots of regions across the world, so that smart energy can benefit the whole world.

The world's largest offshore anti-typhoon 7MW floating wind turbine and 10MW offshore large wind turbine went offline

On November 30, MySE7.25-158, the world's first 7MW anti-typhoon floating wind turbine, was officially launched. The unit was customized for the far-reaching sea environment and adopted the world's leading semi-direct-drive, anti-typhoon and floating technology, which could withstand up to Magnitude 17 typhoon and cope with complex ocean currents and waves.

The first 10 MW offshore large MW wind turbine generator set "manufactured" in Hainan also went offline synchronously.

The world's largest and longest offshore anti-typhoon blade (MySE260) successfully went offline

On December 11, the world's largest and longest offshore anti-typhoon blade (MySE260) was officially launched at Guangdong Shanwei Marine Energy Equipment Smart Manufacturing Center under Mingyang Smart Energy. The MySE260 impeller has a diameter up to 260 meters and a blade sweeping area up to about 53,092 square meters. Benefiting from the application of carbon fiber materials, the blade partition design, the modular manufacturing and the "aeroelastic cutting" technology, the MySE260 blade has the characteristics of lightweight and high performance, coming with safer structure, more reliable quality, more stable operation and excellent anti-typhoon property.

The R&D and Innovation Team of Wind Energy Research Institute won the first prize of "Innovation Zhongshan" scientific progress in 2022

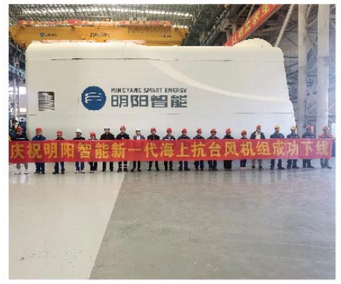
On December 14, the 2022 "Innovation Zhongshan" Science and Technology Award Ceremony was successfully held in Zhongshan. The project as led by the Innovation Team of Wind Energy Research Institute, i.e. the key technology R&D and large-scale application of ultra-compact, efficient and smart offshore wind turbines won the first prize for scientific progress.

The MySE7.15-216 onshore super-large wind turbine was successfully launched, and a new generation of onshore large MW wind turbine - the MySE8.5-216 model was released

On December 29, the MySE7.15-216 onshore super-large wind turbine as independently developed by the Company was successfully launched, and a new generation of onshore MW wind turbine - the MySE8.5-216 model was released. Both models were flagship models for desert, gobi and wasteland-type wind power bases, which would help the adjustment and transformation of energy structure in the desert, gobi and wasteland area and across the whole country.

16.X, the world's largest product platform which could cover both floating and fixed scenarios, was successfully launched.

16.X, the world's largest product platform that can cover both floating and fixed scenarios, has been successfully launched at Shanwei Base of Mingyang. The maximum power of the unit could cover 18.X, and the platform could carry different wind wheel diameters, thus bringing more possibilities for exploring the deep sea.



Intellectual property protection

Since the establishment, we value invention and creation, underpin the combination of technological innovation and independent intellectual property rights, lay emphasis on the scientific management and strategic application of intellectual property rights and the protection of intellectual property rights, and enhance the enthusiasm of employees for invention and creation. In accordance with the Patent Law of the People's Republic of China, the Rules for Implementation of the Patent Law of the People's Republic of China and other relevant laws and regulations, proceeding from the actual situation, we have formulated intellectual property management measures, covering the fundamental management of intellectual property rights, intellectual property-related resource management, every stage of intellectual property-related production and operations, the operational control of intellectual property rights, the management of intellectual property-related documents and contracts and more, and developed the Patent Management Measures, the Management Practices for R&D Projects, the Thesis Management Measures, and the Rules for Technological Innovation Management, among others. In terms of intellectual property reward system, it is stipulated that the inventor (designer) will be rewarded according to the relevant reward measures after the intellectual property application has obtained the certificate so as to encourage invention and creation.

The Company attaches great importance to the protection of intellectual property rights, actively carries out special training on intellectual property rights and training on intellectual property management system, strengthens patent application and protection, and regularly improves the management system of intellectual property rights according to the actual research and development, so that the Company's intellectual property management is closely integrated with its daily scientific and technological innovation. In the meantime, with a view to better improving and enhancing the Company's intellectual property management, the national standard of "Enterprise Intellectual Property Management Regulations" (GB/T 29490-2-13) as implemented since July 2022 protect the Company's intellectual property rights in an all-round way from R&D, production, sales and finance.

Leaders of the Company attach great importance to intellectual property management, and set up a dedicated department and full-time personnel. Combined with development needs, the intellectual property management department is set up under the technical management department of the Wind Energy Research Institute and assigned with full-time intellectual property management engineers.

Scientific payoffs

Statistics on the number of innovative R&D projects

The Company' s Cumulative Number (Including Data in Previous Years)	Design Patent	Patent for Utility Models	Patent for Invention	Copyrights
Number (accepted + authorized)	30	1,011	687	182

Statistics on the number of intellectual property rights

1,732 Patent/ 2022
1,316 Patent/ 2021
Cumulative number of patents applied for domestically

688 Patent/ 2022
514 Patent/ 2021
Cumulative number of utility patents applied for domestically

8 Patent/ 2022
1 Patent/ 2021
Cumulative number of patents applied for overseas

1 Patent/ 2022
1 Patent/ 2021
Cumulative number of patents granted overseas

205 Standard/ 2022
163 Standard/ 2021
Domestic standards the Company participated in formulating

19 Standard/ 2022
17 Standard/ 2021
International standards the Company participated in formulating

238 Copyright/ 2022
311 Copyright/ 2021
Cumulative number of copyrights

The impact brought by product research and development

In 2022, Mingyang maintained its first-mover advantages in respect of semi-direct-drive technology, high-power unit technology, floating wind turbine technology, unit anti-typhoon technology and super-large blade technology, and always adhered to independent innovation and unlimited initiative, creating multiple firsts and breaking records for many times.

In January, according to the selection results in the list of "The World's TOP Best Wind Turbines in 2021" announced by WindpowerMonthly, the MySE4.0-166 model of Mingyang ranked first in the world in the list of "the best onshore wind turbines in the world (4.6 MW and below)", becoming the only Chinese wind turbine topping the list; its MySE 6.25-182 model ranked third in the world and second in Asia in the list of "the best onshore wind turbines in the world (4.7 MW and above); and its semi-direct-drive transmission system of offshore MySE16MW wind turbine and MySE16-118A1 wind turbine blades were selected among "the best transmission system in the world" and "the best blade in the world" respectively, ranking second in the world and first in Asia, which made Mingyang the only Chinese complete machine manufacturer in such two lists.

In August, the typhoon called "Saddle" hit. Facing its strong attack, Mingyang wind turbines continued to maintain excellent anti-typhoon performance, and all wind turbines passed the typhoon period smoothly, ensuring safety and reliability of the owners' wind farms and firmly standing in the position of "first brand" of anti-typhoon wind turbines in the industry.

In September, China Electricity Council held the "2022 Wind Power Operation Management and Industrial Development Innovation Exchange Seminar and Power Industry (16th) Wind Power Operation Index Conference", at which the "2021 National Wind Farm Production and Operation Index Benchmarking and Evaluation Results" was announced. In this selection, Mingyang won the honor of "Best Unit Availability Award" for its intensive cultivation in the field of wind power, good project operation data and excellent performance and reliability of its own units.

In November, the three MySE3.0-135 offshore wind turbines provided by Mingyang for the Nyuzen Offshore Wind Power Project in Japan have been assessed and certified by ClassNK (Japan Classification Society), which meant that Mingyang offshore wind turbines had met the mandatory technical standards for wind turbines as approved by the Japanese government for the construction of offshore wind power projects, which also meant that Mingyang has become the first Chinese wind turbine manufacturer to obtain such certification.

In December, the world's largest and longest offshore anti-typhoon blade (MySE260) was officially launched at Guangdong Shanwei Marine Energy Equipment Smart Manufacturing Center under Mingyang. This was the record that Mingyang refreshed the length of wind turbine blade again in less than half a year after it released the assembly line on June 24 this year, when it was the longest anti-typhoon blade in Asia.

Smart Energy Business

Mingyang creates traction demands with smart energy application scenarios, promotes high-end new energy technologies, application scenarios and industrial ecologicalization, builds a new industrial ecology with integration of industrial forms, adheres to “low carbon, low price and low energy consumption”, and explores the application scenarios and realization paths of new power systems with new energy as the main body.

1. Fire, wind, light, storage, manufacturing and research integration project

The first "fire, wind, light, storage, manufacturing and research" project in China was connected to the grid

On September 2, Phase I of the First Integrated Demonstration Project of "Fire, Wind, Light, Storage, Manufacturing and Research" of Mingyang - Kailu County 600MW Wind Power + 115MW/345MWh Energy Storage Facilities was officially put into grid operation. This project of Mingyang Group was not only the first wind storage joint demonstration project with the largest single capacity, but also the new energy project with the largest single capacity of energy storage facilities in the eastern Inner Mongolia and even the Northeast China, and also the first in China to carry out customized wind turbine application demonstration, large-scale power grid peak-regulating and energy storage demonstration, as well as non-subsidized wind power preferential pricing and energy storage compensation mechanism demonstration.

2. The "Action of Sending Support to Thousands of Townships and Ten Thousands of Villages" to help rural revitalization

On September 29, the pilot project of "Action of Sending Support to Thousands of Townships and Ten Thousands of Villages", with Mingyang Group as the main investment and construction entity, was launched in Huaibin County, Henan Province, which was the first one to implement rural revitalization and take the lead in preparing implementation plans and starting construction in the country. After its completion, Huaibin County will become the first county with wind power coverage in villages, which can provide about 4.3 billion kWh of clean energy and save 1.51 million tons of standard coal per year, as well as innovate the wind power investment and construction model and the land use mechanism, activate the stocked collective land in rural areas to be priced into shares and achieve share profits, increase the collective economic income by more than RMB17 million per year, realize the annual tax revenue of RMB150 million, provide employment positions, and truly make the people's increase income guaranteed and the rural revitalization powerful.

3. Innovative strategic cooperation

The zero outsourced power will promote the carbon peak in the industrial field, and build a benchmark of zero carbon park.

In November, Runyang Energy, a subsidiary of Mingyang Smart Energy, and Tangshan Jidong Qixin Cement Co., Ltd. (hereinafter referred to as Jidong Qixin), etc. jointly applied for the "Research and Development and Application Demonstration of 'Zero Outsourced Power' Complete Technology in the Cement Industry" Project, which was focused on by the Industry Division of the National Development and Reform Commission, reviewed and approved by the China Building Materials Federation, and officially commenced. In the future, Mingyang will build green and low-carbon production methods and large-scale clean energy innovation and transformation samples in 75 factories of Jidong Qixin, and create innovative demonstration projects of clean energy application in terms of cement production. Utilizing the advantageous resources of both sides, Mingyang will build distributed clean energy projects based on cement enterprises and jointly create the integrated energy application demonstration projects of zero outsourced power plant and zero carbon park.

As a national demonstration project of carbon reduction in the cement industry, this project is a concrete action to fulfill the "Implementation Plan of Carbon Peak in the Industrial Field", which will strongly support the building materials industry in China to establish and improve the green low-carbon circular development economic system, and is of great significance to lead the building materials industry in China to achieve high-quality development.

