



2020迪拜世博会中国馆官方合作伙伴
CHINA PAVILION EXPO 2020 DUBAI UAE OFFICIAL PARTNER

2019 Environmental Social and Governance Report

Shanghai Electric Group Company Limited



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Notes for Report Preparation



Brief Introduction

Shanghai Electric Group Company Limited (“Shanghai Electric”, “Group”, “Company” and “we”) began to prepare and disclose the 2009 annual social responsibility report from 2010, and to disclose its Environmental, Social and Governance (ESG) report since 2016, and issued the report on annual basis. This is the eleventh Corporate Social Responsibility Report and the fourth ESG report of our Group, truthfully revealing the Group's performance of its responsibility to shareholders, customers, partners, employees, environment, communities and other important stakeholders. And it shows the Group's performance in environment, society and governance.



Basis of Preparation

This report is mainly prepared with reference to the Environmental, Social and Governance Reporting Guide of The Stock Exchange of Hong Kong Limited and Guidelines for Preparing and Reviewing the Internal Control Report and Social Responsibility Report of Listed Companies of Shanghai Stock Exchange, and partially refers to the GRI Standard of Global Reporting Initiative (GRI), aiming to disclose information on environmental, social and governance performance of the corporate for relevant parties and shareholders. The content of this report is determined according to a set of established procedures, including identifying and ranking important stakeholders and ESG issues, collecting relevant data of the report, and reviewing quantitative data in the report.



Scope and Boundary of the Report

The policies and data provided in this report cover the Group's headquarter, internal divisions, branches, wholly-owned subsidiaries, holding companies and some associates, and the environmental data includes the important production-oriented subsidiaries of the Group. The data disclosure is from January 1, 2019 to December 31, 2019. Unless otherwise specified, the currency mentioned in the report is RMB, and the data density is based on revenue data in 2019 annual report of Shanghai Electric.



Source of Data and Guarantee for Reliability

The data and cases in this report mainly come from the Group's statistical reports and related documents. The report has not been verified by a third party. The Board of the Group undertakes that there are no false records or misleading statements in this report, and is responsible for the authenticity, accuracy and completeness of its content.



Confirmation and Approval

This report was confirmed by the Management and then approved by the Board on April 15, 2020.



Zheng Jianhua

Secretary of Party Committee
Chairman and CEO

Chairman's Statement

Over the past 70 years, Shanghai Electric has made countless glories and contributed much to China and its national rejuvenation. Our predecessors, overcoming all obstacles, have left us with a valuable wealth that has enabled Shanghai Electric to enter a new era unhurriedly. 2019 is a crucial year for Shanghai Electric. Facing a complex external situation, the Group has rallied to face these difficulties, greatly changing the Group's spirit. All indicators reached record highs, beginning the ascent to the second step in its strategic goals.

Looking back at 2019, we successfully held the first Congress of the Shanghai Electric Group of the Communist Party of China, and focused on the grand goal of “creating another Shanghai Electric” in three to five years into the resolution of the Party Congress to endow this grand goal to every party member, official, and worker in the Group, also serving as the solemn commitment from the majority of Shanghai Electric to both the Party and the country. We have firmly implemented an education campaign with the theme “Stay True to the Original Aspirations and Keep in Mind the Founding Mission”. This has endowed a strong spiritual source and inexhaustible power to continuously promote the third step in its strategic goals.

This year, we played the leading role in serving the national strategy, and made major scientific and technological breakthroughs in many fields including gas turbines, nuclear main pumps, efficient clean coal power, offshore wind powers, 3D printing, liquid flow batteries. Shanghai Electric’s SEunicloud industrial Internet cloud platform was officially released, symbolizing a key step towards the digital age. Overseas projects have opened access to markets in Britain, Japan, Australia, Greece, Spain, and many other developed countries. An overseas procurement contract of RMB 2 billion was signed at the China International Expo, adding another notch below “made in Shanghai” to our resume. The Iraqi Prime Minister and a group of international friends visited Shanghai Electric, and Premier Li Keqiang praised Shanghai Electric as the Creator of Miracles when he visited the base in Lingang Special Area in the Shanghai Pilot Free Trade Zone.

This year, we accelerated innovation to replace old growth drivers with new ones by readjusting and optimizing our industrial structure. Traditional industries have pressed the fast-forward button on “four modernizations and reshaping”, namely digitalization, intelligentization, internationalization, and service-oriented transformation. On top of that strategic emerging industries have realized “multi-pronged” acceleration for mergers and acquisitions, joint ventures and cooperation, independent research and development, and venture capital. We have achieved new layouts in energy storage battery equipment, intelligent manufacturing, and other fields, and the proportion of strategic emerging industries will rise to more than 1/3.

This year, we continued to promote reform and innovation of systems and mechanisms. The Group launched its A-share restricted stock incentive plan, business division and enterprises accelerated mixed ownership reform, and improved the excess profit-sharing mechanism. The Group’s motivation, pressure, and vitality were improved, and a sense of belonging among officials and workers was significantly bolstered.

This year, we established a comprehensive risk management and control system, improved upon it, and enhanced its implementation capacity. While developing, we pay great attention to risk prevention and control, comprehensively enhance our risk prevention and control, and prioritize risk prevention awareness and control. In the future, we will seek efficient and high-quality development on this basis.

Shanghai Electric is now creating a positive atmosphere for individuals to forge ahead and possess the courage to innovate. By establishing the platform, more talented people will have the chance to fully display what makes them special. Every employee in Shanghai Electric is an important participant, advocate, and witness. We should work hard for the generations of Shanghai Electric, be responsible for them, for shareholders, customers, and society.

Guided by the “Electric Dream”, we will not indulge in fantasy and empty rhetoric, and develop sustainably, positively, and healthily along the development path of digitalization, intelligentization, internationalization, and service-oriented transformation. Those who share the same desire will win, and the people here at Shanghai Electric will work together and forge ahead, realizing the “Electric Dream”!

Secretary of Party Committee
Chairman and CEO



Huang Ou

Deputy Secretary of Party Committee
President

President's Statement

Shanghai Electric has made brilliant successes coalesced through 70 years of creativity and hard work. We cherish the “Electric Dream”, explore the path towards social responsibility inherent in sustainable development, and contribute to our nation’s rejuvenation. In 2019, guided by a new strategy, Shanghai Electric continues to take “green, environmentally-friendly, intelligent, interconnected, and comprehensive system solutions” as its direction, as well as shouldering global sustainable development as its own responsibility. Remaining responsible to our shareholders, customers, partners, employees, the environment, and society, we will tenaciously become a respected world-class enterprise!

Shanghai Electric adheres to the social responsibility concept of “compliance first, integrity utmost important, innovation-driven, win-win cooperation, and sustainable development” as the guiding force to continuously improve internal control, risk management, and compliance management systems. We further expand the leadership participating in environmental, social, and governance issues along with implementing the responsibilities of the corporate social responsibility governance team. We will strive to build a highly collaborative and active social responsibility governance team to safeguard the rights and interests of investors.

Focusing on collaborative development in energy equipment, industrial equipment, and integrated services, Shanghai Electric has always regarded customer value as the foothold beneath development and continues to expand in terms of quality assurance and value innovation. In 2019, we officially launched the SEunicloud industrial Internet cloud platform to explore a new business model based on a user-centric platform. In addition, this year, customer satisfaction for Shanghai Electric reached an all-new high, as well as a new low in customer complaints, while customer privacy and information security operations run smoothly.

To improve supply chain comprehensive efficiency and sustainable development, and to create a “clean, open, and mutually beneficial” supply chain system, we continue to improve the online management platform for suppliers, promote the centralized procurement

process and management, and help suppliers learn about compliance practices. In addition, we are further strengthening resource docking with external enterprises; integrating global talent, capital, information, technology and other resource elements; and sharing technological progress. Ultimately, we will promote industry development and ensure we abide by competition laws and regulations and oppose commercial corruption.

A people-oriented strategy is Shanghai Electric’s constant focus. By fully protecting its employees’ legitimate rights and interests, we built a scientific management system that covers many aspects, such as employee welfare, health and safety, training and development, life balance, and more. In 2019, we focused on strengthening external recruitment and inspiring our current staff, and for their benefit continue to promote and standardize occupational health and safety management, clarify promotional paths, be aware of employee needs, and strive to improve their well-being.

As a positive response to environmental protection and climate change, Shanghai Electric has never ceased implementing its energy efficiency management mechanism across production and offices, formulating and implementing management systems in accordance with the law to ensure emissions and pollution are strictly controlled. We adhere to green manufacturing, and rely on internal Research and Development(R&D) and our innovation to improve green energy equipment, promote technological innovation in environmental protection

equipment, so that we maintain a balance with nature.

Committed to building a harmonious society, Shanghai Electric takes the benchmark of social responsibility as the requirement to cooperate with the government in the Internet of Everything, traffic governance, industrial upgrading, and environmental protection to actively improve people’s livelihood. It seeks to contribute to the community and considers that its own responsibility. It will invest resources in poverty alleviation, education, public welfare, disaster relief, and other areas to link corporate development with a harmonious society.

The efforts of our predecessors have laid the foundation upon which Shanghai Electric’s current development was born, and this platform is the springboard for more brilliant leaps to come. We will look up to the sky towards the “Electric Dream” while maintaining our humble attitude, bravely shoulder the responsibility for sustainable development in the industry and for society, respond more positively to stakeholder concerns, and help enterprises, society and the environment achieve sustainable development.



Deputy Secretary of Party Committee
President

Highlights

Responsibility Model



Corporate Profile

Legal name of the Company in Chinese	上海電氣集團股份有限公司
Abbreviated legal name of the Company in Chinese	上海電氣
Legal name of the Company in English	Shanghai Electric Group Company Limited
Abbreviated legal name of the Company in English	Shanghai Electric
A share stock code	601727
H share stock code	02727
Registered address of the Company	30/F, Maxdo Center, No.8 Xingyi Road, Shanghai
Business address of the Company	No. 110 Sichuan Middle Road, Shanghai
Company website	www.shanghai-electric.com
Company email	ir@shanghai-electric.com
Company telephone	+86(0)21 33261888
Company fax	+86(0)21 34695780

Core Business

Shanghai Electric is a large integrated equipment manufacturing conglomerate, and mainly operates three business segments namely energy equipment, industrial equipment and integrated services. Shanghai Electric is committed to providing customers with green, environmental-friendly, intelligent and interconnected technology integration and system solutions. Its products include thermal power generating units (coal-fired and gas-fired power), nuclear power generating units, wind power generation equipment, power transmission and distribution equipment, environmental protection equipment, automation equipment, elevators, rail transportation equipment, machine tool, etc.

Key Performance

List of major subsidiaries involved in environmental data

1	Shanghai Electric Power Generation Equipment Co., Ltd Turbine Works
2	Shanghai Electric Power Generation Equipment Co., Ltd Auxiliary Equipment Works
3	Shanghai Electric Power Generation Equipment Co., Ltd Turbine Generator Works
4	Shanghai Boiler Works, Ltd.
5	Shanghai Electric Group Shanghai Electric Machinery Co., Ltd.
6	Shanghai Electric Heavy Machinery Milling Special Equipment Co., Ltd.
7	Shanghai Electric Wind Power Equipment Dongtai Co., Ltd.
8	Shanghai Electric Wind Power Equipment Heilongjiang Co., Ltd.
9	Shanghai Electric Wind Power Equipment Gansu Co., Ltd.
10	Shanghai Electric Wind Power Equipment Yunnan Co., Ltd.
11	Shanghai Electric Wind Power Equipment Hebei Co., Ltd.
12	Shanghai Electric Appliances Ceramics Factory Co., Ltd.
13	Shanghai Electric Power-Electronics Co., Ltd.
14	Shanghai Nanqiao Transformer Co., Ltd.
15	Shanghai Najie Complete Sets Of Electric Co., Ltd.
16	Shanghai Feihang Electric Wire And Cable Co., Ltd.
17	Shanghai Dahua Electrical Equipment Co., Ltd.
18	Shanghai Nanhua-Lanling Electrical Co., Ltd.
19	Shanghai Jiejin Power New Materials Co., Ltd.
20	Wujiang Transformer Co., Ltd.
21	Shanghai Huapu Cable., Ltd.
22	Renmin Electrical Apparatus Works of Shanghai Electric Group Co., Ltd
23	Shanghai Mitsubishi Elevator Co., Ltd.
24	Goss Graphic Systems(China)Co., Ltd.
25	Shanghai Simike Welding Material Co., Ltd.
26	Shanghai Electrical Hydraulics and Pneumatics Co., Ltd
27	Shanghai United Bearing Co., Ltd.
28	Shanghai Tian'an Bearing Co., Ltd.
29	Shanghai Zhenhua Bearing Plant Co., Ltd.
30	Wuxi Turbine Blade Co., Ltd
31	Shanghai Tool Works Co., Ltd.
32	Shanghai High Strength Bolts Plant Co., Ltd.
33	Shanghai Centrifuge Institute Co., Ltd.
34	Shanghai Cyeco Environmental Technology Co., Ltd.
35	Shanghai Denso Fuel Injection Co., Ltd.
36	Shanghai Marine Crankshaft Co., Ltd.
37	Shanghai First Machine Tool Works Co., Ltd.
38	Shanghai Electric Shanghai Heavy Machinery Forging Co., Ltd.
39	Shanghai Electric Nuclear Power Equipment Co. Ltd.
40	SEC-KSB Nuclear Pumps&Valves Co., Ltd.
41	Shanghai Electric Machine Tool Works, Ltd.
42	Zhangjiagang Jiangnan Forging Co., Ltd.
43	Wuxi Hongqi Shipyard Co., Ltd.
44	Yumen Xinneng Photothermal No.1 Power Co., Ltd.