Quality Management

Centering on the Company's "1263" strategic layout, three-year spanning development goal and 30-year gift project, the quality work is planned and deployed in detail, and the strategic goal for 2022 is formulated as: "Strictly control quality risks, severely grasp product quality and improve comprehensive quality level". Guided by the quality management model of Mingyang of "3 sides, 4 entireties and 5 steps", the business front ground, middle ground and background of the Company are closely and effectively linked and managed to achieve standardization, normalization, refinement and full process of Mingyang's quality management. In 2022, the competition in the wind power host market has become fierce in terms of price, technology, resources, capacity and other aspects, and the achievement of quality strategic objectives will be achieved by strengthening quality control in the whole process.

Quality management system based on "doing the right thing at one time"

"Contract risk → product delivery" end-to-end project quality control

"Risk identification ahead and one-time-right achievement" R&D quality control

"Full quantity and full size" manufacturing quality management

"Zero defect" supply chain quality control

"Double closed-loop problem management mechanism" operation and maintenance quality control

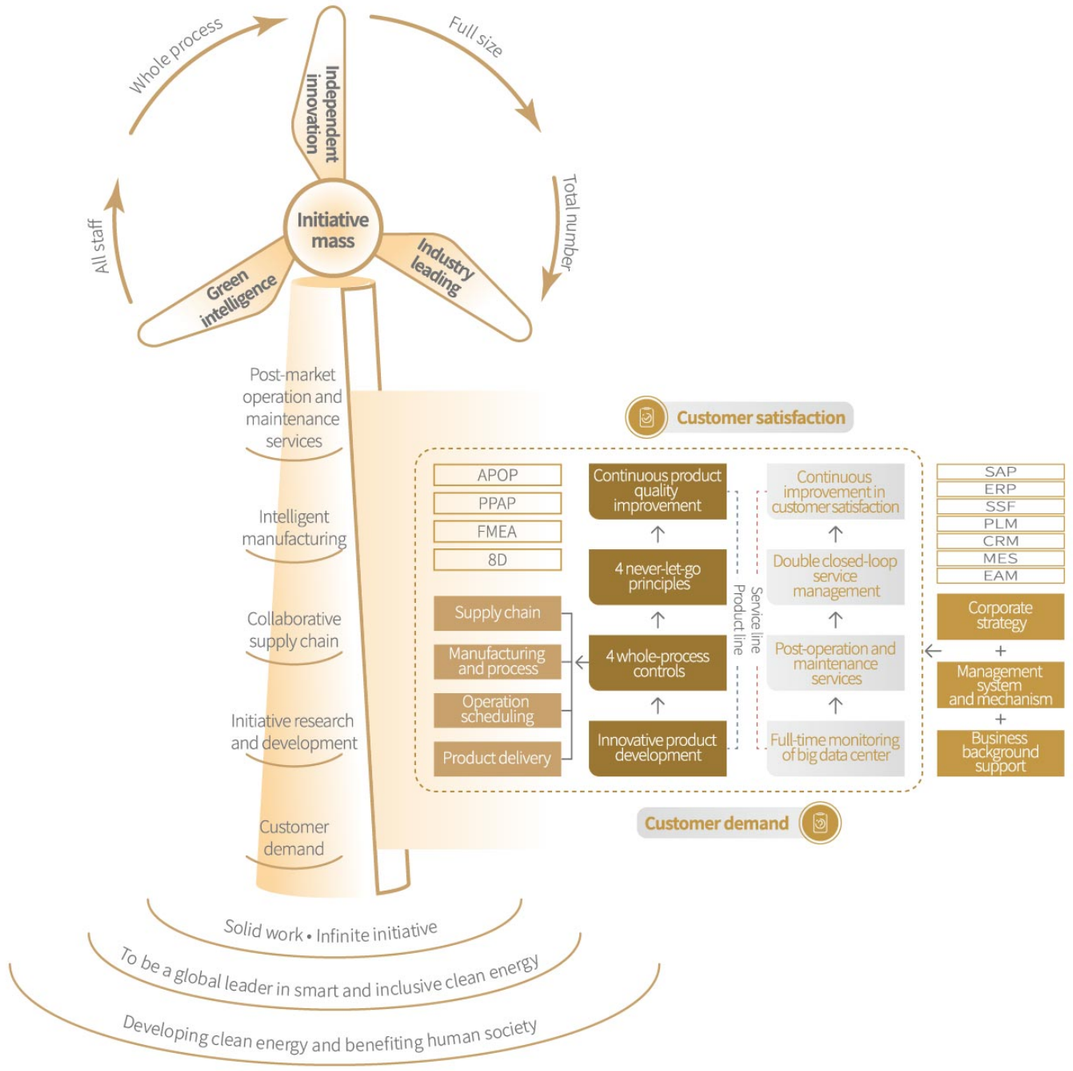
Quality management system based on "doing the right thing at one time"

According to the ISO 9001:2015 standard, the Company has established a whole-process quality management system covering design, R&D, manufacturing, sales and after-sales services, and has passed the TüV Rheinland certification.

According to ISO standards, and the vision, mission and quality policy of the Company, the quality control of "all-staff and whole-process" for the automobile industry and of "all-staff and full-size" for the aerospace industry is applied to ensure that each product meets the requirements of performance and life through effective and in-depth implementation of various management contents.

In order to ensure the realization of "doing the right thing at one time" in each link, Mingyang Group has set up a quality management document system covering the whole process. All links with information exchange come with clear procedure documents, all required operations come with detailed work guidelines, and all quality and service control nodes come with clear work records.

After continuous exploration and iteration, the quality mode of the Company has developed from the traditional comprehensive quality management mode to the "zero defect" Mingyang management mode, and has been upgraded to the quality management model of Mingyang of "3 sides, 4 entireties and 5 steps" in combination with the features of multi-variety, small batch and high reliability requirements of the industry. In 2022, Mingyang won the Zhongshan Municipal Government Quality Award (Organization Award) and was nominated into the 7th Guangdong Provincial Government Quality Award.



Quality management model of Mingyang of "3 sides, 4 entireties and 5 steps"

"Contract risk → product delivery" end-to-end project quality control

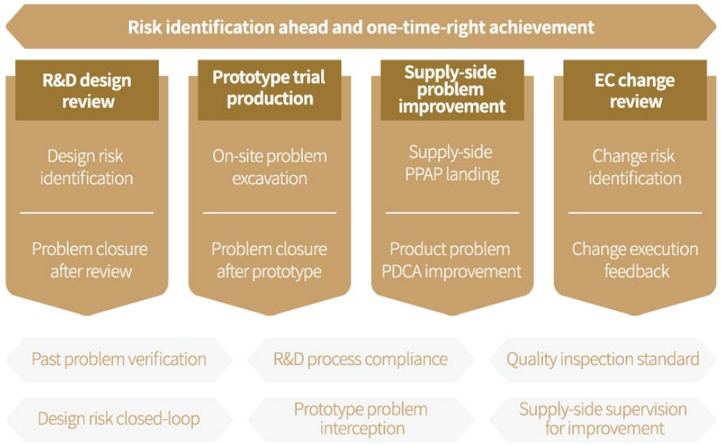
In the contract signing stage, the overall quality control of the project is implemented, and the risk contents and opinions in the contract are fed back to the business department through contract review, so as to avoid risks in advance. After the contract signing, the overall quality planning of the project is carried out. And after the delivery, the quality work will be reviewed and summarized, and the establishment, implementation, maintenance and supervision of the processes and standards related to project quality management will be carried out.

Case: In view of the offline ceremony of Qingzhou Phases I and II Projects, the Project Quality Department sorted out the project quality control and formed batch production acceptance procedures. And subsequent new models from prototype to mass production will be guaranteed according to this process.

Job Category	Specific Matters	Responsible
Design review	Overall design review	Research Institute, Quality and Safety Center, Engineering Department, and Manufacturing Department
	Detailed design review	Research Institute, Quality and Safety Center, Engineering Department, and Manufacturing Department
	Configuration review	Research Institute, and Operation Center
Risk identification and control	Significant risk sorting-out and prevention	Research Institute, Manufacturing Department, and Quality and Safety Center
	Past problem sorting-out and prevention	Research Institute, Manufacturing Department, and Quality and Safety Center
	Contract risk point prevention	Quality and Safety Center
Production process preparation	Manufacturing process design and documentation	Research Institute
	Tooling design	Research Institute
Production and quality management	Production process documentation preparation	Manufacturing Department, and Yangjiang Base
	Production equipment preparation	Manufacturing Department, and Yangjiang Base
	New component development	Quality and Safety Center, and Research Institute
	Quality inspection instruments and equipment	Quality and Safety Center
	Personnel training	Quality and Safety Center, and Manufacturing Department
	Prototype problem closure	Quality and Safety Center, and Research Institute
	Manufacturing quality: Incoming inspection, process inspection, testing, and complete machine warehousing inspection	Quality and Safety Center
Final result confirmation	Confirmation before going offline	Company leaders

"Risk identification ahead and one-time-right achievement" R&D quality control

In 2022, through quality control in the product development stage, Mingyang participated in the design review, change review and prototype trial production review of new products, new components and subsystems, took review problem points and prototype problem points as the starting points, promoted improvement of the R&D side, advanced the quality improvement of product design side, and pushed forward the upgrading and revision of R&D side system. And it converted R&D technical requirements into corresponding quality standards and output quality standard documents for the mass production stage.



R&D review

R&D review of 6 new units

· 378 review meetings attended
· 285 recommendations made
· 100% adoption rate recommended

· 138 release processes reviewed
· 100% review coverage rate

· 360 R&D review questions
· 90% problem closure rate

Specification revision

5 system documents upgraded/released

· Version A1 R&D and review management specifications released (upgraded)
· Version A3 FMEA operation guidelines released (upgraded)
· Version A1 DVP/R operation guidelines released (upgraded)
· Design Checklist management specifications (first released)
· Version B4 EC change control procedures released (upgraded)

Engine review & EC management

Engine review

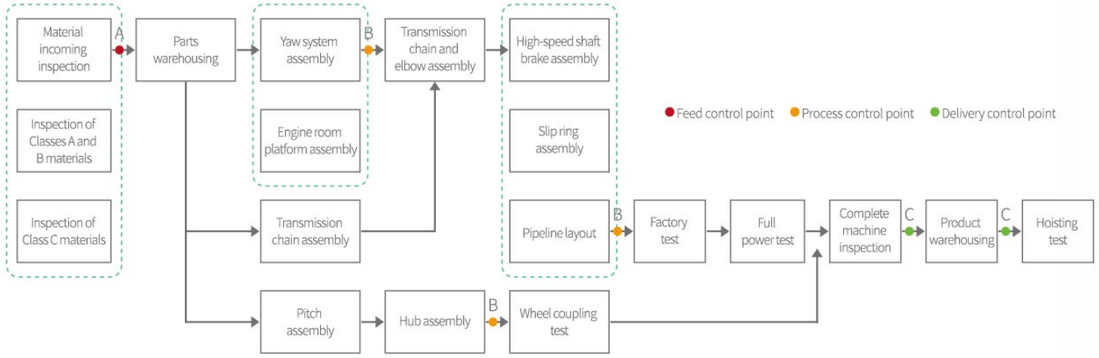
· 4.0U-166/182 engine review
· MySE6.X-200 engine review
· MySE5.0-193 engine review
· MySE12-242 engine review

EC change management

· Total EC changes up to 342
- ->Top1 reasonable optimization (28%)
- ->Top2 design changes (23%)
- ->Top3 others (13%)
- ->Top4 configuration changes (12%)
- ->Top5 non-technical renovation (5%)

"Full quantity and full size" manufacturing quality management

By taking the complete machine quality index as the breakthrough point, Mingyang pays attention to the setting, decomposition, statistics, evaluation and incentive of the complete machine offline quality index. The whole-process quality control mainly focuses on the quality control points and key indexes of the complete machine. In combination with the incoming inspection of raw materials given by SAP system, the traceability of assembly information of process components, and the verification of wind farm quality operation and maintenance work orders given by EAM system, the query and management of the whole process information from raw materials to wind farm hoisting operation and maintenance can be realized through mature SAP and EAM systems. In the meantime, each base adopts daily, weekly and monthly quality meetings to ensure the smooth development of quality work.