Environmental Performance Indicators

Environmental Performance Indicators	2017	2018	2019
Total investment in environmental protection (RMB 10 thousand)	6,748	7,590	10,950
Greenhouse gas emission (tons of carbon dioxide /RMB 100 million)	336.99	242.7	271.53
Hazardous waste (tons /RMB 100 million)	4.51	3.4	2.8

Social Performance Indicators

Social Performance Indicators	2017	2018	2019
Total number of employees	29,552	30,182	33,720
Proportion with labor contract	100%	100%	100%
Proportion with social insurance coverage	100%	100%	100%
Proportion with trade union coverage	100%	100%	100%
Proportion of female management personnel	20.1%	21.5%	24.3%
Proportion with employee physical examination coverage	100%	100%	100%
Total investment in employee trainings (RMB 10 thousand)	8,735	8,786	7,500
Proportion with employee training coverage	99.8%	99.8%	99.9%
Training time per capita (days)	3.5	3.5	3.5
Employee satisfaction	97.5%	97.6%	97.8%
Employee turnover rate	2.9%	2.8%	2.1%
The number of working days lost due to work-related injuries	2,314	2,208	1,814
New cases of occupational disease	0	0	0
Charitable donations RMB10 thousand	347.5	327.1	1,177

Social Contribution Value per Share for 2019 (RMB)

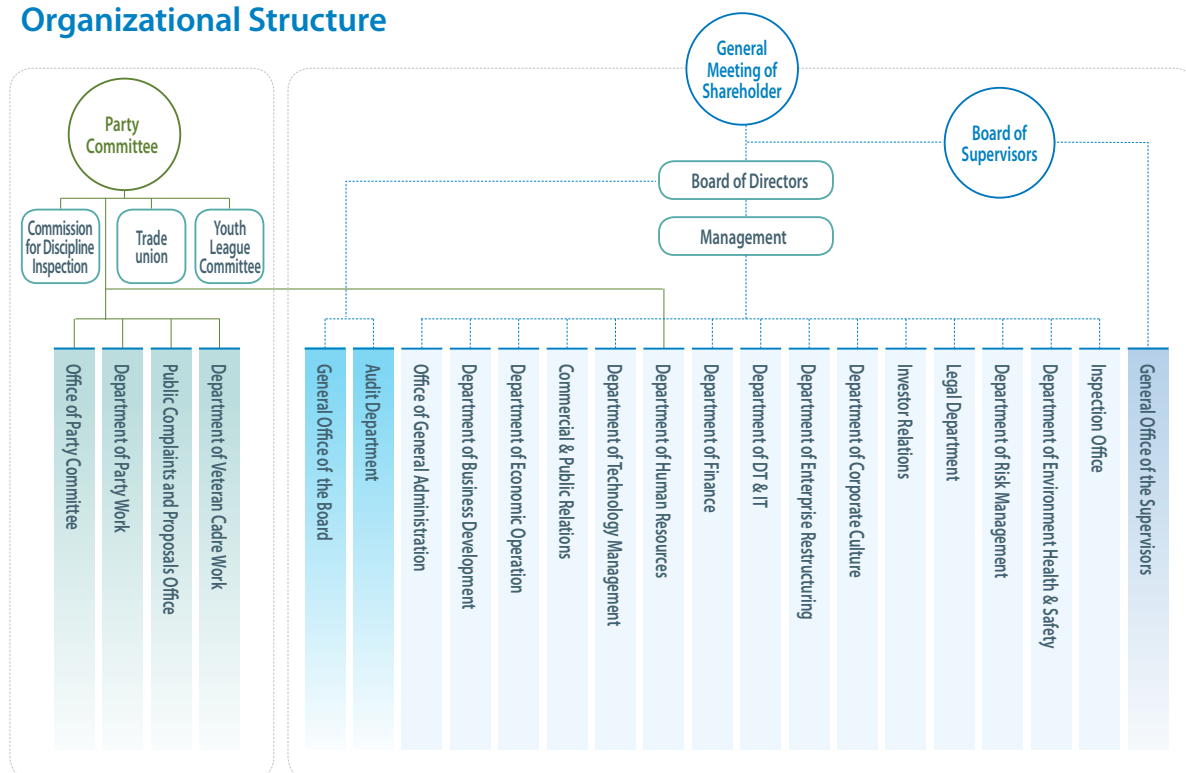
Basic earnings per share	0.25
Add: tax contribution per share	0.34
Add: emolument contribution per share	0.63
Add: debt service contribution per share	0.12
Add: social donation per share	0.0003
Social contribution value per share	1.34

Key financial indicators for 2019(Unit: RMB100 million)

Total assets	2,805.24
Revenue	1,275.09
Net assets attributable to owners of the Company	633.46
Net profit attributable to owners of the Company	37.2



Organizational Structure



Honors received in this year

2019 National Science and Technology Progress Awards

Number	Name of projects awarded	Name of entity awarded	Grade awarded
1	Key Technology and Application of Steam Turbine Series Vibration Damping Blade Design	Shanghai Electric Power Station Equipment Co., Ltd. Shanghai Steam Turbine Factory	Second class prize
2	Application development and engineering of domestic amorphous strip in power system	Wujiang Transformer Co., Ltd.	Second class prize

2019 China Machinery Industry Science and Technology Awards

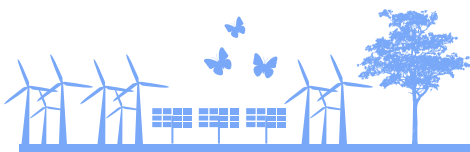
Number	Name of projects awarded	Name of entity awarded	Grade awarded
1	Development of 1,000MW ultra-supercritical secondary reheat steam turbine and boiler	Shanghai Electric Power Station Equipment Co., Ltd. Shanghai Boiler Factory Co., Ltd.	First class prize
2	Key technology and application of energy field compound laser surface modification	Shanghai Electric Power Station Equipment Co., Ltd.	First class prize
3	Serialized development of a million-kilowatt-class full-capacity feed-water pump turbine	Shanghai Steam Turbine Factory Co., Ltd.	Third class prize
4	Development of a million kilowatt nuclear power condenser	Shanghai Electric Power Station Equipment Co., Ltd.	Third class prize
5	Advanced manufacturing technology of high-temperature gas-cooled reactor pressure vessel	Shanghai Electric Nuclear Power Equipment Co., Ltd.	Third class prize
6	Main bearings for industrial robots, cycloid reducers	Shanghai United Rolling Bearing Co., Ltd.	Third class prize
7	Development of key material CB2 / FB2 of 620 °C grade ultra-supercritical steam turbine and its casting and forging	Shanghai Honggang Power Station Equipment Casting and Forging Co., Ltd.	Third class prize

2019 Shanghai Science and Technology Awards

Number	Name of projects awarded	Name of entity awarded	Grade awarded
1	Fracture evaluation and control technology of major pressure equipment based on restraint theory	Shanghai Electric Power Station Equipment Co., Ltd. Shanghai Steam Turbine Factory Shanghai Electric Nuclear Power Equipment Co., Ltd.	First class prize
2	Million kilowatt class secondary reheat ultra-supercritical steam turbine	Shanghai Electric Power Station Equipment Co., Ltd.	First class prize
3	Key technologies and applications of wind power conversion and machine network softening control	Shanghai Electric Wind Power Group Co., Ltd. Shanghai Electric Power Electronics Co., Ltd.	First class prize
4	The Key Manufacturing Technology and Application of the Third Generation Passive Nuclear Power Steam Generator	Shanghai Electric Nuclear Power Equipment Co., Ltd.	Second class prize
5	Development of the world's first 1,000MW ultra-supercritical secondary reheat boiler	Shanghai Boiler Factory Co., Ltd.	Second class prize
6	Development of internal components of AP1,000 nuclear power reactor	Shanghai No.1 Machine Tool Plant Co., Ltd.	Second class prize
7	Key technology and engineering practice of distributed energy integration application	Shanghai Electric Group Co., Ltd. Shanghai Environmental Protection Engineering Co., Ltd.	Second class prize
8	Key technology and application of urban rail transit high capacity control system	Shanghai Electric Thales Transportation Automation System Co., Ltd.	Second class prize
9	Energy-saving ultra-high-speed intelligent flexible precision winding technology and its application	Shanghai Electric Fujii Electric Technology Co., Ltd.	Second class prize
10	Efficient high-parameter ultra-supercritical three-cylinder two-exhaust steam 660MW air condensing steam turbine	Shanghai Electric Power Station Equipment Co., Ltd.	Third class prize
11	Research and Application of 310MW Advanced F-Class Gas Turbine Localization	Shanghai Electric Gas Turbine Co., Ltd.	Third class prize
12	Application and adaptability development of energy-saving and environmental protection technology of ultra-supercritical unit	Shanghai Boiler Factory Co., Ltd. Shanghai Electric Power Station Equipment Co., Ltd. Shanghai Steam Turbine Factory	Third class prize
13	Research and application of intelligent CNC machining system	Shanghai Boiler Factory Co., Ltd. Shanghai Electric Power Station Equipment Co., Ltd. Shanghai Steam Turbine Factory Shanghai Electric Power Station Equipment Co., Ltd.	Third class prize

2019 Science and Technology Awards in Other Provinces and Cities

Number	Name of projects awarded	Name of entity awarded	Grade awarded
1	Research and application of key technologies for efficient and intelligent machining of two-machine blades	Wuxi Turbine Blade Co., Ltd.	First class prize in Jiangsu Province
2	Research and application of key technologies for smart clean heating in urban gas-fired thermal power centers	Shanghai Electric Power Station Equipment Co., Ltd.	Second class prize in Beijing

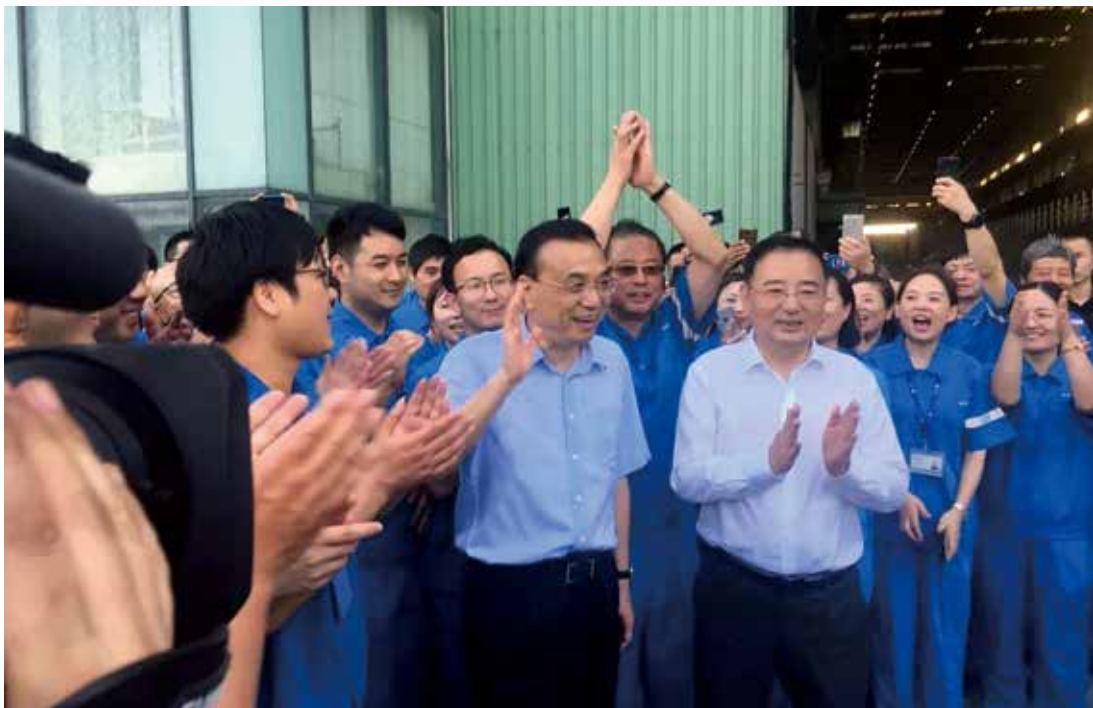


2019 Top Ten News

01

Li Keqiang inspected Shanghai Electric Lingang Base

On July 22, 2019, Li Keqiang, Member of the Standing Committee of the Political Bureau of the Communist Party of China(CPC) Central Committee and Premier of the State Council, accompanied by Li Qiang, Member of the Political Bureau of the CPC Central Committee and Secretary of the Shanghai Municipal Committee, and Ying Yong, Deputy Secretary of the Shanghai Municipal Committee and Mayor, inspected the Shanghai Electric Group Lingang Heavy Equipment Base. Li Keqiang affirmed that the major equipment developed by Shanghai Electric is at the forefront at home and abroad, and praised Shanghai Electric for many times to create miracles. He encouraged Shanghai Electric to aim at being world-class, participate more actively in the international market competition, and make more contributions to improving China's major equipment manufacturing level, helping economic development and improving people's livelihood.





02

Celebrated the 70th anniversary of the founding of the People's Republic of China to gather great power

On the evening of October 17, 2019, Shanghai Electric celebrated the 70th anniversary of the founding of the People's Republic of China. In his speech, Zheng Jianhua, Secretary of the Party Committee and Chairman of the Shanghai Electric Group, said that the excellent corporate culture of Shanghai Electric should be rooted in the employees, constantly inspiring the employees to gather together the mighty power of the new era, devote themselves to the reform and development of the enterprise as masters, and work hard to achieve Shanghai Electric's "three-step" strategic goal. On September 25, the Issuing Ceremony of Commemorative Medal to Celebrate the 70th Anniversary of the Founding of the People's Republic of China was held. Related companies delivered the Commemorative Medal to Celebrate the 70th Anniversary of the Founding of the People's Republic of China to the 807 retired old comrades and veterans who participated in the revolutionary work.



04

Zheng Jianhua was interviewed by foreign media to talk about electrical transformation and development

On October 22, 2019, in a large-scale all-media interview with Xinhua News Agency 2019 Dialogue with Leaders of State-owned Enterprises in Shanghai, Zheng Jianhua, Secretary of the Party Committee and Chairman of Shanghai Electric Group, as the first interviewed enterprise leader in the state-owned assets system, talked about the implementation of the decisions and arrangements of the central government and the municipal government of Shanghai Electric, and its great efforts to be the vanguard of the reform and opening-up of state-owned assets, the main force of the innovation and development of state-owned enterprises, the pioneer of Shanghai brand, the leader of "going global" enterprises. In addition, in a special interview with Dragon TV on April 24 last year, Zheng Jianhua also introduced Shanghai Electric's in-depth promotion of its "going global" strategy and active distribution of global resources.

03

The First Congress of the CPC Shanghai Electric Group Co., Ltd. elected the new leading group of the two Committees

On April 23, 2019, the First Congress of the CPC Shanghai Electric Group Co., Ltd. was successfully held. The meeting elected the first Committee and Discipline Inspection Commission of Shanghai Electric Group Co., Ltd. At the first plenary meeting of the new Party Committee and Discipline Inspection Commission held after the meeting, Zheng Jianhua was elected as the Secretary of the Party Committee of Shanghai Electric Group, Huang Ou and Zhu Zhaokai as Deputy Secretary of the Party Committee, Hua Xingsheng as Secretary of the Discipline Inspection Commission, and Wang Bing as Deputy Secretary of the Discipline Inspection Commission.