In 2022, for the purpose of vigorously promoting the quality requirements of "strict management and powerful control" and implementing the corporate quality system in the manufacturing base, the functions of the base inspection department will be integrated into the unified management of the Quality Safety Center. Through adjusting and optimizing the whole-process quality control mode, a fence of higher standard is built for the Company's product quality in all links, effectively improving the product process and quality status. In the meantime, accurate planning and abnormal closed-loop management improvement can significantly improve the closing rate of anomaly improvement.

"Zero defect" supply chain quality control

With reference to the systematic quality management of IATF 16949 in the automotive industry, the systematic quality management of wind turbine components is achieved from establishment and improvement of the supply chain quality system, new product development, mass production quality management and effective problem improvement and prevention, so as to ensure uniform and stable product quality.

New supplier access

Professional review team:
Form a professional access evaluation team composed of three departments for design, quality and procurement;

System review items:
Fully evaluate supplier capabilities from quality system, design and development, quality control, production capacity, service and other modules;

Scientific evaluation indicators:
Set scientific and rigorous scoring standards, and meanwhile set the “single red line” standard.

01

New product development OTS & PPAP

Perform supplier OTS verification:
Supplier design, sample trial production, full-scale inspection, FMEA, performance and function test, reliability and durability test, etc.;

Perform PPAP validation of new products:
① Sample verification: Production process conformity verification + product verification + wind farm operation verification;
②Small batch verification: Production process compliance verification + product verification + wind farm operation verification.

Enter mass production after full verification.

02

Mass production quality assurance

Whole-process supervision of core components:
Implement full-quantity and full-size management standards:

Standardized management of supplier production process:
Form a "control plan" for all components and supervise the compliance of production process;

4M change management:
Conduct monthly statistics, review supplier change points and eliminate the impact of changes;

Supplier performance management:
Encourage excellent suppliers and support poor suppliers based on monthly supplier quality performance;

Annual supplier audit:
Develop an overall supply chain plan based on the audit results.

03

Quality improvement and enhancement

Past bad verification:
Past defects are verified, improved and expanded horizontally to ensure that they no longer happen;

Abnormal quality improvement:
Find root causes and effective countermeasures for the new quality abnormality through the 8D and 5 principles;

Supplier rectification and consolidation:
Upgrade improvement methods, analyze and solve problems through special improvement, and realize improvement;

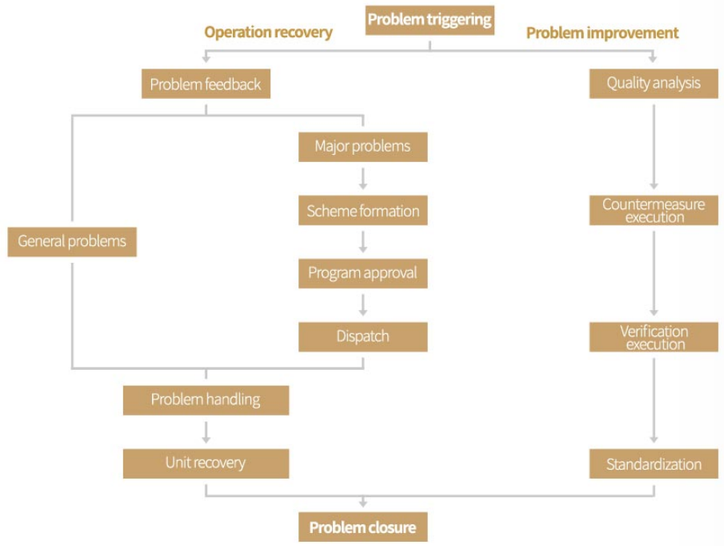
Supplier optimization:
Eliminate unqualified suppliers.

04

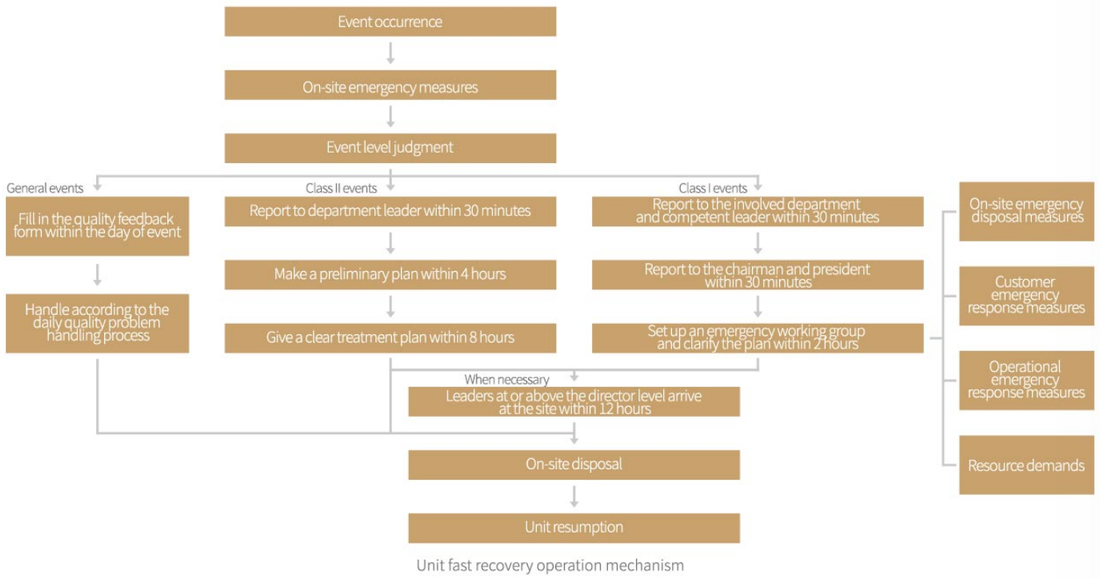
In 2022, for the purpose of coping with the black hole risk of major losses to major components and achieve zero defects in key core components, corresponding special actions were carried out against core component suppliers from five aspects (secondary supplier control, new product development quality control, special confirmation of red line control list, special confirmation of core component testing, and supplier on-site audit), and the quality control work continued to be promoted. Meanwhile, special improvement actions for welding and corrosion prevention were continuously carried out by suppliers. In 2022, in view of weak links in the quality control level of welding and corrosion prevention process of those Class C parts manufacturers with weak capabilities, the assistance and in-depth improvement were provided to suppliers, causing the product quality of many suppliers to be significantly improved.

Engineering Operation & Maintenance and Quality Control of the “Double Closed-Loop Problem Management Mechanism”

In line with the principle of early detection and early treatment, we adopt a “double closed loop” approach, both online and offline, to ensure the safety of the wind turbine in operation. By applying the “two-pronged approach” of big data monitoring and early warning plus active investigation and establishing an “online” problem processing system and an “offline” physical problem processing process, Mingyang Smart Energy has developed a double closed-loop management concept of “quick response” and “quality improvement” for the customer’ s field quality problems and improvements to ensure the quick resolution of the problems and the reliable operations of the wind turbine.

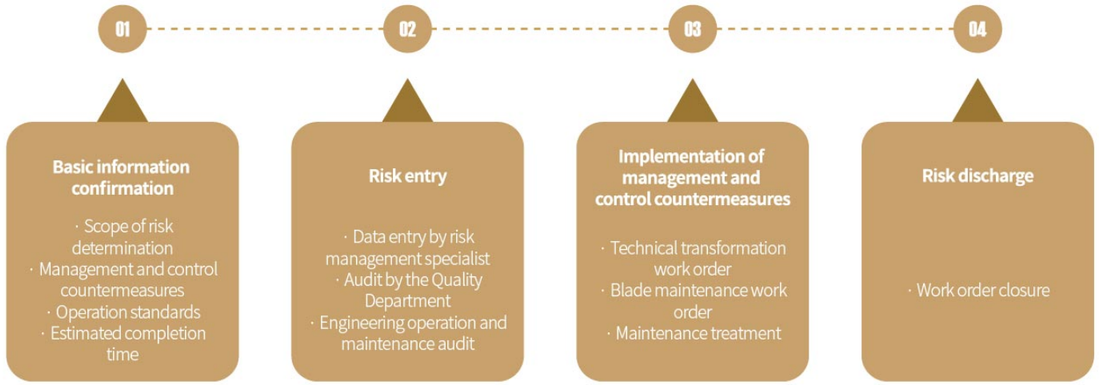


Problem handling and "double closed-loop" mode improvement



Unit fast recovery operation mechanism

By establishing a digital management platform for risk management and control of existing units, the abnormal state of in-service units can be identified in time through monitoring system and early warning of unit operation, hidden risks can be eliminated through measures such as inspection, maintenance and technical transformation, and risk management and control countermeasures can be managed uniformly through a digital management platform, so as to ensure the operation quality of in-service units in real time.



Quality risk management and control

Smart Operations and Maintenance and Lifecycle Management

Nearly **40**GW

Nearly **500** wind farms

Over **10,000** units

From wind resource assessment, site selection, wind farm construction management to O&M, we use digital and smart platforms to carry out centralized O&M, smart management and unattended wind farm construction. Mingyang Smart Energy is dedicated to providing customers with the lifecycle asset management and smart operations of wind farms. With the visibility into the data management of power station assets and lifecycle-oriented economic indicators, we deliver value-added services that meet wind turbine aftermarkets, energy service transactions, industry-finance integration and other commercial needs, and thus serve financial institutions in terms of risk control and pricing, laying the foundation for further cooperation.

As of the end of 2022, the installed capacity of power plants we serve has exceeded 40 GW, and we have provided wind power O&M services for over 500 wind turbines in more than 10,000 wind farms.

On September 15, China Electricity Council held the "2022 Wind Power Production and Operation and Industrial Development Innovation Exchange Seminar and Power Industry (16th) Wind Power Operation Index Conference", at which the "2021 National Wind Farm Production and Operation Index Benchmarking and Evaluation Results" was announced. In this selection, Mingyang won the honor of "Best Unit Availability Award" for its intensive cultivation in the field of wind power, good project operation data and excellent performance and reliability of its own units. Meanwhile, 55 wind farms with their wind turbines provided by Mingyang Smart Energy were rated as "excellent wind farms", including 9 ones of Level AAAAA, 21 ones of Level AAAA, and 25 ones of Level AAA, ranking the first in the industry.