05

The whole system set off a craze for learning from Comrade Li Bin

Since April 2019, the Municipal Party Committee Organization Department, the Municipal Party Committee Propaganda Department and other departments have held a number of report meetings on Comrade Li Bin's excellent deeds, and at the same time issued the Decision on Deepening Learning from Comrade Li Bin. On the morning of April 9th, at the Shanghai Electric Special Session of Comrade Li Bin's Advanced Deeds Report, Zheng Jianhua, Secretary of the Party Committee and Chairman of Shanghai Electric Group, stressed the need to carry out extensive and in-depth publicity activities on learning the spirit of ownership among all cadres, party members and employees, actively learning from Comrade Li Bin, establishing a sense of ownership, and making more contributions to the reform and development of Shanghai Electric.

06

Implemented the “Belt and Road” initiative to deepen overseas markets

In the past year, Shanghai Electric has actively implemented the “Belt and Road” initiative and continued to deepen its overseas markets and countries along the initiative. On June 3, Shanghai Electric's contract signing ceremony for the Kutana project, the largest single-unit on-ground photovoltaic power station in southern Australia, was held in Shanghai, becoming the Group's first bid to enter the Australian new energy market. On October 15, Shanghai Electric signed the EPC contract for 25.5MW photovoltaic project in Greece. On the same day, Shanghai Electric won the bid for Kyushu's 15MW Suyangwei Yueyue wind power EPC project, becoming the first wind power project to be undertaken in Japan. In addition, Shanghai Electric has successively obtained large projects in the “Belt and Road” initiative countries such as Bangladesh, Indonesia, Pakistan and Iraq, covering fields, such as photovoltaic and gas turbine.

07

Docked with the national strategy of Yangtze River Delta integration

Docking with the national strategy of Yangtze River Delta integration, Shanghai Electric actively promoted the "two ends in Shanghai, the middle outside" business model. On July 19, 2019, Shanghai Electric Nantong Central Research Institute officially started construction in Nantong Central Innovation Zone. In addition, several Shanghai Electric projects such as Haian Hazardous Waste Disposal Center, Nantong Base Phase I Intelligent Manufacturing Total Solution Project, Taizhou Matechstone Green Assembled Building Base, Chaohu Energy Storage Flow Battery Incubation Project, and Yancheng City Smart Energy Big Data Platform, also intensively entered the project construction period last year, contributing electrical technology and wisdom to the integrated development of the Yangtze River Delta.

08

Accelerated the release of the intelligent manufacturing "SEunicloud"

On August 30, 2019, the 2019 Global Industrial Intelligence Summit was held. As one of the benchmark enterprises in the field of industrial Internet and industrial intelligence in China, Huang Ou, Deputy Secretary and President of the Shanghai Electric Group, issued an initiative to the city's enterprises to actively participate in the "AI + Industry" reform wave and turn the Yangtze River Delta into a world-class manufacturing cluster. On December 21, Huang Ou was elected as the first president of the Association at the first member meeting of the first session of the Municipal Industrial Internet Association. In the past year, the Group has held several special meetings on intelligent manufacturing, focusing on the progress of the top ten demonstration projects of intelligent manufacturing. At the Industrial Fair in September, Shanghai Electric's "SEunicloud" industrial Internet platform was released to the public. The platform integrated emerging technologies such as artificial intelligence, big data and cloud computing to build a multiple-energy digital ecology inside and outside Shanghai Electric to realize the upgrading of the intelligent industry, and promote the upgrading and reconstruction of the industrial form, business form and value form.



09

The brand value of Shanghai Electric reached a new high

On June 26, 2019, World Brand Lab officially released the list of China's 500 Most Valuable Brands in 2019. After breaking through 70 billion yuan in 2018, Shanghai Electric set a new high of RMB 81.276 billion in brand value and once again led China Machinery industry. From the initial RMB 3.822 billion to a breakthrough of RMB 80 billion, Shanghai Electric's brand value increased 21 times in 16 years. In addition, in the Top 500 Asian Brands, the ranking rose to 88, which is the highest level in history. On December 18, in the first China Brand Development Index released by People's Daily, Shanghai Electric ranked 40th with a comprehensive index score of 784.34. In the Forbes' Global Top 2000 Listed Companies List of last year, the ranking soared 141, ranking 802 in the world.

10

In commemoration of the 100th anniversary of the May 4th Movement, Zheng Jianhua sent words to young people

On May 24, 2019, Shanghai Electric held a youth conference to commemorate the 100th anniversary of the May 4th Movement. Zheng Jianhua, Secretary of the Party Committee and Chairman of the Shanghai Electric Group, sent words to young employees that they should dare to think and dare to achieve the goal of "three-step" and become the most powerful force and vanguard to realize the "electric dream". The subsidiaries of the Group carried out various activities to promote the century-old spirit of the May Fourth, and called on the youth to make more contributions to the transformation and development of Shanghai Electric.

01

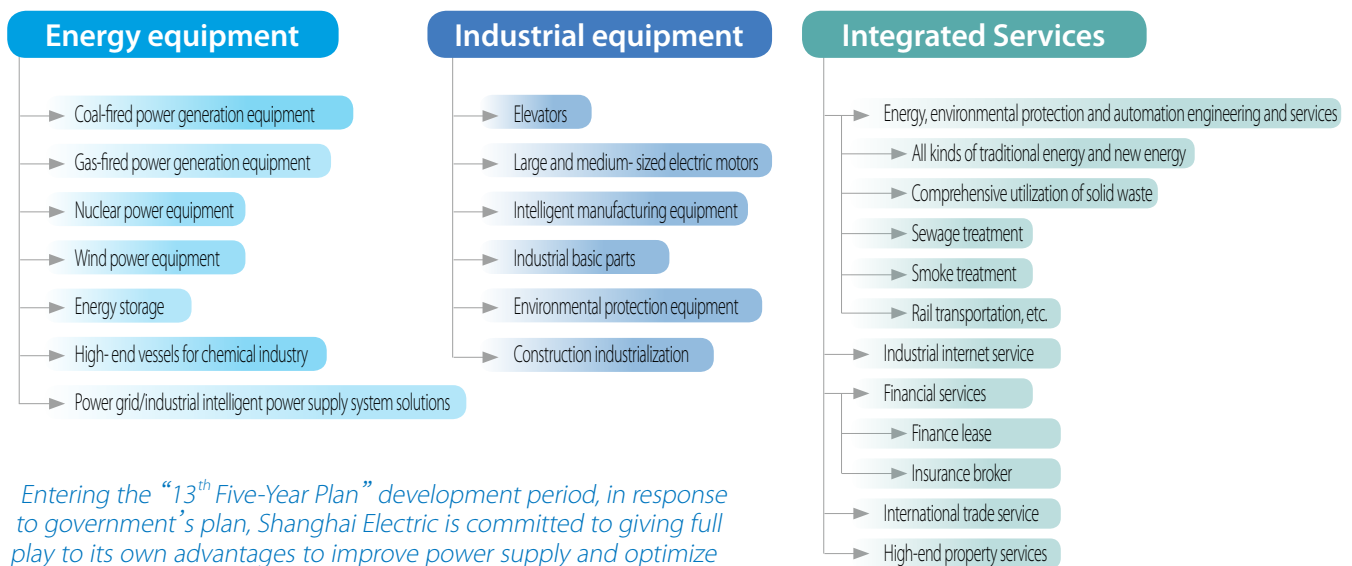
CREATE VALUE FOR SHAREHOLDERS WITH STRONG SENSE OF RESPONSIBILITY

As an A + H listed company, Shanghai Electric deeply understands that good corporate governance is the cornerstone and guarantee of enterprise development. Based on domestic and overseas listing supervision, we strengthen our internal management, consolidate and further improve the level of corporate governance and ESG governance, and enhance the competitiveness of the enterprise. We adhere to the compliance of information disclosure and respond to investor needs as our basic responsibility. For many years, we have been rewarding shareholders with continuously growing operating performance and investment dividends.

About Us

Shanghai Electric , Creates a bright future with creators

Shanghai Electric is a large-scale comprehensive equipment manufacturing group. Its leading industries focus on the three major areas of energy equipment, industrial equipment, and integrated services. It is committed to providing customers with green, environmentally friendly, intelligent, and interconnected technology integration and system solutions. Products include thermal power generating units (coal power, gas power), nuclear power units, wind power generation equipment, power transmission and distribution equipment, environmental protection equipment, automation equipment, rail transportation equipment and machine tools. During the reporting period, Shanghai put forward the Shanghai Smart Manufacturing Action Plan (2019-2021) to build Shanghai into a new highland for intelligent manufacturing applications, the source of core technologies and the output of system solutions. Shanghai Electric seized the opportunity of industrial intelligent development, focusing on the three major areas of energy equipment, industrial equipment and integrated services. With the long-term accumulation of high-end equipment manufacturing, we will promote the digitalization and informatization of energy and industrial development and improve efficiency.



Entering the “13th Five-Year Plan” development period, in response to government’s plan, Shanghai Electric is committed to giving full play to its own advantages to improve power supply and optimize the power structure:

> We vigorously develop new energy, optimize and adjust the development layout; > We safely develop nuclear power, and promote the construction of coastal nuclear power; > We orderly develop natural gas power generation and vigorously promote the construction of distributed gas power; > We accelerate the transformation and upgrading of coal power to promote clean and orderly development; > We promote the optimization of power grid construction. In addition, in order to better promote green development, win the blue sky defense battle, increase the protection of the ecosystem, and build a beautiful China, Shanghai Electric’s new energy and environmental protection equipment, distributed energy, intelligent manufacturing, modern service industry and other business fields will usher in more market development opportunities and business development space.

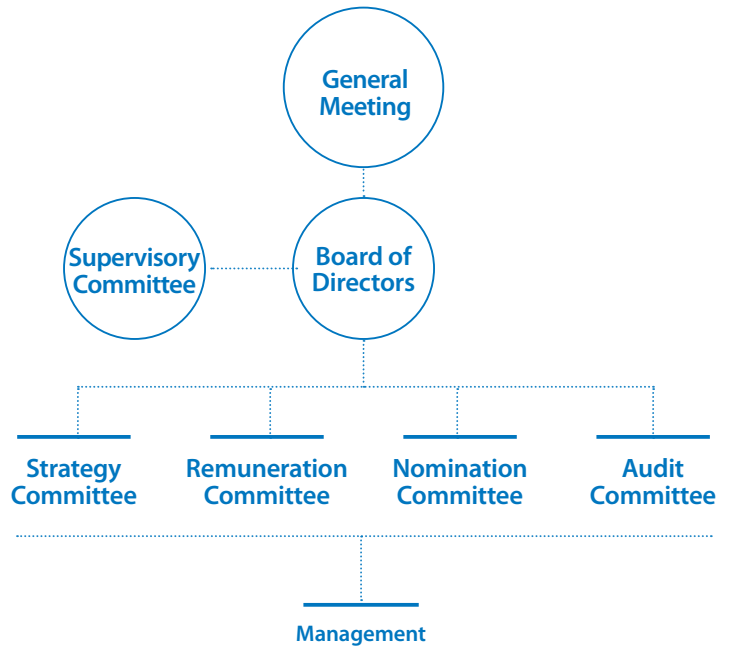
While actively developing its major business, Shanghai Electric continues to promote the process of internationalization, respond to the advocacy of the “Belt and Road” international cooperation, accelerate its global layout, and implement four “going global” initiatives: We open up the international market and realize the “going global” of the market by expanding the complete set of engineering business in the fields of power stations, transmission and distribution, and environmental protection. We integrate the global industrial chain, actively develop new industries, bring new development momentum, realizing the “going out” of capital; We expand global technology channels and enhance independent R&D capabilities, establish overseas R & D centers to diversify technology sources, achieving “going out” of research and development; We aim to achieve “going out” of production capacity through manufacturing base and technology center.

Corporate Governance

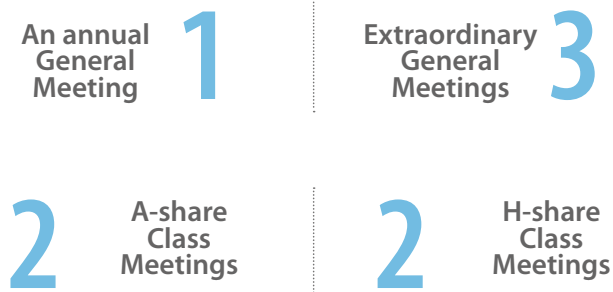
We abide by the principle of compliance and maintain good corporate governance

Shanghai Electric strictly abides by the laws and regulations of corporate governance of listed companies, such as the Company Law, Securities Law, Listed Company Governance Guidelines. The Board of Directors believes that Corporate governance is the key to the company's success, and has taken a number of measures to ensure the Company's compliant operation, so as to establish a standardized, transparent and excellent listed group.

Shanghai Electric's Corporate Governance Framework



The General Meeting is the highest authority of Shanghai Electric, which effectively protects the shareholders' right to know, speak, question and vote. In 2019, Shanghai Electric held:



Under the board of directors, we have an audit committee, a remuneration committee, a strategy committee and a nomination committee. The members have rich working experience in different professional fields, so they can make decisions on the Company's major strategies and play the board's decision-making function. In 2019, the Company convened a total of 21 board meetings by on-site and communication voting.

Directors of Shanghai Electric

*Including 2 Female Directors



We also set up a supervisory committee responsible for the General Meeting as the company's supervisory body, overseeing the company's operations, financial status, and performance of directors and senior management personnel, and making recommendations. The supervisory committee consists of 5 supervisors (including 2 employee supervisors). In 2019, the Company held 16 supervisory committee meetings.

To better improve the compliance management of the board of directors and the supervisory committee, we regularly conduct compliance training for the board of directors and the supervisory committee members. In 2019, Shanghai Electric's directors, supervisors and senior executives participated in a total of 6 training sessions, including the training class for directors / supervisors of listed company, the training class for financial director of capital market college, and the follow-up training for board secretary of Shanghai Stock Exchange A + H listed company.