Initiative · Employee Responsibility

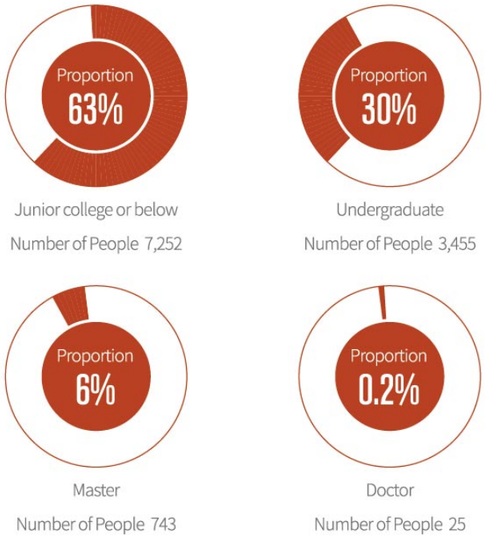
Mingyang strictly abides by the Labor Law, the Labor Contract Law and other laws and regulations to effectively protect the legitimate rights and interests of its employees. Through the formulation of "Recruitment Management Systems", the recruitment process of employees is standardized to ensure that employment meets the requirements of laws and regulations. Labor contracts are concluded with employees in the principle of "equality, voluntariness and consensus".

Employee Composition

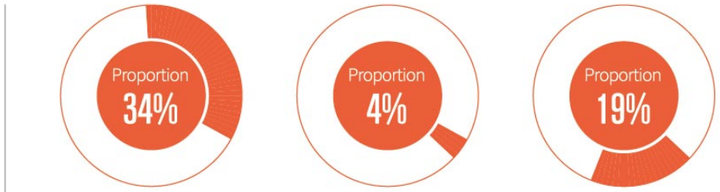
By the end of 2022, Mingyang Smart Energy has a total of 11,475 employees, including 1,640 female ones, 956 ethnic minority ones and 14 overseas ones, reflecting its diversified talent team.

Age structure

Academic structure



Specialty structure



Employee Change Trend from 2020 to 2022

	2022	2021	2020
Number of people	11,475	10,089	10,163
Employees with a master's degree or above	768	561	506
Proportion of technical personnel	19%	21%	17%
Proportion of employees under 40 years old	88%	88%	89%
Proportion of female employees	14%	8%	13%

Employee Satisfaction and Engagement

According to the survey and statistical report of employee satisfaction and engagement in 2022, the proportion of employee satisfaction is close to 96.04%, and the proportion of employee engagement is close to 86.9%. The dimensions of the survey in 2022 refer to those in 2021, among which the high score dimensions are: "management - leadership style", "management - recognition" and "management - training".

Employee Compensation

Mingyang Smart Energy has established and continuously improved a salary management system, and fully mobilized the enthusiasm and creativity of its employees through the incentive compensation system. All the time, the Company has been recruiting employees with an open and inclusive attitude and building a high-quality talent team. It adheres to equal pay for equal work for men and women, and rejects any discrimination or differential treatment. Meanwhile, it has employees paid on time, and contributes five social insurances and one housing fund for its employees in time to protect their legitimate rights and interests.

Stock Option Incentive

According to the "Mingyang Smart Energy 2022 Stock Option Incentive Plan (Draft)" and other proposals as deliberated and adopted at the 35th meeting of the 2nd session of the Board of Directors and the 31st meeting of the 2nd session of the Board of Supervisors, the number of stock options to be granted to the incentive targets was 22.72 million, accounting for about 1.00% of the total share capital of the Company (i.e. 2,272,085,706 shares) on the announcement date of the draft incentive plan. Among them, 18.176 million stock options were granted for the first time, accounting for about 0.80% of the total share capital of the Company on the announcement date of the draft incentive plan and about 80.00% of the total stock options to be granted in this incentive plan; and 4.544 million stock options was reserved to grant, accounting for about 0.20% of the total share capital of the Company on the announcement date of the draft incentive plan and about 20.00% of the total stock options to be granted in this incentive plan. For details, please refer to the "Summary Announcement of the 2022 Stock Option Incentive Plan (Draft)" (Announcement No.: 2022-113) as disclosed by the Company in its designated information disclosure media on November 11, 2022.

Equity Incentive

The achievement in lifting the restrictions on sales in the second phase among the firstly granted part in the 2019 restricted stock incentive plan was as detailed in the "Announcement on the Achievement in Listing the Restrictions on Sales in the Second Phase among the Firstly Granted Part in the 2019 Restricted Stock Incentive Plan" (Announcement No.: 2022-070) as disclosed by the Company in its designated information disclosure media on June 29, 2022. As authorized by the Company in its 2019 Annual General Meeting of Shareholders, the lifting of the restricted shares has been deliberated and adopted at the 32nd meeting of the 2nd session of the Board of Directors, and such shares will be listed on July 7, 2022, with the number of restricted shares as listed and circulated this time to be 5,667,600.

The achievement in lifting the restrictions on sales in the first phase among the reserved part in the 2019 restricted stock incentive plan was as detailed in the "Announcement on the Achievement in Listing the Restrictions on Sales in the First Phase among the Reserved Part in the 2019 Restricted Stock Incentive Plan" (Announcement No.: 2022-114) as disclosed by the Company in its designated information disclosure media on November 11, 2022. As authorized by the Company in its 2019 Annual General Meeting of Shareholders, the lifting of the restricted shares has been deliberated and adopted at the 35th meeting of the 2nd session of the Board of Directors, and such shares listed on November 23, 2022, with the number of restricted shares as listed and circulated this time to be 1,628,400. Based on the sustainability principle of long-term incentive mechanism, a suitable incentive plan will be launched as appropriate according to the Company's development plan.

Employee Development

In accordance with the talent incentive concept of “value orientation, fairness and impartiality, and responsibility”, the Company has established and improved a talent promotion system and employee development system that motivates employees to exert their talents and desire for progress and development, and encouraged R&D and front-line employees to start businesses, innovate, and develop together.

Mingyang Academy

As the “training base” of talent strategy, Mingyang Academy relies on the Group’ s strategic development in terms of orientation and training direction. Based on the Company's strategic development plan and the need for talent training from organizational capacity challenges, Mingyang Academy plans department positioning and a series of talent training and development projects to gradually establish a training system centered on “relying on strategy + talent development + performance improvement”.

Mingyang Academy focuses on the application of development methods such as classroom training, action learning, tutor guidance and job experience in the process of talent training at different levels. Moreover, it emphasizes on “learning by doing, doing by learning”, unifying thoughts, language and behavior in the process of learning and practice, practicing in learning, learning in practice, boosting the achievement of the Group’ s talent supply chain and business performance, and becoming a strong backing for the Group’ s strategy implementation.

In 2022 the Company invested more than RMB 8.400 million in employee training. During the reporting period, a total of 300 trainers held 4,183 training sessions with 458,486 class hours were taught online and offline. The Company continues to increase investment in training, systematically upgrades courses, lecturers, resources, forms, etc., and provides employees with systematic and comprehensive learning opportunities through the combination of internal and external resources, as well as online and offline training.

More than RMB **8.400** million in employee training

Total of **300** trainers

Held **4,183** training sessions

458,486 class hours were taught online and offline.

Talent cultivation

I. Leadership development system

Based on the Group’ s strategic planning and business transformation and development needs, Mingyang Academy has launched “on-the-job training for cadres" + “three major talent echelons project” , so as to establish a talent phalanx of Mingyang and continue to cultivate a group of future leaders with a sense of mission and the ability to lead Mingyang to greater success.

II. New employee training system

To make the new employees quickly familiar with Mingyang, into Mingyang, and better understanding of Mingyang’ s business, culture and values, Mingyang Academy has carried out targeted and systematic training for new employees recruited by on-campus recruitment and by social recruitment, and launched [Initiative - new generation training camp] and [Newcomer project].

III. Professional competence training system

It refers to the training of professional skills for competent posts required by the business sector. It not only cultivates the professional depth skills of various posts, but also builds the special abilities of compound talents, thus strengthening the backbone of professional talents and ensuring the achievement of strategic business goals.

Training of professional ability in R&D system technology

Aiming at strengthening the vertical and horizontal professional capabilities of R&D teams, accelerating the promotion of innovation and building a high-quality R&D technical team that can undertake corporate strategic mission, Mingyang School focuses on the pain points in R&D management and the difficulties in technological breakthroughs, and carries out programs such as "R&D Technology Lecture Hall, R&D Engineer Class, Technical Standardization Training and Technical Innovation Training Camp" for the personnel at all levels of technical departments in a combination of "internal training + external training", so as to enhance R&D personnel's awareness of cutting-edge technologies and expand their technical breadth.

Training of professional ability in marketing system

Aiming at implementing and focusing on the operating fundamentals of "three leads and two forces", supporting the basic management, consolidating the supply chain system of marketing talents and market capacity building, forming an elite marketing force that dares to fight, can fight, is good at fighting and will win the battle, and building the curriculum system at different levels while centering on the development and construction goals of management ability, specialty ability and profession ability, a special course training is organized every month and a marketing strength management course is organized every quarter a combination of internal training + external training, so as to comprehensively enhance professional quality and service efficiency of the marketing echelon, build cooperative combat ability and achieve high-quality business growth.

Training of professional ability in engineering operation and maintenance

Based on the dimensions of improvements in professional quality, skills, project management, team management ability, operation and maintenance services and engineering technology, the on-the-job training of front-line personnel, project management echelon training and regional management team training will be carried out simultaneously.

Training of professional ability in comprehensive functions

Aiming at consolidating basic management ability and professional quality of the comprehensive system, enhancing the overall ability and quality of the staffs, reducing the cost of inter-departmental communication, reserving the talent echelon, and enhancing the sense of belonging and value of the employees among various departments/organizations, Mingyang School has planned the training program of "Cultivating Talents and Strengthening Services".

IV. Institutional System Support

Institutional guarantee

Mingyang School has established and improved its Training Management System to ensure the effective implementation of training budget, training demand analysis, training plan formulation, training implementation, training effect evaluation, training file management and other links; as well as improved the Lecturer Management System, and updated the access threshold for lecturers, the process of lecturer identification and the subsidy standards for curriculum development and teaching.

Online learning platform

The My-learning online learning platform has been launched since 2019, with over 3,000 general management courses and over 1,000 professional technical courses. Featuring interactivity, sociality and synergy, the learning platform adapts to the community learning needs of employees. Employees all over the country can learn online anytime and anywhere, breaking the time and space constraints, cultivating the initiative of "autonomous learning", and recording the track of skills improvement and quality development of every Mingyang people.

School-enterprise cooperation and academic upgrading

The Company has reached a cooperation mode of joint training and common development with many renowned universities and research institutes nationwide, and continued in-depth cooperation in respect of personnel training, project research and development and think tank construction. For example, since 2009, it has started the engineering master program with Xi'an Jiaotong University; and in 2022, it has established a long-term strategic alliance with Sun Yat-sen University, South China University of Technology, Ocean University of China, Northwestern Polytechnical University and North China Electric Power University to jointly train talents, and set up Mingyang Scholarship. In the meantime, the Company strongly encourages employees to upgrade their academic qualifications, and contributes to organize many on-the-job education such as engineering master class, engineering doctor class and MBA.

Employee Care

Mingyang has established a sound medical security system to guarantee the occupational health of employees, and regularly carries out occupational, comprehensive and special physical examination for employees. In order to express the Group’s care for female employees, Chairman Zhang Chuanwei issued a letter of sympathy to all female employees. The Group issued condolences to each female employee, and held a series of interesting activities on Women’s Day. Each industrial company and each base held their own related holiday celebrations.