Risk management and internal control

Shanghai Electric has established and improved its risk management and internal control system, formulated and promulgated the Risk Management System, Risk Management Implementation and Reporting Process, Internal Control Self-Evaluation Operating Rules and Internal Control Self-Evaluation Process as well as other internal control systems and norms. It has also compiled the Risk Management Operating Manual and the Internal Control Manual to provide a complete system guarantee for carrying out risk management and internal control. We have continuously optimized the risk management and internal control management framework, improved the three defense lines of risk management and internal control, established a complete and independent organizational structure for risk management and internal control and communication and reporting channels, further improved the organizational structure and functional allocation of risk management and internal control, and defined the responsibilities and division of labor among the decision-making level management, execution level management and three defense lines.

Methods of risk management and internal control



Risk identification and prevention

We organize risk identification, assessment, response and reporting every year, compile risk prevention and solutions for possible major risks in the future, and regularly conduct self-examination on the implementation progress and effectiveness to continuously improve the company's risk management capabilities and reduce risk levels.



Regular evaluation of risk management and internal control

In order to promote the implementation of internal control and the improvement of system processes, we regularly evaluate the effectiveness of risk management and internal control, promptly reveal the potential risks and defects of internal control, and ensure the effective operation of the company's risk management and internal control system.



Internal control audit

The company hires an accounting firm to audit the internal controls for financial reporting every year, discovers the internal control defects in time, and urges relevant business departments and units to implement corrective measures in time to ensure the effective operation of the company's internal controls.



In order to strengthen the audit supervision function and enhance the independence and authority of our audit function, Shanghai Electric has implemented a highly centralized and unified management of the audit integration management mode to improve the efficiency of audit resource utilization, strengthen audit supervision and better provide audit services for the company's transformation and development. At the same time, in order to strengthen the audit, Shanghai Electric implemented a comprehensive audit. Considering the level of risks and problems involved, for enterprises with low risks, we conduct an audit once a year to achieve comprehensive coverage of enterprises and continuously monitor the risk level of enterprises. For the four types of enterprises with large risks, large size, poor management foundation and weak control, which are the key monitoring objects, we conduct audits at least twice a year to strengthen supervision and reduce the risk level of enterprises.

In 2019, Shanghai Electric tightly focused on the overall requirements of "combining strategic determination with strict prevention of major risks in risk control" and served the Group's "three-step" strategy through the combination and promotion of "optimizing management and control, strengthening risk control, deepening internal control, and promoting compliance, to advance the high-quality development of enterprises.

Optimized management and control, and promote the implementation of delegating power and optimizing service

- > Implemented the matters of delegating power
- > Worked out remedial measures for the defects of management and control
- > Linked with management adjustment
- > Proposed suggestions on continuous improvement

Strengthened risk control and improve the ability to prevent and control major risks

- > Implemented important risk control mechanisms, and adhered to the comprehensive risk regular inspection on all risks
- > Prevented risks of major projects, and moved forward the risk control threshold of major projects
- > Promoted control in high-risk areas and took the lead in establishing risk prevention and control mechanisms for overseas projects

Deepened internal control to improve the effectiveness of the internal control system

- > Insisted on building the system. At the design level, the Group paid attention to the optimization and improvement of the system
- > Strictly grasped the rectification of defects

Promoted compliance and strengthened compliance management

- > Built a negative list, to build a bottom line
- > Built a compliance team, to lay the foundation
- > Built a compliance information database, to build a carrier
- > Built risk reminders, to implement mechanisms

Combat corruption and uphold integrity

Shanghai Electric conscientiously implements the requirements of strict administration of the Party, stresses political discipline and rules, strengthens disciplinary construction, closely focuses on the Group's development of strategic goals and central work, earnestly implements the entity responsibility of the Party Committee and the discipline inspection committee, and deeply implements the spirit of Central Committee's eight-point decision, strengthens accountability for supervision and discipline, solidly promotes the construction of clean government and anti-corruption campaigns, resolutely opposes commercial corruption, providing a strong guarantee for sustained and healthy development.

We formulated the Shanghai Electric Group's Implementation Opinions on Building a Mechanism That Can't Corrupt, Don't Dare Corrupt, and Don't Want to Corrupt, and Promote the Construction of an Honest and Clean Government. During the reporting period, we revised and improved the 24 Tips for Shanghai Electric Group Leaders to Implement the Eight Provisions of the Central Committee, Party Discipline and Relevant Institutional Provisions and distributed them to more than 1,100 leading cadres of Party members, clarifying the "red line" of discipline and the "bottom line" of law that leading cadres of Party members should abide by.

Based on a sound management system and strict supervision by the disciplinary inspection committee, the Group compiles and publishes the Discipline Inspection and Supervision Proposal quarterly and the Learning Materials for Party Conduct and Clean Government every month. It also timely reminds leading cadres of party members to be clean and honest on important holidays such as Spring Festival, New Year's Day and Mid-Autumn Festival, urging them to build up ideological defense lines and keep discipline bottom lines. It also carries out regular Party Conduct meetings and the working meeting of secretary of discipline inspection committee to promote anti-corruption awareness. In 2019, we strengthened anti-corruption awareness among leading cadres and employees at all levels through diversified publicity methods, insist on the combination of early attention to small things and strict management and great love, and the combination of positive education and negative education to continuously improve the pertinence and effectiveness of anti-corruption education. During the reporting period, a total of 1,240 leading cadres of Shanghai Electric participated in the anti-corruption education activities carried out by the group headquarters, of which male employees accounted for 76% and female employees accounted for 24%.



Propaganda Work of Anti-corruption Education in 2019

1

8 out of more than 200 anti-corruption epigrams were selected and translated into Chinese and English, and transmitted to over 12,000 people in the form of computer screensaver, achieving full coverage of integrity education for the monitoring objects.

Organized staff to self-edit, self-direct and self-produce original anti-corruption micro-film "Button", which was premiered in the training for new employees to join the company, and was first published on the "Shanghai Electric" WeChat public account, and was included in the "Study makes China great again" platform, and was promoted out by the "Incorruptible Shanghai" WeChat public account to enhance the pertinence of incorruptible education.

2

3

Carefully analyzed the new situation and new problems of clean government education, used information technology to expand the new ideas and methods of clean government education, summarized to publish the itinerary report "Uplifting the honesty in Silence", which was published in the "Express of Integrity" section of the "Digest of Clean Government" by Jiefang Daily; and it was published and included in the "Study makes China great again" platform of the Central Propaganda Department, and was later promoted out by the WeChat public account of the "Incorruptible Shanghai" of the Shanghai Discipline Inspection Commission.

Organized more than 900 people from the headquarters of the Group, the Party school of the Group, Mitsubishi Sichuan Branch, and the Dubai photovoltaic project group to simultaneously participated in the incorruptible government construction and legal education report meeting and extended the education of incorruptible government warning to personnel in Shanghai and abroad so as to make employees in Shanghai and abroad receive an education at the same time, further enhancing the effectiveness and coverage of education on integrity.

4

Shanghai Electric earnestly implements the requirements of its superiors regarding the complaint reporting work, formulates a complaint reporting system, and further strengthens the standardization of complaint reporting and whistleblower protection in accordance with the principle of "administrative management and hierarchical responsibility". We strictly protect whistleblowers and are required not to disclose their names, addresses, units and other relevant information without their consent.

During the reporting period, there were no corruption lawsuits in Shanghai Electric.



ESG Governance

We emphasize the participation of the Board of Directors and systematically carry out ESG governance.

"Compliance first, integrity utmost important, innovation driven, win-win cooperation and sustainable development" is Shanghai Electric's core values and social responsibility concepts. Shanghai Electric firmly believes that only by strengthening the consensus and communication in the field of social responsibility, embedding the concept of social responsibility into our strategic development goals, and implementing it into the daily management and innovation activities of enterprises, can we create an outstanding organization that is truly accepted and respected by the society, and truly realize the harmonious coexistence and coordinated development of the economic and social environment.

Shanghai Electric establishes an ESG governance structure led by the board of directors, which aims to implement the Company's concept of social responsibility through sound management. Our ESG governance structure is composed of the Board of Directors, the ESG Management Committee and the ESG Working group from top to bottom. Among them, the ESG Committee governs the ESG Expert Committee. The ESG Working Group is composed of the board office and three sub-working groups which are composed of relevant functional departments and are responsible for contact and communication with relevant departments of subsidiary companies.





As the highest responsible organization for ESG matters management and public disclosure, the Board of Directors assumes full responsibilities and mainly performs the following functions:

- > Review the risks and importance of the Group's ESG matters
- > Review and approve the Company's sustainable development strategy and goals
- > Supervise and review the relevant policies, management, performance and progress of the Group's ESG matters
- > Review and approve the Group's public disclosure of ESG-related matters



The ESG Committee is authorized by the Board of Directors, and the main representatives perform the following functions and report to and provide opinions to the Board of Directors:

- > Identify, determine and evaluate the risks and importance of the Group's ESG issues
- > Evaluate and formulate the Group's sustainable development strategy and goals
- > Supervise, evaluate and review the relevant policies, management, performance and related progress of the Group's ESG matters
- > Supervise and review the Group's public disclosure on ESG-related matters
- > Other matters authorized by the Board of Directors



The ESG Expert Committee is convened by the ESG Committee and is under the management of the ESG Committee. It is mainly responsible to:

- > Provide professional advice for ESG committee
- > Assist ESG committee to perform relevant duties
- > Reserve and enhance the company's ESG research capabilities
- > Other matters consulted by the ESG Committee



Identification of Responsibilities

We actively identify the Company's ESG risks and assume corporate citizenship responsibilities

Shanghai Electric has identified 13 major stakeholders based on the principles of dependence, power and responsibility relationship, and influence degree with stakeholders. We attach great importance to communication with stakeholders, actively carry out regular and effective stakeholder communication, understand the concerns of stakeholders, respond to stakeholders' demands in a timely manner, and incorporate relevant feedback into the consideration of sustainable development strategy .

Communication with stakeholders in 2019

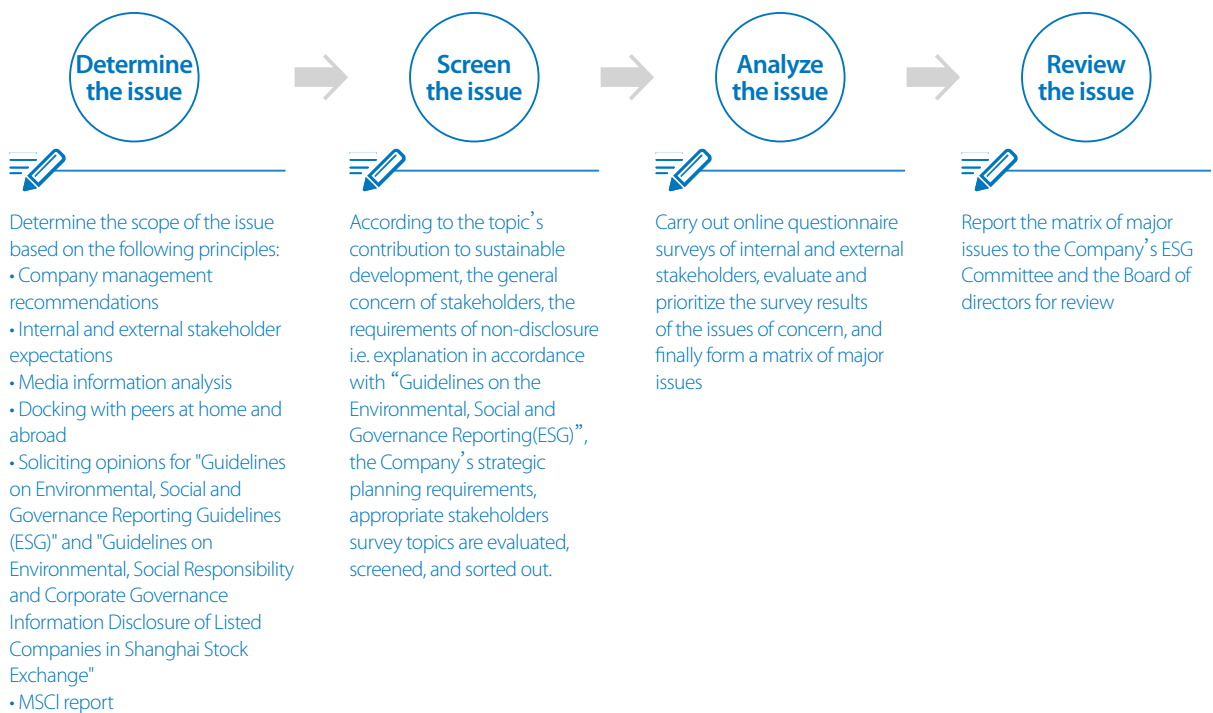
Stakeholder group	Communication channel / feedback method	Frequency / times	Key issues of concern
Investors	-General meeting of shareholders	-Regular	<ul style="list-style-type: none"> -Industry trends and policies -Governance structure -Technology and innovation -Product safety and health -Economic impact -Legal compliance -Management and development strategy -Business performance / financial report -Shareholder dividends
	-Performance briefing	-Regular	
	-Roadshow activities	-Regular	
	-Investor research activities	-Regular/Irregular	
	-Investor factory visit	-Regular/Irregular	
	-Investor summit	-Regular/Irregular	
	-Shanghai Stock Exchange(SSE) E-Interaction	-Irregular	
	-Investor hotline	-Irregular	
	-Information announcement	-Regular	
	-WeChat public account	-Regular/Irregular	
Employees	-Facebook homepage	-Regular/Irregular	<ul style="list-style-type: none"> -Occupational health and safety -Employee benefits and compensation -Sustainable development policy strategy
	-Shanghai Electric public email	-Irregular	
	-Employee training	-Regular/Irregular	
	-Employee activity	-Regular/Irregular	
	-Employee satisfaction survey	-Regular	
-Forum	-Regular/Irregular		

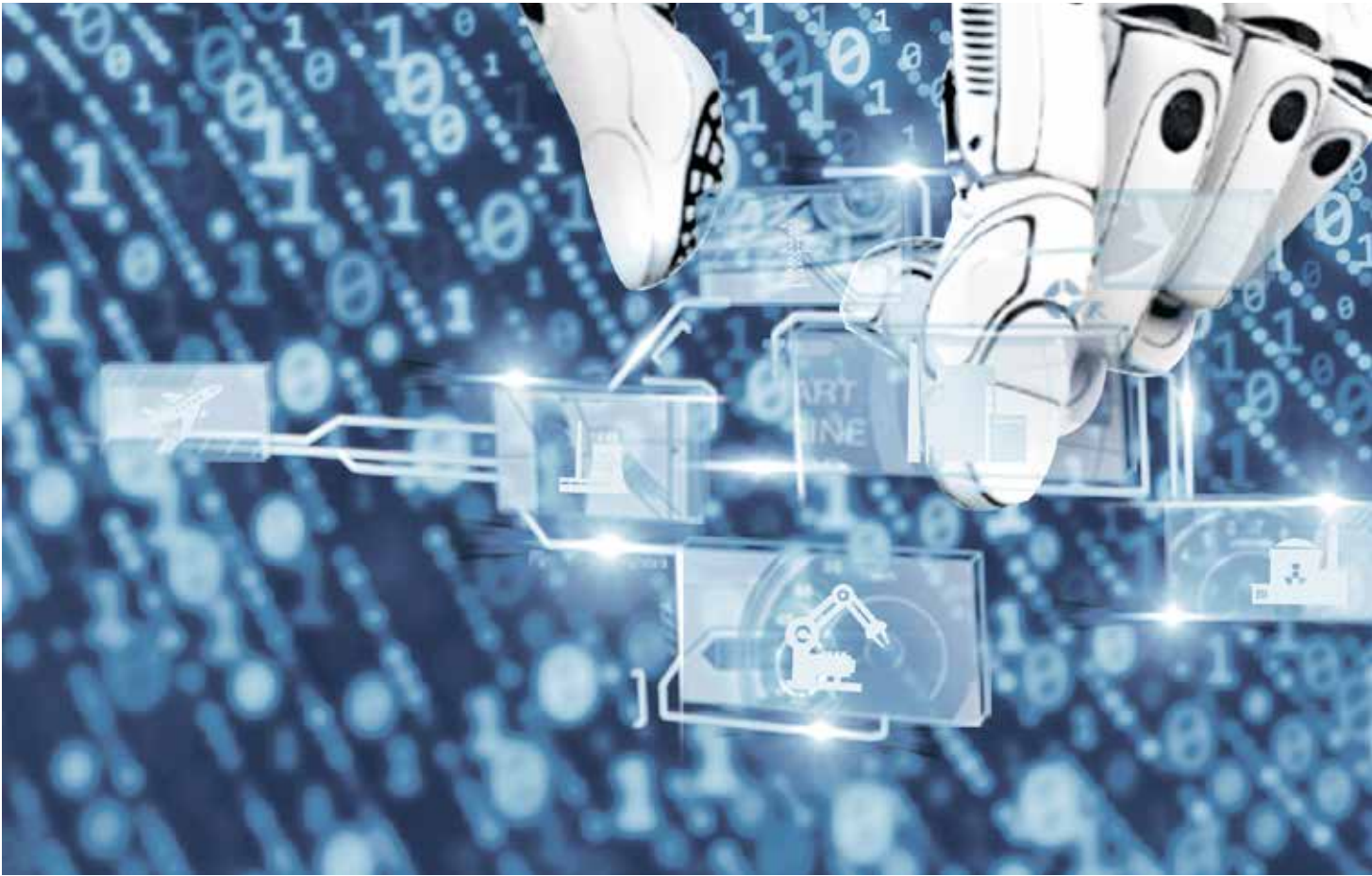
Stakeholder group	Communication channel / feedback method	Frequency / times	Key issues of concern
Partners (including suppliers and contractors)	-On-site review	-Regular/Irregular	<ul style="list-style-type: none"> -Product safety and health -Energy use -Greenhouse gas emissions and climate change -Product quality and after-sales maintenance -Customer privacy information protection -Biodiversity in the place of operation -Charity and donations -Sustainable development policy strategy -Governance structure -Legal compliance -Industry trends and policies -Community development support -Technology and innovation -Waste water disposal -Exhaust emissions
	-Supplier assessment	-Regular	
	-Technical training	-Regular/Irregular	
	-Online communication	-Irregular	
Customers	-Customer satisfaction survey	-Regular	
	-Customer complaint handling	-Regular/Irregular	
	-Brand promotion	-Regular/Irregular	
Communities	-Community charity activities	-Irregular	
	-Regular visits	-Irregular	
Media	-Press release/ information announcement	-Regular/Irregular	
	-Interview	-Regular/Irregular	
	-Performance conference	-Regular	
Regulatory Authorities	-Press release/ information announcement	-Regular/Irregular	
	-Regular communication	-Regular	
Government departments	-Press release / information announcement	-Regular/Irregular	
	-Regular communication	-Regular	
NGO or non-profit organizations	-Regular communication	-Regular	
	-Community charity activities	-Irregular	
Colleges and universities	-Scientific research exchange and cooperation	-Irregular	
	-Recruitment activities	-Regular/Irregular	
End-users of products	-Brand Promotion	-Regular/Irregular	
	-Press release/ information announcement	-Regular/Irregular	
Scholars	-Scientific research exchange and cooperation	-Irregular	
Grantees	-Community charity activities	-Irregular	
	-Regular visits	-Irregular	



Relying on a comprehensive stakeholder communication mechanism, we conducted in-depth communication with stakeholders on major issues in 2019 through face-to-face communication, telephone interviews, and field visits during the reporting period. At the same time, we conducted online questionnaire surveys with internal and external stakeholders to assess the attention of stakeholders on various related issues, and form a matrix of major issues through comprehensive analysis to understand the stakeholders' views on our environmental, social and governance expectations and needs.

The Judgment Process of Shanghai Electric's Major Issues

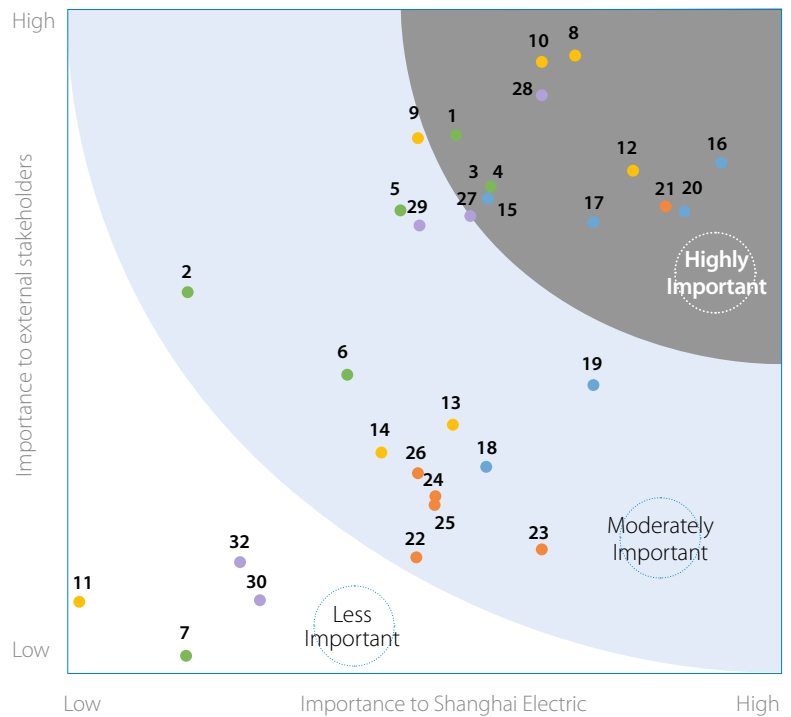




Materiality of ESG Issues of Shanghai Electric

Through above judgment process, we have identified and summarized 31 ESG issues, including 12 highly significant ESG issues, which constitute the key disclosure part of this report. We will elaborate on the relevant content in this report.

- Environment
- Products and operation
- Corporate governance
- Labor affairs
- Economy and community





2019 Shanghai Electric ESG Material Issues

(The topics with * are MSCI's material issues)

Environment



- 01 The use of energy**
- 02 Water consumption
- 03 Wastewater discharge**
- 04 Exhaust gas emissions ***
- 05 Solid waste treatment *
- 06 Greenhouse gas emissions and climate change
- 07 Biodiversity in the place of operation

Products and operation



- 08 Product quality and after-sales maintenance**
- 09 The protection of customers' privacy information
- 10 Product safety and health**
- 11 Advertising and labels
- 12 Technology and innovation ***
- 13 Supply chain management
- 14 Raw material procurement

Governance



- 15 Governance Framework ***
- 16 Policy and strategy of sustainable development**
- 17 The goal setting of sustainable development**
- 18 Anti-corruption *
- 19 Risk and crisis management
- 20 Legal compliance**

Staff



- 21 Occupational health and safety**
- 22 Employment and employee retention
- 23 Employee benefits and remuneration *
- 24 Education and training
- 25 Diversity and inclusion
- 26 Human rights

Economy and community



- 27 Economic impact
- 28 The trends and policies of the industry**
- 29 International trade situation
- 30 Support for community development
- 31 Charity and donations

Regulated Disclosure

We ensure timely and complete information disclosure and effectively respond to the diversified needs of investors

Good investor relationship management can promote the improvement of corporate governance structure, increase the value of listed companies, and ensure the long-term stable development of enterprises. Shanghai Electric has always advocated the concept of "respecting investors and rewarding investors", adhered to the principles of active, proactive, full and continuous communication and exchange, and strictly implemented the "Articles of Association of Shanghai Electric Group Co., Ltd." and the "Information Disclosure Management System of Shanghai Electric Group Co., Ltd." in accordance with laws and regulations and the requirements of the listing rules of Hong Kong and Shanghai, regulated the Company's information disclosure behavior, ensuring that the information disclosure was timely, true, accurate, complete, and effective. It also actively maintained communication with investors through telephone, SSE E-interaction, information announcement, meeting, one-on-one, on-site visit, performance briefing and other diversified channels, effectively responding to the needs of investors and strengthening the market's understanding of the Company's performance and development strategy.



Chairman Zheng Jianhua at the performance Conference

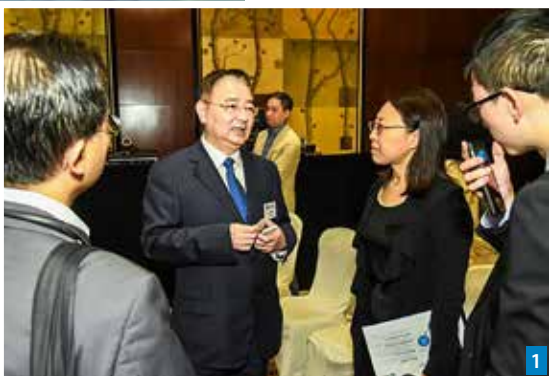
Shanghai Electric's 2019 Interim Results Conference

On September 2, 2019, Shanghai Electric held the 2019 Interim Results Conference online and offline through the main venue in Shanghai, the Hong Kong branch venue, and the telephone terminal. At the performance conference, the leaders of the Group passed on the goals and measures for Shanghai Electric to upgrade its core competitiveness and transform from traditional manufacturing to advanced manufacturing and service manufacturing to domestic and foreign investors. Zheng Jianhua, Secretary of the Party Committee and Chairman of the Group, said that Shanghai Electric has built an AI+ industrial Internet platform based on industrial foundation to realize the digital, networked and intelligent transformation of products, manufacturing, service and management within the Group. Based on years of experience in AI industrial application solutions in wind power, environmental protection, thermal power, elevators and other industries, Shanghai Electric has made uniform plan, integrated superior resources, based on the advantages and characteristics of equipment manufacturing, and initially formed a group-level industrial internet platform "SEunicloud". The platform serves optimizing product services as the starting point and build an industrial internet platform with multi-industry compatibility and cross-industry application. It will become a hub for bearing industrial data asset and analysis capacity configuration, providing services for industries within the Group such as thermal power, gas turbine, wind power, machine tools, rail transit, environmental protection, electrical machinery, distributed energy, etc., to help enterprises realize innovative applications of industrial Internet quickly and at low cost, and enhance the level of enterprise digitalization and intelligence. Digital capabilities have gradually become one of Shanghai Electric's core competitiveness. In the future, the Group will build an ecological circle for the development of the industrial Internet, drive the output of Shanghai Electric's overall solutions, and empower the China's manufacturing.



1. Chairman Zheng Jianhua communicated with investors
2. The Second Extraordinary Shareholders' Meeting in 2019
3. "I am a shareholder"-Shenwan Hongyuan investors visited listed companies

Investors and analysts attending the meeting expressed their approval for the development ideas and initial results of Shanghai Electric Intelligent Manufacturing, and looked forward to Shanghai Electric continuing to promote the high-quality development of manufacturing industry and forming new growth points. In addition, investors are concerned about the rapid rise of Shanghai Electric's wind power industry and solar power generation in recent years, which is in sharp contrast to the decline of traditional thermal power. In this regard, Zheng Jianhua pointed out that the continuous technological progress of new energy sources, the continuous reduction of costs, and the continuous replacement of traditional energy sources are an irreversible trend. Traditional energy needs to constantly improve technology and environmental performance. Both new and traditional energy sources are a process of continuous advancement, complementary and parallel to each other, rather than a process of complete substitution and elimination.



1



2



3

In 2019, Shanghai Electric completed

112

A-share announcements
of which 4 were regular reports

164

H-share announcements
of which 2 were regular reports

37

face to face meetings and/or telephone research meetings,

Attended

14

investor summits

responded to

45

questions of "SSE E-Interaction"

100%

responding to investors' concerns

02

CREATE VALUE FOR CUSTOMERS THROUGH TOP-NOTCH CRAFTSMANSHIP

Shanghai Electric adheres to the concept of "quality first, customer first, excellent service". Being customer-oriented, it wins the attention of customers with innovation and wisdom, rewards the trust of customers with fine quality, and returns the customer's expectations with fine services, continuously creates value for customers and improves customer satisfaction.

Quality Assurance

Quality is the core element that determines the height of the equipment manufacturing industry. We give full play to the company's "meticulousness and excellence" enterprise spirit, and exchange the customer's consistent trust with more excellent product, engineering and service quality.

Concentrate efforts in quality

We have devoted ourselves to the development of products, kept the promise of quality, strictly abided by the laws and regulations of the Product Quality Law of the People's Republic of China, the Law of Product Quality and Safety of the People's Republic of China and the Regulations on the Administration of Industrial Product Production Licenses, and formulated a series of group quality management systems such as the Shanghai Electric Quality Work Standard to improve product quality level and clarify product quality responsibilities. During the reporting period, all manufacturing enterprises of the group have completed the ISO 9001: 2015 quality management system certification, and have dynamically updated and maintained system documents and system processes.