Employee activities

On the morning of August 14, the Group held a learning experience sharing meeting among the children of employees and new graduates themed "Running with the Dream and Never Living Up to the Youth".

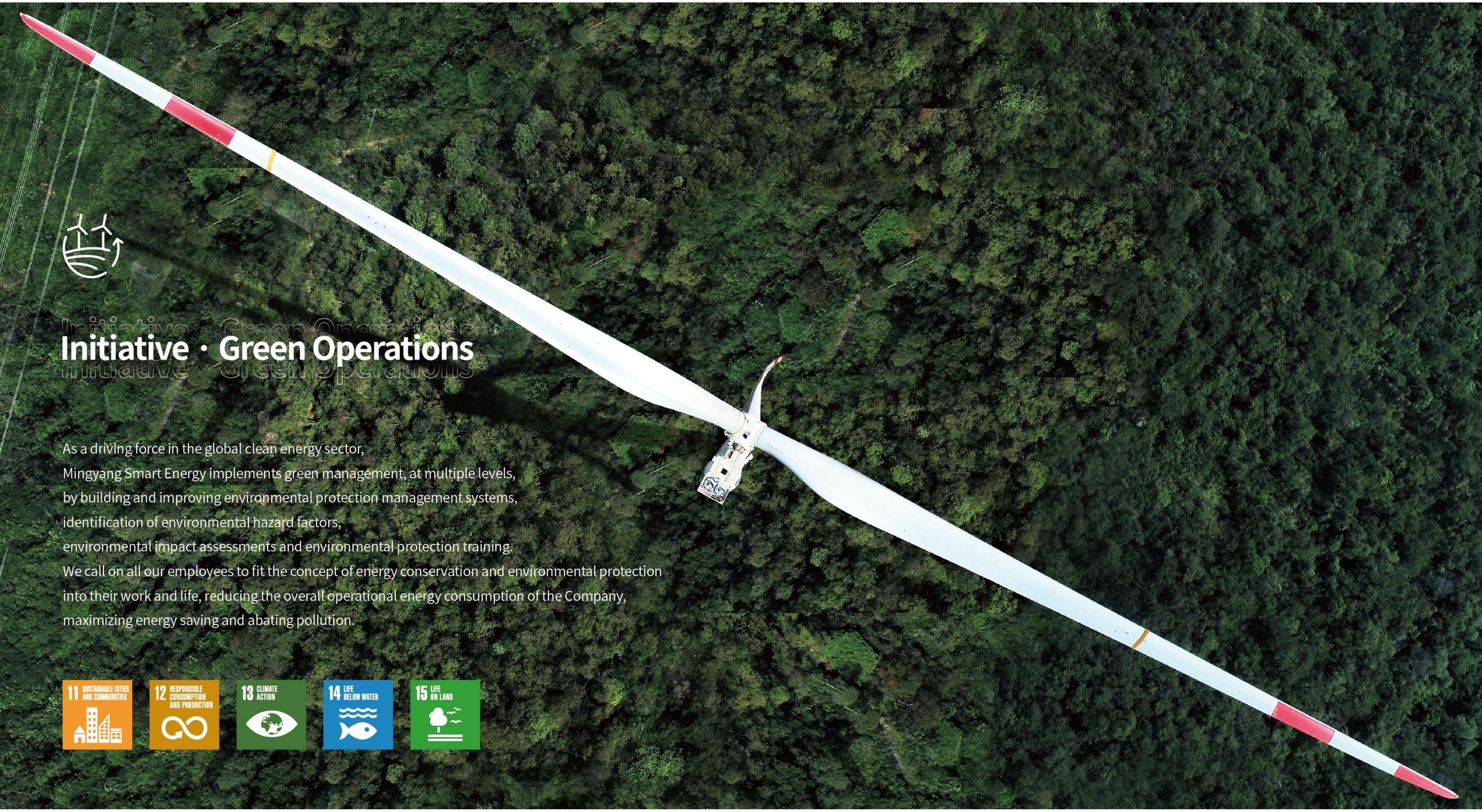
In September, the Group held a football league match themed "Igniting the Red Engine and Achieving the Green Dream".

In November, the Group held a basketball league match themed "Gathering Strength and Striving to a New Journey".

In October, the Group organized a reading month theme activity.

Employee benefits

Five social insurances and one housing fund: Social insurance (pension, medical care, unemployment, work-related injury and maternity) and housing fund;
Commercial insurance: Employer liability insurance + accident insurance;
Incentive policies: Annual salary adjustment, position promotion, year-end performance bonus, equity incentive, etc.;
Paid leave: Statutory holidays, paid annual leave, marriage leave, maternity leave, paternity leave, sick leave, etc.;
Life service: Accommodation and meal allowance as well as diversified cultural living conditions for employees;
Other benefits: Phone bill subsidy, vehicle subsidy, house purchase fund, off-site subsidy, wedding gift, maternity gift, birthday benefit, holiday benefit, hospitalization condolence, annual physical examination, etc.



Initiative · Green Operations

As a driving force in the global clean energy sector,
Mingyang Smart Energy implements green management, at multiple levels,
by building and improving environmental protection management systems,
identification of environmental hazard factors,
environmental impact assessments and environmental protection training.
We call on all our employees to fit the concept of energy conservation and environmental protection
into their work and life, reducing the overall operational energy consumption of the Company,
maximizing energy saving and abating pollution.

EHS Management

Safety management system

The Company has passed the certification of ISO45001 occupational health and safety management system, and has formed management manuals, process documents, management systems, etc. And it organizes internal audit and management review at least once a year to ensure the suitability, adequacy and effectiveness of its management system, continuously improve the working environment and working conditions of its employees, and ensure the safety and health of its employees.

Occupational Health and Safety Management System Certificate

Health and safety indicators

Indicator	Unit	2022	2021	2020
Number of incidents punished for violating occupational health and safety laws and regulations	Incident	0	0	0
Number of incidents punished for violating environmental protection laws and regulations	Incident	0	0	0
Number of incidents punished due to excessive pollutant discharge or illegal discharge	Incident	0	0	0
Number of working days lost due to work-related injuries(Note: days of absence due to work-related injuries)	Day	1,436.5	6,543	6,670
Number of employees in occupational disease risk positions	Employee	1,203	714	1,274
Number of employees who have participated in occupational disease checkups	Employee	1,203	715	264
Number of employees with occupational diseases	Employee	0	0	0
Occupational disease occurrence	Time	0	0	0

Safety management systems

In 2022, we have established 167 new safety management systems, including Work Safety Reward and Punishment System, and Management System for Labor Protection Appliances, among others.

Safety training indicators

Indicator	2022	2021
Safety training (total hours)	243,438	194,667
Special operators (hours)	101,694	54,406
Safety management personnel (hours)	4,073	3,205
Front-line operators (hours)	74,866	111,100
New employees (hours)	61,010	114,389
Persons chiefly in charge (hours)	1,796	1,634

Safety equipment investments

In 2021, a total of RMB 42.99 million was spent on labor protection appliances, maintenance, training and third-party testing.

Green Production

Environmental protection management system

The Company has passed ISO14001 Environmental Management System and developed a set of systems covering hazardous waste management, environmental protection management, hazardous chemical safety management as well as hazardous waste disposal management methods.

Environmental Management System Certificate

Environmental early warning and emergency mechanism

We have specially developed emergency plans in order to implement the Environmental Protection Law of the People's Republic of China, the Law of the People's Republic of China on the Prevention and Control of Water Pollution, the Law of the People's Republic of China on the Prevention and Control of Atmospheric Pollution Air, the Law of the People's Republic of China on the Prevention and Control of Environmental Pollution by Solid Wastes, and the Interim Measures for the Management of Environmental Emergency Response Plans and other relevant laws and regulations, regulate the response work after the incident, improve the incident response capability, avoid or mitigate the impact of the incident, and strengthen the connection between the enterprise and the government in response efforts.

Working principles

Priority to saving people and protection environment. Once the environment is polluted, it is difficult and costly to restore;
Early response to reduce harm from deterioration. Regardless of the level, measures should be taken quickly to deal with it on the scene of an environmental emergency the moment it occurs, so as to control the situation and ameliorate the consequences.

Quick response in a scientific manner. A quick response should be made to any environmental emergencies based on their characteristics.
Keeping alert all the time by combining routine exercises and actual emergency response. By combining emergency work with job responsibilities, we emphasize that emergency tasks should be refined and implemented down to specific jobs, actively gear up for environmental emergencies in terms of mental preparation, material reserves, technical equipment supply and other efforts, strengthen emergency training, carry out emergency response drills, and develop multiple skills while expert in our field.

People orientation and proactive prevention. We uphold the people-oriented approach of actively preventing environmental emergencies, nipping accident symptoms in the bud.

Environmental training and education

Apart from the development of environmental protection training plans, we also conduct environmental knowledge training, hazardous waste management training, environmental protection-fire protection training and others, and participated in the publicity and implementation meeting about the Law on the Prevention and Control of Environmental Pollution by Solid Wastes hosted by the Department of Industry and Information Technology of Guangdong Province.

Environmental performance

To keep the balance of nature, reduce the pollution of wastes to the surrounding ecological environment, and comply with national laws and regulations and environmental protection requirements, Mingyang Smart Energy provides an effective management and control of various wastes discharged and exhausted.

Classified collection of wastes: Each department shall set up storage containers or temporary places for recyclable wastes, non-recyclable wastes and hazardous wastes as required, and mark them appropriately.

Each department shall classify and collect such recyclable wastes, non-recyclable wastes and hazardous wastes as generated, and the specific waste collectors shall put the collected wastes in a fixed place as required. Such collectors shall prevent the loss, mixing, flying and leakage of wastes during collection and handling.

Domestic wastes, industrial solid wastes and hazardous wastes shall be placed in the designated positions by the waste generating department as regulated, and stored neatly by location mark. Domestic wastes and industrial solid wastes shall be handed over to the Support Service Center by various involved departments, which shall notify the waste recycling company of treatment, while hazardous wastes shall be disposed of by the eligible recycling companies as tendered by the Procurement Management Department and regularly arranged and entrusted by the Safety Environment Office.

Waste disposal: Each department shall be responsible for the waste disposal and management of its own department. Such wastes will then be classified within the involved department, with hazardous wastes uniformly placed in the hazardous waste storage area, while domestic garbage and industrial solid garbage placed in the general waste storage area. Domestic garbage and industrial solid garbage shall be handed over to the Support Service Center by various involved departments, and hazardous wastes shall be handed over to the Safety Environment Office by such departments before disposal by eligible units.

Waste discharge in 2022
The total amount of hazardous wastes generated: 392.26 tons;
The total amount of non-hazardous wastes produced: 14,133.71 tons.

Pollution prevention and control: The Company has established mature environmental pollution prevention and control procedures, which guarantee that the wastewater, waste gas, dust, noise and waste generated in production and operation activities are reasonably controlled according to national laws and regulations, industry standards and relevant requirements of the Company to ensure their emissions meet the requirements of national and local environmental laws and regulations. The specific prevention and control measures are as shown in the following table.