We believe that quality starts with consciousness and depends on technology, management, and ingenuity. Adhering to the dual-track idea of "consolidating the foundation to make up for the shortcomings and pursuing excellence and continuous improvement", we focus on tamping the foundation and ensuring quality assurance and risks control for new industries, and the pursuit of excellence and continuous improvement in traditional superior industries, and carry out targeted quality management according to the life cycle stages of industrial development. At the same time, we adhere to cultural guidance and continuously strengthen the cultivation of employees' quality management awareness and ability.



The Binhai H2 Project of the State Power Investment Corporation, creating more value with excellent quality.

The Binhai H2 Project of the State Power Investment Corporation installed 100 4.0-130 machine sets of Shanghai Electric, making it the largest offshore wind power project in Asia that has been put into operation. The project was located in the coastal waters between Zhongshan estuary and the coastal port in the northern part of Binhai. The conditions in this sea area were very complicated. It was in such a difficult environment that the Shanghai Electric coastal project team, adhered to the corporate values of "being sincere and never tired in traveling" and actively overcame the harsh sea conditions, not only creating

the fastest installation and commissioning record for the offshore project, but also realizing the full-scale operation of 100 wind turbines without faults when the super typhoon Lichma passed over in 2019.

The project was fully connected to the grid on June 30, 2018, and entered a stable operation period in 2019. The utilization rate of the entire wind farm reached 99.39%, the annual power generation was 962 million kWh, and the equivalent full-load hours were 2,406 hours, saving 306,000 tons of standard coal annually.

In 2019, there was no case of product return for safety and health reasons among the sold or shipped products.

High-quality service

The affirmation of each customer and the recognition of the society are the spiritual power and intangible assets of the enterprise in its transformation and development. For this reason, Shanghai Electric insists on returning the trust of customers and the expectation of the society with its excellent service. We have not only negotiated and signed cooperation agreements for service and spare parts with many domestic customers, but also provided services to customers through direct supply, service cooperation and other new flexible ways and met the diverse needs of customers with rapid response, exquisite technology and intelligent operation and maintenance.

Power Generation Group



- To build a full life cycle service system, with the concept of "active service to users", it led and promoted the on-site equipment installation, commissioning, trial operation and so on;
- Used the unattended operation and intelligence monitoring and diagnosis system of condenser to reduce management costs and improve response speed;
- Improved the project management system, combined with localized management, overcame a series of difficulties in overseas project laws and regulations, certification permission, construction period difficulties, high requirements of project management, environment and safety management, achieving the delivery of overseas quality projects.

Wind Power Group



- Established an iron-triangle model of project (sales manager, project manager and solution manager) to provide customers with the products and services they needed;
- Established a market-oriented technical support structure and mechanism (COE);
- Formed an on-site linkage mechanism with the supplier chain, manufacturing base, and on-site service personnel to ensure equipment delivery according to customer time lines;
- Improved the speed of on-site problem resolution and the supply of spare parts to meet on-site operation requirements.

Nuclear Power Group



- Always took quality as the lifeline, gradually improved production efficiency, and ensured the quality of the delivered equipment;
- To do a proper job in the reasonable deployment of spare parts and the improvement of product documents to ensure the completeness of the tools, spare parts and documents to be delivered with products.



Malaysia LongSan microgrid project adopted sophisticated technology to meet the residential electricity demand

Shanghai Electric Engineering Complete Co., Ltd., cooperating with Power Transmission and Distribution Group Technology Center, conducted extensive and in-depth exchanges with Sarawak Energy on rural electrification in Sarawak, Malaysia. In the end, both parties chose to conduct the construction of rural microgrid demonstrative project in LongSan Village, Sarawak, Malaysia. The village had a poor economic foundation and its electrical equipment were mainly electric fans, lights, TVs, refrigerators and other household appliances, which had a potential demand for air conditioning. The infrastructure such as electricity was very weak. LongSan Village's electricity was now entirely dependent on the electricity of its own diesel power generation, with high diesel transportation costs, high electricity generation costs, and the severe pollution to environment. At the same time, it cannot meet the growing demand of electricity for residents.

According to the energy demand, load situation, current power supply situation and natural resources analysis of LongSan Village in Malaysia, the team constructed an independent microgrid system with photovoltaic, energy storage and diesel power generation. Through the comprehensive energy management system, the team made full use of different characteristics of distributed energy sources to realize multi-energy complementation in different time scales and create a green low-carbon energy contract supply form with renewable energy as the main source and diesel generators as the auxiliary source, which provides safe and stable green energy for local residents. After the completion of the project construction, the power supply from renewable resources can be utilized to the maximum extent, the use of diesel oil can be reduced, the cost of electricity can be reduced, the current situation of local electricity consumption can be improved, and the quality of life of residents can be improved.

Some awards or thank-you notes issued by customers in 2019 are listed as follows:

Customer	Business Division	Date
State Energy Liucheng Power Generation Co., Ltd. (silk banner)	Power station	2019.11
State Energy Feixian Power Generation Co., Ltd. (silk banner)	Power station	2019.05
Guodian Hanchuan Power Generation Co., Ltd. (silk banner)	Power station	2019.05
China Huadian Group Co., Ltd. Jiangsu Wangting Power Generation Branch Livelihood Department (silk banner)	Power station	2019.09
Inner Mongolia Daihai Power Generation Co., Ltd. (silk banner)	Power station	2019.11
Huaneng Shandong Ruyi (Pakistan) Energy Co., Ltd. (silk banner)	Power station	2019.11
Anhui Huadian Suzhou Power Generation Co., Ltd. (thank-you note)	Power station	2019.10
Fujian Sanchuan Offshore Wind Power Co., Ltd. (thank-you note)	Wind power	2019.08

Value Innovation

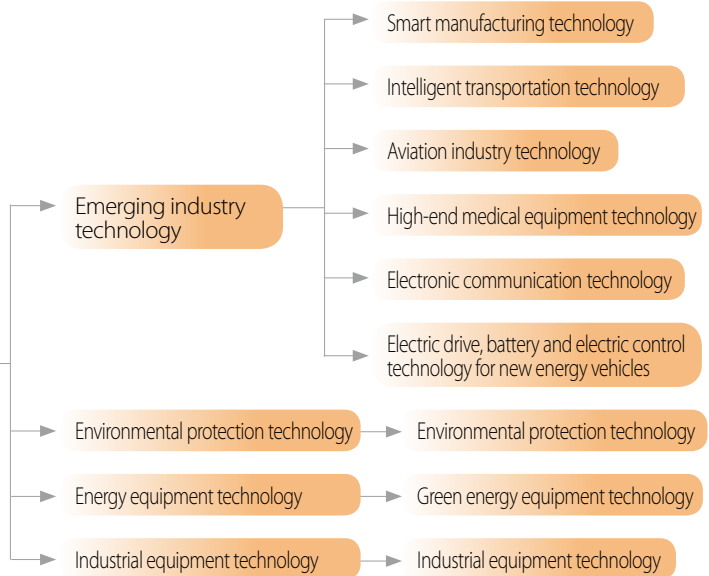
We maintained continuous R & D investment, explored new industries and new businesses in great depth, and brought customers a constant stream of surprises through innovation and smart manufacturing.

Development Strategy

Under the guidance of the great "Chinese dream", Shanghai Electric carried the pillars of a great power, made every effort to align itself with Made in China 2025. With the vision of "becoming a new world-class carrier for high-end equipment" in mind, Shanghai Electric focused on the principal lines of business in which it had an advantage, optimized its existing principal lines of business, vigorously developed new principal lines of business, and actively transformed towards energy conservation, environmental friendliness, greenness, interconnection, and intelligence. According to the Group's strategic layout, we set clear science and technology development goals, formulated and released the Science and Technology Development Plan of Shanghai Electric (2018-2023), focused on the four technology fields of emerging industries, environmental protection, energy equipment and industrial equipment, as well as nine subdivisions of the technology orientation, and strove to gradually turn Shanghai Electric into a technologically leading international equipment manufacturing group through three shifts, namely a shift from following technology to leading by technology, a shift from introduction as the principal method to a diversity of methods, and a shift from being mainly local to being global.



Scientific and technological development



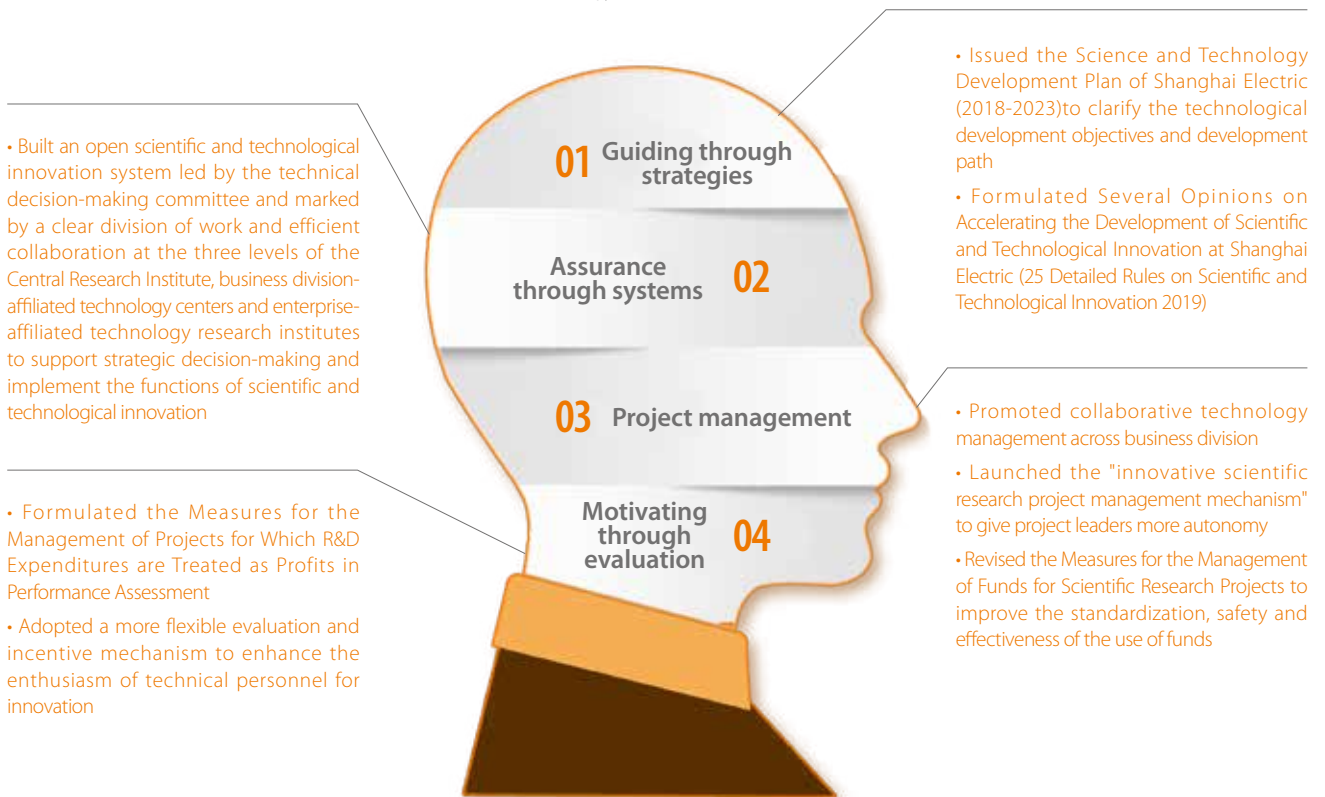
In developing our main business, we kept on moving towards marketization, specialization and internationalization, continuously optimized investment management, accelerated the globalization and multinationalization of our operations, and pushed forward with system and mechanism reform and innovation in an effort to join the global "first echelon" as soon as possible and achieve our strategic goals for a new era.

We acquired a controlling interest in Yinghe Technology to promote the common development of the two sides in the field of new energy

As one of the largest integrated equipment manufacturing group in China, Shanghai Electric is committed to becoming a world-leading provider of automation equipment and smart manufacturing system solutions. Yinghe Technology has mastered core technologies in all aspects of lithium-ion battery production equipment. It is the only lithium-ion battery production equipment enterprise in China that can link up the front, middle and back ends and provide whole-line solutions, so it fits well with the Group's strategic layout in the field of new energy. In November 2019, upon the completion of a negotiated transfer of shares, Shanghai Electric became the controlling shareholder of Yinghe Technology. The transaction is conducive to giving full play to the two sides' respective capabilities and resource advantages, achieving complementary advantages, and promoting the common development of the two sides in the field of new energy.

Scientific innovation

Shanghai Electric took the initiative to adapt to changes in the market environment, and strengthened efforts to make breakthroughs in core technologies with a focus on the demand side. According to the "3 + 3" industrial plan and the Science and Technology Development Plan of Shanghai Electric (2018-2023), the Group's technical and research staff, in pursuit of the "three-step" strategic objective, prioritized the industrial application of high and new technologies and strategic emerging industries, focused on breakthroughs in key technologies and product development in key areas, and actively explored and studied new industries and technologies. During the reporting period, Shanghai Electric further supported the building of scientific and technological innovation systems and capabilities on the four levels of guiding through strategies, assurance through systems, project management and motivating through evaluation, and accelerated the implementation and transformation of technological achievements. In 2019, we invested about RMB 4,102 million in R&D, accounting for 3.2% of the operating income for the year and up 9.9% year-on-year.





Shanghai Electric Holds the Group's Scientific and Technological Innovation Conference

On August 21, 2019, the 2019 Shanghai Electric Group Scientific and Technological Innovation Conference with the theme "leading technology, innovation and transformation" was held at Shanghai Electric Training Center. The 16-day conference consisted mainly of three sessions: the Science and Technology Conference, the Innovation Forum and the Technology Development Sub-Forum. On the opening day, Zheng Jianhua, Secretary of the Party committee and chairman of the board of directors of Shanghai Electric Group, made an important speech, and Huang Ou, deputy secretary of the Party committee and President of Shanghai Electric Group, presided over the meeting and made a keynote speech. On the afternoon of the opening day, four external experts from Shanghai Jiao Tong University, Siemens Ltd. China, Huawei Technologies Co., Ltd. and Tencent Technology Co., Ltd. spoke at the Innovation Forum.

Progress on major science and technology projects in 2019:



Smart manufacturing technology

In the process of transforming itself from an equipment manufacturer to a provider of digital products and services, Shanghai Electric released the Three-Year Action Plan of Shanghai Electric for Smart Manufacturing (2018-2020), in which Shanghai Electric spelled out its commitment to "build the smart manufacturing ecosystem of Shanghai Electric by driving application by demonstration, integration by application and equipment by integration". During the reporting period, we set up a smart manufacturing promotion committee, which built ten demonstration projects in the three application scenarios of smart factory, smart operation and maintenance, and the industrial/energy Internet in collaboration with the Digital Technology Company, the automation group, the central research institute and other internal resources of Shanghai Electric. By doing so, we empowered ourselves while building our capacity to provide smart manufacturing solutions to external entities, and strove to create a smart manufacturing industry cluster with an annual output value of tens of billions of yuan around Shanghai Electric.



"SEunicloud" Industrial Internet Platform

The industrial Internet is an important carrier of smart manufacturing and smart operation and maintenance. On September 18, 2019, at the 21st China International Industry Fair, Shanghai Electric held a grand brand press conference with the theme of "smart manufacturing empowers industrial development". The "SEunicloud" Industrial Internet Platform was officially launched after ten years of exploration. The platform has a three-layer architecture composed of an access layer, a platform layer and an application layer. It has service carrying capacity at the Shanghai Electric Group level. It has developed and integrated applications such as equipment networking, fault diagnosis, remote operation and maintenance, energy planning, etc., and has initially formed industrial solutions such as the smart operation and maintenance of wind power plants, the remote operation and maintenance of thermal power plants, machine tool maintenance, energy storage batteries, distributed energy, etc.

In the future, the "SEunicloud" platform will further focus on the field of aftermarket services, explore innovative business models, put customers at its core, help Shanghai Electric build the industrial triangle of "equipment + industrial Internet services + e-commerce and offline services", and empower industries, customers and partners.



Yancheng Intelligent Energy Big Data Platform Project Successfully Launched

On September 6, 2019, the Yancheng Intelligent Energy Big Data Platform Project undertaken by Digital Technology Company was successfully commissioned. The project is the first urban intelligent energy big data platform project acquired by Shanghai Electric, and is Shanghai Electric's "first pieces (sets)" project in this field.

Built by Yancheng State-Owned Energy Investment Co., Ltd. at the request of Yancheng City, the Yancheng Intelligent Energy Big Data Platform Project aims to provide all-round data access and support in planning, construction and operation for all kinds of energy projects in Yancheng City, realize intelligent management for the whole energy chain, and build a green, low-carbon and environmentally friendly new energy city. Based on the industrial Internet platform, the project aims to build energy big data applications, deliver four-in-one comprehensive services that encompass management by the government, power generation, power grids and energy consumption, and provide the city with solutions for open, comprehensive management of energy data; implement preventive maintenance in the field of energy production to ensure the safety, stability and reliability of the energy production environment; realize business model innovation and value creation in all links of the chain including source, grid, load and storage for urban

energy management.

The project was officially launched at the end of June 2019 and commissioned in September. After the successful launch of the project, it was highly recognized and praised by Yancheng municipal government and Yancheng State-Owned Energy Investment Co., Ltd., the investor. As a successful attempt by Shanghai Electric to impart its construction experience based on the industrial Internet platform, the project has laid the foundation and fostered engagement for better promoting Shanghai Electric's other solutions in the future.





Distributed smart rural domestic sewage treatment project

The "13th Five-Year Plan" clearly states the necessity of constructing rural sewage treatment facilities; the Guide to the Construction of A Beautiful Countryside sets a quantitative target for the coverage of rural domestic sewage treatment by requiring that domestic sewage treatment cover 70% or more of all rural households; The Action Plan for Water Pollution Prevention and Control proposes that environmental remediation be carried out across contiguous rural areas, and that by 2020, comprehensive environmental remediation be completed for another 130,000 incorporated villages.

However, existing technologies and operation and maintenance models often have shortcomings such as heavy investment, high management and maintenance requirements, unstable operation, and poor treatment results, which have become a bottleneck that impedes efforts to advance the construction of a beautiful countryside in an all-round way.

The project strengthens and optimizes traditional processes with low energy consumption to form integrated process equipment that occupies little floor space, requires less investment in construction, and is highly integrated and intelligent, easy to operate and maintain, and reliable, providing a brand-new solution for rural domestic sewage treatment in China.

The project has been applied in many places, including Shanghai, Jiangsu, Anhui, Sichuan, Hainan and other places in the country. As a result, rural domestic sewage is effectively treated, greatly reducing the discharge of water pollutants to prevent the pollution of receiving water bodies and protect the natural environment.



Environmental Protection Technology

In the field of environmental protection, we have initially established a complete industrial chain covering engineering + design, technology + products, and operations + services, with a focus on environmental protection in power plants, solid waste treatment and water treatment. During the reporting period, Shanghai Electric Environmental Protection Group undertook or signed letters of intent for nearly ten foreign environmental protection projects, mainly in Southeast Asia, the Middle East, Europe and North America, and strove to integrate advanced foreign technologies, accumulate benchmark achievements in the industry and form its own core technologies through the development of foreign high-end environmental protection markets, so as to "feed back" to foreign aftermarkets and the domestic environmental protection market.

Desalination unit using waste heat produced by the petrochemical industry

The desalination unit using waste heat produced by the petrochemical industry is a low-temperature multi-effect distillation unit that uses hot water at 80 °C to 95 °C produced in the refining process as the heat source for efficient water production. Independently developed by Shanghai Power Station Auxiliary Machinery Plant Co., Ltd., the desalination unit using waste heat produced by the petrochemical industry has been successfully applied to ZPCC, Hengyi Brunei and other petrochemical projects at home and abroad, and is in a world-leading position. The unit is innovatively designed in a way that integrates efficient flash evaporation and low-temperature multi-effect distillation. It recycles hot water produced by the petrochemical industry, providing customers with low-cost and high-quality fresh water resources. The operating cost is less than 3 yuan/ton, and the economic and social benefits are significant. It comprehensively enhances the international competitiveness of domestic thermal desalination technology and equipment.



Energy Equipment Technology

The world's first 1000MW ultra supercritical unit with a double turbine regeneration system - Jiahu Bay Power Plant in Lufeng, Guangdong

The Group adheres to the technical route of efficient and clean coal-fired power generation, and with its strong R & D capabilities, it continuously pushes the development of thermal power towards high energy efficiency, large capacity and low emissions. On November 9, 2018, Jiahu Bay Power Plant in Lufeng, Guangdong successfully passed a 168-hour test run and officially entered the commercial operation phase. Data gathered during the test run of the world's first ultra-supercritical unit with a double turbine regeneration system (Echelon Cycle, EC system for short) showed that its heat economy reached the best level for single reheat units, and its heat rate was close to that of double-reheat units, reaching a world-class level.

High efficiency ultra-supercritical steam parameters were selected for the 1,000MW units at Jiahu Bay Power Plant in Lufeng, Guangdong. The inlet steam parameters are 28.0MPa.a/600/620°C, and the corresponding boiler side parameters are 29.3MPa.g/605/623°C. The project is the first of its kind in the world to use a double turbine regeneration system and the first of its kind in China to use a single-row vertical serpentine-coil high pressure heater with independent intellectual property rights in China, which represent a breakthrough in heat engine design technology, and effectively improve the economy, reliability and flexibility of unit construction and operation.



New-generation high-performance F-class gas turbine - Shanghai Shenneng Fengxian Thermal Power Project

The project was undertaken by Shanghai Electric Gas Turbine Co., Ltd. On June 19, 2019, at 13:58, two gas turbine-driven generator sets of Shanghai Shenneng Fengxian Thermal Power Co., Ltd., a key energy construction project in Shanghai, completed a 168-hour test run. The project is the first F-class single shaft combined cycle project that uses the new-generation high-performance F-class gas turbine in Shanghai Electric's AE gas turbine family. The gas turbine is positioned to meet market demand for more powerful and more efficient gas turbines. The new aerodynamic design realizes more efficient flow. The further upgrading of combustion and cooling technology, and the new application of advanced materials and coating technology bring higher turbine front temperature. Compared with the previous generation of F-class gas turbines, the output of a single turbine is increased by nearly 10MW to reach a leading level in China.

Huadian Laizhou Power Plant Phase II project has set a new world record for the lowest coal consumption

The two 1000MW high-efficiency ultra-supercritical double-reheat units of Huadian Laizhou Power Plant Phase II project were put into operation in August and November 2019, respectively. The Phase II project uses the more advanced double-reheat tower-type boiler power generation technology that delivers higher steam parameters and lower energy consumption. The designed coal consumption for power generation is 253.48g/kWh; the coal consumption for power supply is 261.8g/kWh; the auxiliary power consumption is 3.19%. Compared with traditional supercritical units, the indicators are more optimized and the energy efficiency and emission reductions are remarkable. Flue gas desulfurization and denitrification facilities were constructed simultaneously with the project. The desulfurization facilities use the twin-tower and dual-cycle technology. Waste heat from flue gas is thoroughly used. All this makes it the best million kW-level project in the same period in China. Shanghai Electric Power Generation Group provided a complete set of steam turbine, generator and boiler products for the Phase II project of Huadian Laizhou Power Generation Co., Ltd. The boiler efficiency is 95.1%, the highest for coal-fired generating units in operation in the world; the back pressure on the steam turbine is 3.8 kPa, the lowest for double-reheat units in operation in the world; coal consumption for electricity generation is 253.48g/kwh, the lowest for double-reheat units in operation in the world. The project has set a new world record for power plants with the lowest coal consumption, and delivers remarkable energy efficiency and emission reductions, providing a new technical path for further promoting the clean and efficient utilization of coal and energy conservation and emission reduction for coal power in China. Meanwhile, the power plant has achieved a leap from being smart to being intelligent, contributing to the upgrading of the world's thermal power

RUV primary pump prototype for wet wound motors

In July 2019, the full-flow primary pump prototype for bench testing manufactured by Shanghai Electric-KSB Nuclear Pumps & Valves Co., Ltd. passed the verification test. The use of wet wound motor technology spares the trouble of canning the stator in the RUV primary pump for wet wound motors. The motor primary pump is smaller and about 10% more efficient than canned primary pumps of the same grade.

Eight years (2011-2019) of painstaking efforts have culminated in the successful development of the RUV primary pump for wet wound motors, which is a major milestone in technology for sealless primary pumps and provides a new option for the application of sealless primary pumps for nuclear power plants. It enables China to independently manufacture CAP1400 primary pumps on an industrial scale instead of relying heavily on imports for third-generation primary pumps for nuclear power plants. The complex technical problems overcome in the development of the primary pump reflect the world-leading R & D capabilities of Shanghai Electric-KSB. It brings good economic and social benefits, enhances Shanghai's international competitiveness in the field of primary pumps for nuclear power plants, and provides further effective guarantees for nuclear safety in China.



Industrial equipment technology

Shanghai Electric's innovation practice in the field of smart equipment

Shanghai Electric aims to build capabilities across the smart manufacturing industry chain covering "basic products - intelligent equipment - software - integration - services".

In terms of smart equipment, Shanghai Techgine Laser Technology Co., Ltd., a subsidiary of Shanghai Electric Automation Group, has developed a variety of laser 3D printing equipment. Meanwhile, it is developing the first laser additive/subtractive 3D printing equipment for large-size components in China. As far as steam turbine blades are concerned, blades were formerly machined by metal cutting, and can now be 3D printed in one go. Of the two machining methods, 3D printing is superior in terms of both product performance and machining costs, and has a good market prospect.



Intellectual property rights

While working intensively on R&D, Shanghai Electric continuously improved its intellectual property management system. In accordance with the Patent Law of the People's Republic of China, the Copyright Law of the People's Republic of China, the Anti-Unfair Competition Law of the people's Republic of China, the Intellectual Property Management Practices for Enterprises, the Guide to Intellectual Property Management in Industrial Enterprises, the Working Measures for Outbound Transfer of Intellectual Property Rights (for Trial Implementation) and other relevant laws and regulations, and according to the actual situation and development needs, we formulated the Intellectual Property Management Measures, the Guide to Intellectual Property Management and other system documents, and urged business divisions to develop detailed rules and regulations. We worked continuously on the creation, management, protection and application of intellectual property rights, promoted the Group's technological progress to improve our market competitiveness, and protected our own intellectual property rights from infringement while avoiding infringement of others' intellectual property rights.



Intellectual property protection

- The intellectual property management departments of business divisions and enterprises directly under them organized and carried out daily basic management, including ownership maintenance, ownership assessment, etc.
- We established an effective risk identification mechanism, early warning mechanism, intellectual property protection system and other relevant management mechanisms and systems.



Intellectual property application

- We strengthened a series of intangible asset operations such as intellectual property licensing and transfer, patent standardization, patent alliances, etc.
- We created an intellectual property due diligence checklist, and required comprehensive intellectual property due diligence on technology imports or mergers and acquisitions.

Strengthened efforts to advance the informationization of intellectual property rights

During the reporting period, Shanghai Electric used information technology to further improve intellectual property management, improved the three-tier structure for intellectual property rights, and made sustained efforts to advance the "Three-One Project" on the informationization of intellectual property rights.

- > Module 1: provide a management evaluation model for management decision-makers in online evaluation and resource allocation decision-making, which was successfully launched on World Intellectual Property Day 2019;
- > Module 2: provide a standardized and convenient real-time management platform for intellectual property managers;
- > Module 3: provide a search and analysis system that helps scientific research personnel avoid infringement risk during R&D and assists R&D.

From intellectual property management and evaluation models that have been implemented, we have sorted out six management dimensions, including system construction, staffing, innovation acquisition, risk prevention, operational rights protection, and internationalization, 30 level-2 indicators and 100 level-3 indicators. We used the AHP quantitative model for decision making to quantify the status of intellectual property management of enterprises in different stages, such as construction, promotion, demonstration and international competition, comprehensively evaluated intellectual property work, and gave management suggestions, so as to improve Shanghai Electric's overall intellectual property capabilities and safeguard innovation and development.