Wastewater	The discharge of wastewater shall conform to the national and local wastewater discharge standards. In case the workshop wastewater fails to meet relevant discharge standards, treatment measures shall also be taken to make it uniformly discharged to the designated sewage treatment plant upon reaching the standard.
Hazardous gas and dust	Ventilation and purification must be adopted; dust collectors and filter elements should be replaced or cleaned regularly to meet the workshop hygiene standards in the Hygienic Standards for Design of Industrial Enterprises; the emissions beyond the workshop should meet the environmental protection requirements; and the treatment facilities should be kept in normal operation to prevent waste gas pollution as a result of their failures.
Waste	It must be collected for harmless treatment, and must not be discharged into water in any way or discarded arbitrarily. And hazardous wastes must be outsourced according to relevant requirements for hazardous waste management.
Noise	Noise sources should be controlled first, and low-noise process equipment should be preferred. When necessary, noise reduction measures such as vibration isolation, sound insulation and sound absorption should be taken to make the impact of noise sources on the surrounding areas conform to the provisions of regional environmental noise standards.

Pollutant emission in 2022

Emissions of volatile organic compounds (VOCs):
3,331.25 kg

Emissions of chemical oxygen demand (COD) (in waste water): **14.47** tons

Emissions of ammonia nitrogen (NH3-N) (in waste water): **1.95** kg

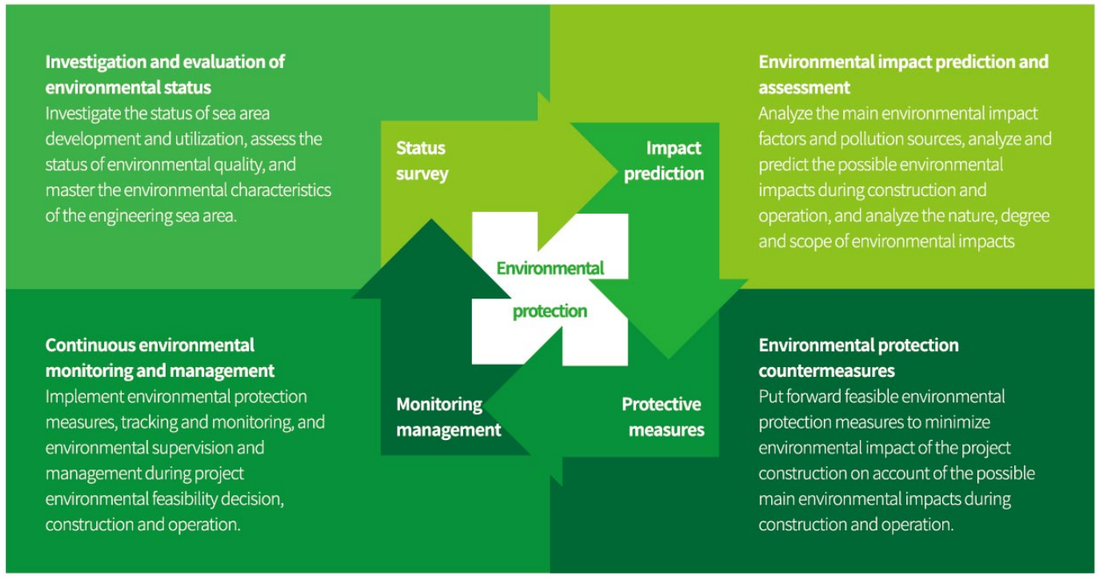
Emissions of domestic wastewater:
237,267.6 cubic meters

Green Ecology

Mingyang Yangjiang Qingzhou Sihai Wind Farm Project

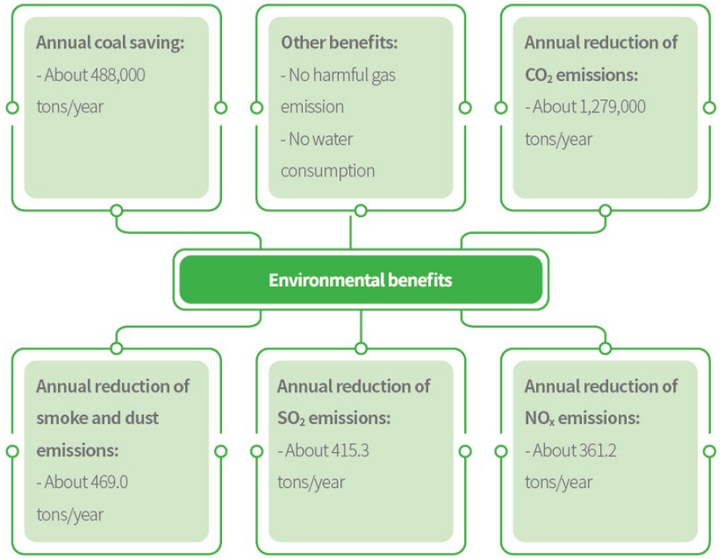
Located at the sea area near Shaba Town, Yangxi County, Yangjiang, Guangdong, Mingyang Yangjiang Qingzhou Sihai Wind Farm Project is about 61km away from the land, with an area of 81.04km² and a water depth of 43~46m. The total installed capacity of this project is 500MW, with a designed annual average on-grid power generation capacity of 1,628.476 million kWh and an annual equivalent full-load power generation hours of 3,250h.

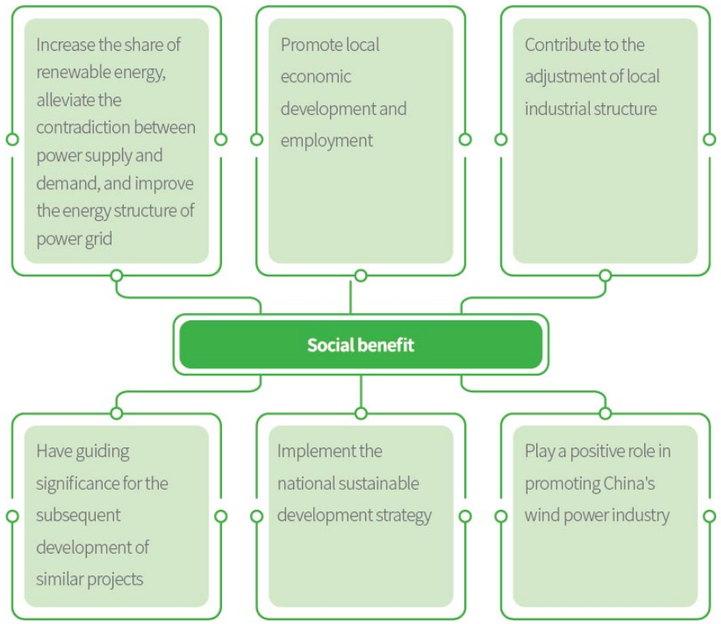
As a wind power generation project, this project falls into the renewable energy and clean energy utilization projects, and is encouraged by industrial policies. It conforms to the national industrial policies and satisfies the requirements of relevant laws and regulations on environmental protection. Its construction is of positive significance for lowering coal consumption, reducing environmental pollution, easing environmental protection pressure and improving regional power supply structure. And it is a concrete embodiment of developing a low-carbon economy and building a conservation-oriented society, constituting an important part of Guangdong's energy development strategy. In the process of project construction, various environmental protection measures are implemented and follow-up supervision and management are implemented, so there are no environmental factors restricting the construction of this project.



Ecological protection measures:

Item	Content	Specific environmental protection measures
Sewage treatment	Domestic sewage of maintenance personnel during operation	The domestic sewage collection tank is arranged below the toilet in the refuge room of the booster station, and the domestic sewage of maintenance personnel is collected and taken away together with the ship to the land centralized control center for treatment and reuse.
	Oil leakage in booster station	Set up a collection tank no less than 110m^3 to collect centrally and transport outwards in a unified way, and then hand over to an eligible unit for subsequent treatment.
	Ship sewage	All ships for construction are equipped with collection devices for ship domestic sewage and ship oily sewage, which will be delivered to the units with treatment capacity for outward treatment.
Solid waste disposal	Domestic garbage disposal	Set up domestic garbage cans, collect them ashore, and remove them regularly by the local sanitation department.
	Garbage disposal during wind turbine maintenance	2 oily waste tanks for wind turbine maintenance will be collected and transported to the shore for disposal by an eligible unit.
Marine ecological protection	Construction avoidance at spawning ground	Submarine cable construction and pile foundation construction shall avoid the spawning period of long-tailed bigeye bream from May to July.
	Set up the scope of hazard level and warning level	The pile driving of wind turbine foundation is dangerous within 450m from the pile foundation center and warning within 4.5km from the center, which may drive and move fish.
	Compensation for fishery resources	Adopt the method of propagation and release, and select local varieties suitable for propagation and release to compensate.
	Birds and their habitats	The blades are all coated with non-reflective materials, and the impact of wind farm on birds is continuously monitored by setting up bird observation and rescue stations and using radar monitoring equipment.
Acoustic environment protection	Noise control	Noise management measures such as maintenance of construction ships and construction equipment, notice post and complaint telephones are taken; and soft start mode is adopted for piling construction. That is, the first pile is impacted with small amplitude, and then the strength gradually increases.
Environmental management	Environmental protection management of wind farm	Dispatch full-time personnel to manage the environmental protection of wind farms in a unified way.
	Environmental supervision	Conduct environmental supervision by means of patrol.
	Environmental monitoring	Carry out monitoring of hydrodynamics, marine ecology, fishery environment, marine water quality and sediments, and observation of bird conditions, topography, erosion and siltation.
	Other environmental protection measure plans, special scientific research, etc.	Design environmental protection measures, carry out special scientific research, conduct environmental protection acceptance and investigation upon completion, etc.





Initiative · Inclusive Public Good

Poverty Alleviation by Industries to Power Rural Revitalization

Since its establishment, Mingyang Smart Energy has firmly followed the path of green development and ecological priority. At Mingyang Smart Energy, we leverage our own as a new energy manufacturer to carry out characteristic poverty alleviation work, actively in response to the country' s call to "win the battle against extreme poverty and eradicate it and implement the strategy of rural revitalization" since the 19th CPC National Congress. Following the path of poverty alleviation by means of industry, employment and education, Mingyang Smart Energy helps people get out of poverty by virtue of new energy and supports rural revitalization.

Mingyang Smart Energy, which serves the new era and helps build new countryside with green and clean energy, is a builder, participant and promoter of the national rural revitalization strategy. We actively build modern systems of safe, clean, efficient and low-carbon energy in rural areas, and put efforts into the protection of clear waters and lush mountains, the integrated development of wind-solar-storage resources, rural revitalization and the coordinated and integrated development of the economy around "agriculture, rural areas and farmers".

The development of energy is beneficial to the country and the people. Mingyang Smart Energy is full of confidence in new energy benefiting all mankind and the realization of low carbon and zero carbon goals. On September 29, 2022, the pilot project of "Action of Sending Support to Thousands of Townships and Ten Thousands of Villages", with Mingyang as the investment and construction entity, commenced in Huaibin County, Xinyang, Henan, which was also among the first batch of pilot projects to practice rural revitalization and take the lead in preparing implementation plans and starting construction in China.

At present, the Company has invested in the construction of industrial bases or new energy projects in underdeveloped regions such as Gansu, Jilin, Qinghai, Inner Mongolia, Yunnan, Guangxi, Guizhou and Henan. Through industrial chain agglomeration effects, it has helped local industries improve the employment capacity and retain lucid waters and lush mountains in the process of local battles against poverty by the new energy sector, playing a positive role in fueling the development of the local and surrounding areas. At the same time, we have been committed to helping poor villages develop through employment, education, and targeted donations to charitable organizations for years in a row.

Low-Carbon City Promotion Plan

Annual total power generation of wind and photovoltaic power in the project

Over **20** million kWh

Annual reduction in standard coal consumption up to approximately

6,576 tons

Reduction in carbon dioxide emissions up to

17,500 tons

On November 17, the 14th Chinese Renewable Energy Conference & Exhibition (CREC) was grandly opened in Wuxi. As an important link of this forum, China Energy Research Society and CREC Organizing Committee organized and launched the activity of "2022 National Top Ten Carbon Neutrality Typical Demonstration Cases" at the end of September, and finally selected ten most representative typical cases of carbon neutrality demonstration throughout the country, including the Zero-Carbon Clean Energy Supply System Project in Mingyang Industrial Park at Xilin Gol League.

The zero-carbon clean energy supply system in Mingyang Industrial Park at Xilin Gol League includes two 4MW wind turbines and 1.58 MW roof photovoltaic devices, totaling 9.58 MW, as well as 1MW/1MWh electrochemical energy storage system for peak shaving, frequency modulation, power stabilization, peak shaving and valley filling. The heating system adopts high-voltage electrode hot water boiler + heat storage system to supply heat to industrial buildings, complex buildings, office buildings, dormitory buildings, canteens and other buildings in the industrial park.

The total annual output of wind power and photovoltaic power generation exceeds 20 million kWh, which can fully meet the clean power demand of electricity and heating in the park, and the main carbon emission sources such as electricity and heating in the park are zero-carbonized. The project can reduce the consumption of standard coal by about 6,576 tons, the emission of carbon dioxide by 17,500 tons and the emission of a large amount of SO_2, NO_X and dust every year, thus having good economic and social benefits.

Actively Promote Basic Research in the Industry

With a view to implementing the medium- and long-term goal of achieving "carbon peak" and "carbon neutrality" in China, giving full play to the guiding role of Guangdong Provincial Basic and Applied Basic Research Fund, and promoting the development of offshore wind power, Mingyang Smart Energy Group Co., Ltd. contributed RMB5 million, united Department of Science and Technology of Guangdong Province, Guangdong Provincial Basic and Applied Basic Research Fund Committee, etc. to jointly establish the Offshore Wind Power Joint Fund Program under Guangdong Provincial Basic and Applied Basic Research Fund, which would mainly support the key scientific problems and "cutthroat" technical difficulties that need to be solved urgently in the technological innovation and development of offshore wind power industry, carry out basic and applied basic research, promote the integration between knowledge innovation system and technological innovation system, train a group of outstanding scientific research talents and teams, and enhance the independent innovation capability and core competitiveness of Guangdong's offshore wind power industry.

Poverty Alleviation Donation

Over RMB **6.35** million for education

Over RMB **0.60** million for poverty alleviation

Over RMB **5.10** million for pandemic prevention

Education · Actively support the development of education:
In 2022, the Company donated more than RMB5,000,000 to Boshi School in Queshan County through Henan Charity Federation for its construction. Donated RMB50,000 to Goushu Village through Huilai County Goushu Village Education Promotion Association to support local education. Donated RMB500,000 to Wuqia County Government for local school running and university student assistance. Donated RMB500,000 as educational grants to Atushi Municipal People's Government. Donated more than RMB300,000 through the Red Cross Society to Shiguai District Bureau of Education of Baotou to improve local teaching environment.

Poverty alleviation · Actively participate in the action of "Thousands of enterprises help thousands of towns, and ten thousands of enterprises prospers ten thousands of villages"
On the morning of June 29, 2022, at the grand fundraising ceremony of the 2022 Guangdong Poverty Alleviation Day in Yangjiang held by Yangjiang Municipal Party Committee and Yangjiang Municipal Government, Guangdong Mingyang New Energy Technology Co., Ltd., a subsidiary of the Company, donated RMB500,000 for poverty relief of the poor living in the High-tech Zone. Inner Mongolia Mingyang New Energy Development Co., Ltd., a subsidiary of the Company, donated RMB100,000 as poverty alleviation funds to Jiucaizhuang Township Government of Qingshuihe County.

Pandemic prevention · Make positive contributions in the campaign of pandemic prevention and control
The Company donated RMB100,000 to Huilai County Red Cross Society to support pandemic prevention of the local government. Inner Mongolia Mingyang New Energy Development Co., Ltd., a subsidiary of the Company, donated more than RMB3,000,000 to Baotou Red Cross Society and RMB2,000,000 to Xilin Gol League Red Cross Society to cope with local COVID-19 prevention and control.

Mingyang Smart Energy Charity Fund

Total income on love fund up to RMB **373,903.07**

Mingyang Smart Energy has set up a charity fund aiming to help employees and their immediate family members solve the difficulties in life caused by major diseases and major natural disasters. The Administrative Committee of the Mingyang Smart Energy Charity Fund is managed in line with the Regulations on the Management of the Charity Fund, with special funds for exclusive use. In 2022, Mingyang Smart Energy Charity Fund received a total of RMB373,903.07 and helped 21 people.

Future Outlook

Looking back on the unforgettable 2022, it is a crucial year to reconstruct Mingyang! In the face of the interweaving of the century-old changes and the long-lasting pandemic, the fragile and weak global economic recovery, and the volatile low-price competition in the industry, Mingyang people insist on "grasping the general trend, practicing internal skills and being themselves", maintaining strategic determination and guidance, being brave in innovation and struggle, and firmly marching towards the goal of "establishing ourselves as a leader in smart and inclusive clean energy".

In the extraordinary year of 2022, we accurately grasp the inherent development law of smart and inclusive new energy, focus on "three leads and two forces", strive to improve the operating fundamentals, cross the "interruption period" in the era of land and sea parity, and push the Company to a new round of rapid development; focus on innovation-driven, and firmly build a new round of offshore and onshore product lines to adapt to the new market; as well as focus on "building circles and clusters", make overall arrangement of the southeast coast, the desert, gobi and wasteland, and the central region, actively promote the innovation in application scenarios, and accelerate the construction of a wind, light, storage and hydrogen ecosystem. The Company ushers in the best period in history in terms of its operating fundamentals, and makes great achievements such as the successful listing of GDR on the London Stock Exchange, the record high of nearly 20 million kWh orders and the innovation in floating products, refreshing the ranking of China's Top 500 and the Global Top 500 new energy companies, and vigorously promoting Mingyang to stand at a new higher historical starting point and move towards the Global Top 500.

The brand-new year of 2023 is a crucial year for Mingyang to step into high-quality development and forge ahead into the Global Top 500. Meanwhile, we are soberly aware that Mingyang can do better, still needs to make great efforts in customer resources, innovation resources, human resources, product quality, service and operational efficiency, strategy implementation, etc., as well as practices internal strength and reconstructs governance. It is necessary to grasp the general trend, control the changes, take advantage of the situations, make great efforts to promote the high end, industrial clustering and application scenarios of new energy technologies, grasp the main line of "three leads and two forces", and adhere to customer domination and excellent operation. We adhere to technology first and innovation drive, insist on prosperity based on the sea and foothold in the ocean, as well as persist in value creation and scenario application. We create guiding demands relying on smart energy application scenarios, breed new growth curves and sustainable competitiveness, extend to industrial clustering, whole-value chain and whole-life cycle value creation, and build new kinetic energy from leapfrogging to surpassing development. By making extraordinary efforts to achieve the "three hundred billion" goals, we will embark on a new journey to forge ahead into the Global Top 500!

About This Report

Introduction

Based on the objective, standardized, transparent and comprehensive principles, the “2022 Mingyang Smart Energy Group ESG Report” discloses in detail Mingyang Smart Energy’ s practice and performance in corporate governance, environmental protection, social responsibility fields in 2022.

Time frame

From January 1, 2022 to December 31, 2022. To ensure the integrity of the Report, some contents are beyond the above scope.

Release cycle

This report is an annual report. Last year’s social responsibility report was released on April 15, 2022.

Report scope

The scope of this report covers the business of Mingyang Smart Energy Group Co., Ltd and its subsidiaries.

Compilation basis

UN Global Compact Ten Principle

UN Sustainable Development Goals (SDGs)

ISO: IS026000: Guidance on Social Responsibility (2010)

GRI: Guidance on the Preparation of Sustainable Development Report (GRIG4)

CASS: Guidance on the Preparation of China CSR Report (CASS-CSR3.0)

Data sources and reliability assurance

The sources of data used in this report include public data from government departments, related internal statistical reports of Mingyang Smart Energy, third-party questionnaires, administrative documents and reports, etc. Mingyang Smart Energy guarantees that there are no false records, misleading statements or major omissions in this report.

Appellation description

For ease of expression and reading, “Mingyang Smart Energy Group Co., Ltd.” in this report is also referred to as “Mingyang Smart Energy”, “Mingyang”, “Mingyang Group”, “Company” or “We”.

Report acquisition

You can browse or download this report at the official website of Mingyang Smart Energy Group Co., Ltd. (www.myse.com.cn). For any questions or suggestions, you can send an email to myse@mywind.com.cn, or call 0760-28138687.

Index to the “Sustainable Development Report Standards”

	No.	Content	Pages
Basis	101-1	Reporting basis, including the reporting principles needed to define the content and quality of the report	P91
Organizational Profile	102-1	Name of organization	P3
	102-2	Events, Brands, Products and Services a. Organization activity description b. Major brands, products and services, including descriptions of any prohibited products or services in certain markets	P5
	102-3	Location of organization' s headquarters	P91
	102-4	The number of countries in which the organization operates its business, the names of countries in which it operates a substantial amount of business, and/or names of countries relevant to topics covered in this report	P6
	102-5	Nature and legal form of ownership	P3
	102-6	Markets served (including geographic locations where products and services are provided; industries served; types of clients and beneficiaries)	P6
	102-7	Organization size (including total number of employees; total number of sites; net sales or net income; total market value broken down by debt and equity; number of products or services provided)	P67
	102-8	Employee and other worker information a. Total number of employees by employment contract (fixed and temporary) and gender b. Total number of employees by employment contract (fixed and temporary) and region c. Total number of permanent employees by employment type (full-time and part-time) and gender d. Is a large part of the organization’ s activities undertaken by informal employees? If applicable, please describe the nature and proportion of work undertaken by informal employees e. Significant changes in the number of employees disclosed in 102-8-a, 102-8-b and 102-8-c (such as seasonal changes in tourism or agricultural employment) f. Explain the statistical methodology of the data, including any assumptions made	P67
	102-9	Describe the supply chain of the organization, including the main contents related to the organization's activities, major brands, products and services	P38
	102-10	Significant changes in the size, structure, ownership or supply chain of the organization during the reporting period (including changes in operating location or business; changes in equity structure and other capital formation, maintenance and business changes; changes in supplier location, supply chain structure, relationship with suppliers)	N/A
	102-11	Whether and how the organization applies the precautionary principle or policy	N/A
	102-12	An externally initiated economic, environmental, social charters, principles, or otherwise, which the organization participates in or supports initiative	P87
	102-13	Major industry associations or other associations, and national or international initiatives to which the organization is a member	P88

	No.	Content	Pages
Strategy	102-14	Statement by the organization's top decision-maker (such as CEO, chairman or equivalent) on the relevance of sustainability to the organization and the organization's sustainability strategy	P19
	102-15	Describe key impacts, risks and opportunities	P1
Ethics and Integrity	102-16	Describe the organization's values, principles, standards and codes of conduct	P4
Governance	102-18	Governance structure a. Organization's governance structure, including the highest governance body committee; b. Committee responsible for decision-making on economic, environmental and social issues.	P25
Stakeholder Engagement	102-40	List of stakeholders the organization is involved in	P21
	102-41	% of total employees covered by collective bargaining agreements	N/A
	102-42	For selected stakeholders, explain the basis for identification and selection	P22
	102-43	Methods of stakeholder engagement, including frequency of engagement by different stakeholder types and groups, and indication of whether any engagements are conducted specifically for the preparation of the report	P22
	102-44	Key issues and concerns raised through stakeholder engagement, including how the organization responds and the stakeholder groups that raise each major issue and concern	P22
Report Overview	102-45	Entities covered in the consolidated financial statements a. List all entities included in the institution's consolidated financial statements or equivalent documents b. Indicate whether any entities included in the consolidated financial statements or equivalent documents are not included in the Sustainable Development Report	P91
	102-46	Defining report content and topic boundaries a. Describe the process for defining report content and topic boundaries b. Describe how the organization applies the reporting principles that define the report content	P91
	102-47	List all substantive issues identified in the process of defining report content	P22
	102-48	Explain the impact of the restatement of information contained in previous report, and the reasons for such restatement	N/A
	102-49	Compared with the previous report, explain the major changes in substantive issues and issue boundaries	N/A
	102-50	The reporting period (e.g. financial year or calendar year) of the information provided	P91
	102-51	Date of last report (if applicable)	P91
	102-52	Reporting cycle (e.g. once a year, once every two years)	P91
	102-53	Contact(s) who can answer questions about the report or its content	P91
	102-54	The report of organization statement is compiled according to GRI standard to select the core or comprehensive scheme	P91
	102-55	Each of the standards adopted is detailed in the GRI content index, and all contents disclosed in the report are listed accordingly. Each disclosure should include the disclosure number, page number or URL. Where applicable and where permitted, request for abbreviated reasons when required disclosure cannot be made	P91

	No.	Content	Pages
Report Overview	102-56	External attestation a. Description of current practice and organizational policy for seeking external attestation on reports b. If the report is externally attested, the attestation report, statement and opinion need to be cited. If not listed in the attestation report attached to the Sustainable Development Report, the attested or unattested contents and basis should be stated, including the attestation standards used, the level of attestation achieved, and any limitations in the attestation process. Describe the relationship between the reporting agency and the attestation service provider. Indicate whether the highest governance body or senior management is involved in seeking attestation for the Sustainable Development Report	N/A
Economy	103-1	For each substantive issue, explain why the issue is substantive, its boundary and any specific restrictions on the boundary of such issue.	P22
	103-2	Management approach and its components a. Explain how the organization manages this issue b. State the purpose of management approach c. Describe the policies, commitments, goals and objectives, responsibilities, resources, grievance mechanisms and specific actions	P19
	103-3	Explain how the organization evaluates management (including the mechanisms used to evaluate the effectiveness of management approach; evaluation results of management approach; any relevant adjustments made to the management approach)	P19
Economic performance	201-1	Economic value directly generated and distributed by the institution a. Direct economic value generated and distributed on an accrual basis, including the basic components of the organization's global operations, and if the data is presented on a cash basis, the reasons for the decision are also reported b. Direct economic value generated and distributed separately at the national, regional or market levels, as well as on the criteria used to define materiality	P8
Indirect economic impact	203-1	Infrastructure investment and supporting services a. Degree of development of major infrastructure investments and supporting services b. Current or expected positive and negative impacts on the community and local economy c. Commercial, in-kind or unpaid investments and services	P87
	16-203-2	Significant indirect economic impacts and their importance	P87
Environment	103-1	For each substantive issue, explain why the issue is substantive, its boundary and any specific restrictions on the boundary of such issue	P21
	103-2	Management approach and its components a. Explain how the organization manages this issue b. State the purpose of management approach c. Describe the policies, commitments, goals and objectives, responsibilities, resources, grievance mechanisms and specific actions	P19

	No.	Content	Pages
Environment	103-3	Explain how the organization evaluates management (including the mechanisms used to evaluate the effectiveness of management approach; evaluation results of management approach; any relevant adjustments made to the management approach)	P19
Energy	302-1	Energy consumption within the organization (in joules or multiples)	P7
		a. Total fuel consumption from non-renewable sources within the organization, including the type of fuel used	
		b. Total fuel consumption from renewable sources within the organization, including the type of fuel used	
		c. Power consumption, heat consumption, cold consumption and steam consumption	
		d. Electricity sales, heat sales, cooling sales, gas sales	
		e. Total energy consumption within the organization	
		f. Standards, methods, assumptions and/or calculation tools used, and sources of conversion factors used	
	302-3	Energy intensity	P7
		a. The energy intensity ratio of the organization and the organization's specific indicators used to calculate this ratio	
		b. Types of energy included in the intensity ratio	
		c. Whether the ratio uses energy consumption within the organization, energy consumption outside the organization, or both	
	302-4	Reduced energy consumption (in joules or multiples)	P7
		a. Energy savings directly driven by conservation and energy efficiency initiatives	
		b. Types of energy included in energy savings	
		c. Basis used to calculate savings, such as base year or baseline, and justification for selection	
		d. Standards, methods, assumptions and/or calculation tools used	
	302-5	Reduced energy demands for products and services (in joules or multiples)	P7
		a. Energy reduction requirements for products and services sold during the reporting period	
		b. Basis used to calculate savings, such as base year or baseline, and justification for selection	
		c. Standards, methods, assumptions and/or calculation tools used	
Water resources	303-1	A breakdown of total water withdrawals by source and a description of the criteria, methods and assumptions used (including surface water; groundwater; stormwater collected and stored directly by an organization; wastewater from another organization; municipal water supply or others)	P7
Emissions	305-1	Direct Greenhouse Gas Emissions (Scope 1)	P7
	305-2	Indirect Greenhouse Gas Emissions (Scope 2)	P7
	305-3	Greenhouse Gas Emission Intensity	P7
Sewage and waste	306-2	Total weight of waste classified by category and treatment method (including total weight of hazardous waste; total weight of non-hazardous waste; process of determining waste treatment method)	P7
Environmental compliance	307-1	Significant monetary fines, total non-monetary sanctions, and cases brought through the dispute settlement mechanism for violations of environmental laws and regulations; if not occurred, the facts should be stated briefly	N/A

	No.	Content	Pages
Society	103-1	For each substantive issue, explain why the issue is substantive, its boundary and any specific restrictions on the boundary of such issue	P21
	103-2	Management approach and its components	P19
		a. Explain how the organization manages this issue	
		b. State the purpose of management approach	
		c. Describe the policies, commitments, goals and objectives, responsibilities, resources, grievance mechanisms and specific actions	
	103-3	Explain how the organization evaluates management (including the mechanisms used to evaluate the effectiveness of management approach; evaluation results of management approach; any relevant adjustments made to management approach)	P19
Employment	401-1	Total and percentage of new and lost employees by age group, gender and region	P67
	401-3	According to gender, the total number of employees who are entitled to parental leave/take parental leave/return to work after the end of parental leave within the reporting period and are still in service after 12 months, as well as the return rate and retention rate of employees on leave	P74
Occupational health and safety	403-2	Rates of occupational injury categories, occupational injuries, occupational diseases, lost work days, absenteeism, etc.	P77
Training and education	404-1	Average training hours per employee per year by gender and employee category	P71
	404-2	Employee skill improvement program and transitional assistance program to promote continued employability and manage career termination due to retirement or separation	P72
	404-3	Percentage of employees receiving regular performance and career development reviews by gender and employee category	P71
Diversity and equal opportunity	405-1	Percentage of governance body members and categories of employees by gender, age group and other indicators of diversity	P67
Anti-discrimination	406-1	Total number and status of discrimination incidents and actions taken during the reporting period	N/A
Child labor	408-1	Operations and suppliers that use child labor and young workers for dangerous work; operations and suppliers at risk of significant incidents of child labor, and measures taken by the organization during the reporting period to promote the effective abolition of child labor	N/A
Forced and compulsory labor	409-1	Operations and suppliers identified as having a significant risk of incidents of forced or compulsory labor, and measures to help eliminate all forms of forced or compulsory labor	N/A
Local community	413-2	Operations with actual or potential significant negative impacts on local communities, including location of operations and significant negative impacts	N/A
Supplier assessment	414-2	Significant actual and potential negative social impacts from the supply chain, and actions taken	N/A
		a. Number of suppliers who have conducted social impact assessments	
		b. Number of suppliers identified as having actual and potential significant negative social impacts and significant negative impacts	
		c. Percentage of suppliers who agreed to improve after assessment	
		d. Percentage of suppliers who decided to terminate the relationship after assessment	
Customer privacy	418-1	Total number of substantiated complaints of breach of customer privacy and loss of customer data	N/A

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Goal 2	Eliminate hunger, achieve food security, improve nutrition and promote sustainable agriculture.	P87
Goal 3	Ensure a healthy lifestyle and promote the well-being of people of all ages.	P74
Goal 4	Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all.	P87
Goal 5	Achieve gender equality and empower all women and girls.	P74
Goal 6	Clean drinking water and water utilization for all.	P81
Goal 7	Ensure access to affordable, reliable and sustainable modem energy for all.	P47
Goal 8	Promote sustained, inclusive and sustainable economic growth, achieve full and productive employment and ensure decent work for all.	P66
Goal 9	Build risk-resilient infrastructure, promote inclusive and sustainable industries, and drive innovation.	P41
Goal 10	Reduce inequalities within and between countries.	P41
Goal 11	Build inclusive, safe, risk-resilient and sustainable cities and human settlements.	P19
Goal 12	Ensure sustainable consumption and production patterns.	P47
Goal 13	Take urgent actions to combat climate change and its impacts.	P47
Goal 14	Protect and promote sustainable use of oceans and marine resources for sustainable development.	P47
Goal 15	Protect, restore and promote sustainable use of terrestrial ecosystems, sustainable forest management, combat desertification, stop and reverse land degradation, and curb the loss of biodiversity.	P83
Goal 16	Promote peaceful and inclusive societies conducive to sustainable development, provide access to justice for all, and establish effective, accountable and inclusive institutions at all levels.	P23
Goal 17	Strengthen the means of implementation and reinvigorate the global partnership for sustainable development.	P35

Feedback Form

Dear readers:

Hello! Thank you very much for reading the "2022 Mingyang Smart Energy Group ESG Report" . We're very concerned about your comments on this report.

Please give us your comments, suggestions and feedback on this report. In this way, we can continue to improve the report.

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Optional questions: (please tick " √ " in the appropriate position)

1. What is your identity, relative to Mingyang Smart Energy?

○ Government ○ Staff ○ The public ○ Investor

○ Customer ○ Partner ○ Academic institution ○ Competitor

2. What is your general impression of the report?

○ Excellent ○ Good ○ Average ○ Bad ○ Very Bad

3. What do you think of the quality of social responsibility information disclosed in the report?

○ Excellent ○ Good ○ Average ○ Bad ○ Very Bad

4. What do you think about the report structure?

○ Very Reasonable ○ Reasonable ○ Average ○ Unreasonable ○ Very unreasonable

5. What do you think about the layout design and presentation of the report?

○ Excellent ○ Good ○ Average ○ Bad ○ Very Bad

Open-ended questions:

Your valuable comments and suggestions on the "2022 Mingyang Smart Energy Group ESG Report" are welcome.