Intellectual property management

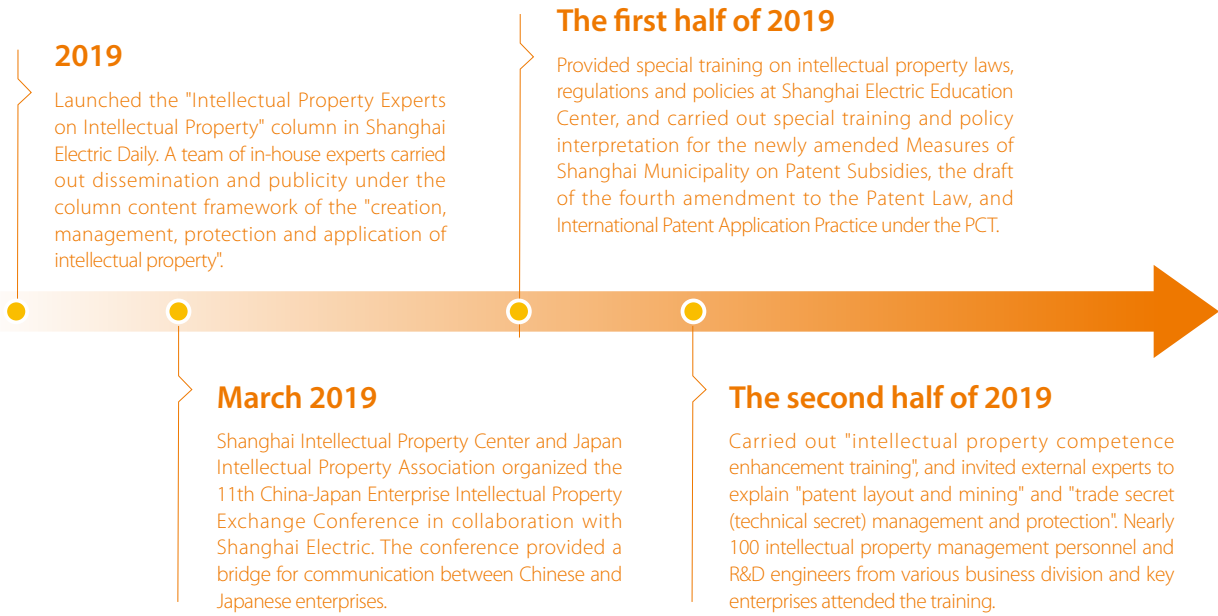
- We clarified our policy and strategic plan for intellectual property rights, and issue the 2019-2021 Action Plan of Shanghai Electric for Intellectual Property (Technology) Management.
- We developed a plan for intellectual property training, including training for new employees, intellectual property and technology R&D personnel, and managers.
- We increased investment in intellectual property, and encouraged business divisions and enterprises directly under them to invest no less than 1% of R&D funds in intellectual property management.



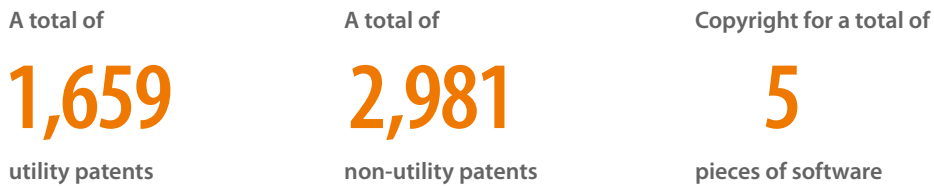
Intellectual property creation

- We formulated and implemented strategies for the acquisition of intellectual property rights, including acquisition through independent R&D, acquisition through cooperative R&D, acquisition through M&As, and acquisition through transfer.
- We urged business divisions and enterprises directly under them to formulate measures for rewarding, remunerating and punishing in connection with intellectual property rights to encourage and promote intellectual property work

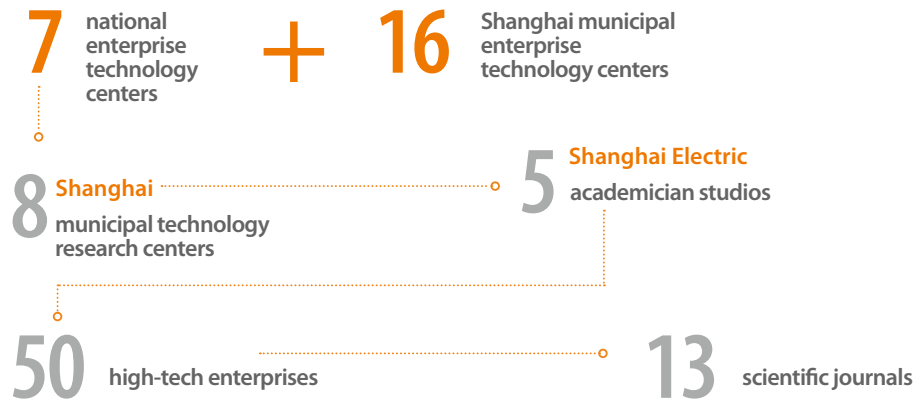
Intellectual Property Training and Publicity at Shanghai Electric



In 2019, Shanghai Electric filed 1,275 patent applications and were granted 785 patents. As of December 31, 2019, Shanghai Electric had 4,640 valid patents and held copyright for five pieces of software.



While promoting technology imports and independent R&D, Shanghai Electric attached great importance to the integration and utilization of R&D resources, and actively established industry-university-research-application consortiums and technology R&D platforms with universities, research institutes and industrial chain enterprises at home and abroad. We have:



Key industry-university-research cooperation projects of Shanghai Electric during the reporting period:



European Scientific and Technological Innovation Center

In order to better practice and participate in the green transformation of energy in China and even in the world, strengthen interaction and linkage with foreign advanced technologies and industrial resources, consolidate Shanghai Electric Wind Power Group's leading position in offshore wind power, and further improve wind power technology capabilities, Shanghai Electric Wind Power Group set up European Scientific and Technological Innovation Center in Denmark in 2018. As of the end of 2019, European Scientific and Technological Innovation Center had 14 full-time employees, it had built R&D muscle of certain strength in terms of blades, loads, control, and wind farm optimization, and international employees accounted for 80% of its staff. In addition, three major science and technology projects were approved and started to be implemented; five utility patent applications were filed within the year, including three international applications. After a comprehensive assessment, Shanghai Electric Wind Power Group's R&D center in Denmark was rated as a "high quality project" in 2019 by the Danish Ministry of Foreign Affairs/Invest in Denmark for its positive effects on society.

Zhejiang University - Shanghai Electric Wind Power R & D Center

Zhejiang University - Shanghai Electric Wind Power R&D Center measures itself against international first-class standards, integrates the superior resources of Zhejiang University and Shanghai Electric Wind Power Group, carries out research on cutting-edge technologies in the wind power industry and the development of large-capacity unit products, and is committed to creating a high-end platform where scientific research and practice are highly integrated and mutually reinforcing. In 2019, it carried out a number of product development and technical research tasks, including the design of direct-drive permanent magnet synchronous generators used in ultra-large offshore wind turbines, the design of full-power converters, etc. In addition to carrying out technical research agreed upon by the two sides, Shanghai Electric Wind Power Group also successfully applied for key and special wind power projects unveiled by the Ministry of Science and Technology under the National Key R&D Program and overcame technical difficulties in the wind power industry jointly with a dozen units including Zhejiang University, greatly enhancing China's indigenous innovation capacity in the field of renewable energy and strengthening China's position as a global technology leader in wind power.



Shanghai Electric - MIT joint research project on rehabilitation robotics

In order to improve the human-computer interaction performance of rehabilitation robot products, improve the user experience of products, enhance the market competitiveness of products, accumulate common core technologies in robot motion control, and cultivate professionals in related fields, Shanghai Electric Central Research Institute and the Massachusetts Institute of Technology (MIT)'s Department of Mechanical Engineering signed a one-year R & D funding agreement in June 2019. Shanghai Electric Central Research Institute will send three engineering personnel as visiting scholars to MIT's laboratory to participate in and learn the entire research process of the project. The results for the current phase of the project have been achieved as planned.

Customer First

Attitude is altitude. We attach great importance to communication with customers and privacy protection in order to gradually improve customer satisfaction.

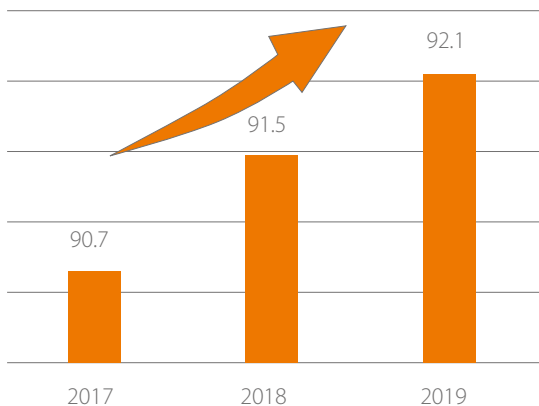
Customer satisfaction survey

Shanghai Electric makes a point of building friendly and cooperative relationships with customers. In order to pursue excellence and continuously improve and enhance customer satisfaction, the Group carries out a customer satisfaction survey through a third-party evaluation center every year, covering enterprise in the manufacturing category, the engineering category and the new industry segment under the Group. Survey scores can fully reflect the product and service quality of the Group's enterprises in the development process. Through the survey, we can obtain customer feedback more objectively and effectively, and gain a comprehensive understanding of customer satisfaction with our products and services, so as to take targeted improvement measures to win customer recognition.

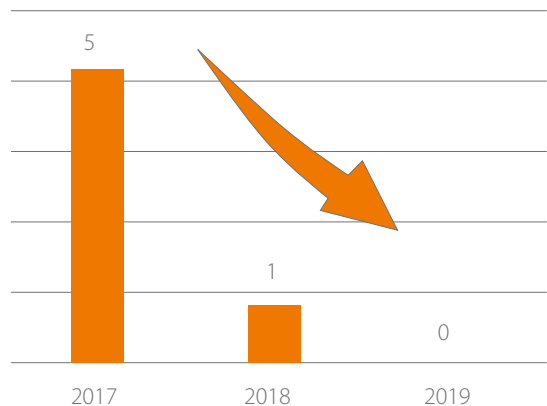
Handling of customer complaints

In dealing with after-sales issues, we adhere to the "customer first" principle. While establishing customer files, we continuously improve the customer feedback mechanism, complaint handling mechanism and rapid response mechanism. Each department of the group has a specially-assigned person to take charge of the record of complaints, organize investigation, analysis and handling of complaints, properly resolve and give satisfactory responses to complainants within a limited time frame, and actively implement corrective and preventive measures to prevent the recurrence of problems. For example, the Power Generation Group and the technical quality department have set up a 400 quality complaint hotline, which is communicated to customers through contracts and the customer satisfaction questionnaires. In 2019, the Group's major business divisions did not receive customer complaints.

Scores of customer satisfaction survey

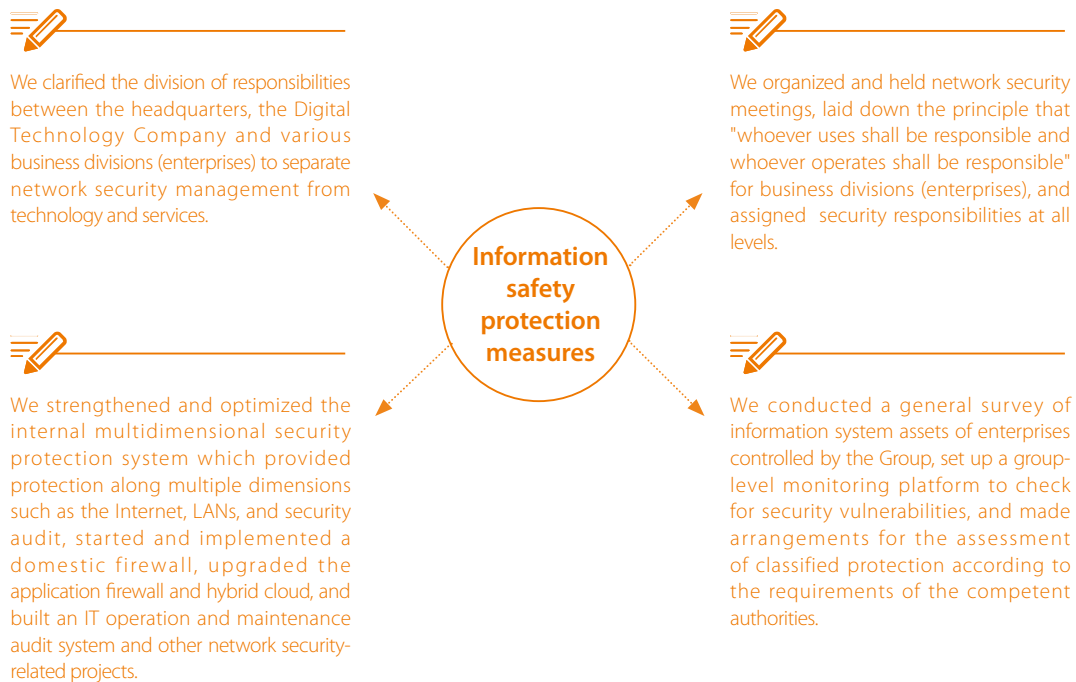


Customer complaints received by business divisions



Network security and information protection

The construction of smart solutions requires the interconnection of a large number of Internet of Things devices, which makes the cyberspace more open and complex, increasing potential risks. Shanghai Electric is well aware that the credibility of solutions and network security is an important consideration for customers. We have established a comprehensive protection system and mechanism for information security in strict accordance with laws and regulations such as the Cybersecurity Law of the People's Republic of China and the Administrative Measures for the Classified Protection of Information Security. In 2019, the Digital Technology Company built its information Security Management System based on ISO27001 and its Information Technology Service Management system based on ISO9001 and obtained the relevant certificates. Meanwhile, it also implemented a management system for the integration of informationization and industrialization in accordance with GB/T23001-2017 Management System for the Integration of Informationization and Industrialization. During the reporting period, we further optimized the General Principles of Information Management and Information Security Management And Control, put in place a number of information security management measures for information asset management, terminal management, system security management, physical environment security management, development security management, etc., and integrated the concept of information security into all work.



In addition, in order to safeguard the rights and interests of Shanghai Electric and protect the privacy of customers, we required all employees to attach great importance to the security of data related to customer privacy. We developed a special customer information confidentiality system to regulate methods for processing and measures for protecting the confidentiality of customer information. Meanwhile, we launched an IT operation and maintenance audit system to record and audit the operational behavior of special internal accounts such as system administrators and supporting accounts such as external consultants to avoid the disclosure of customer information.

03

CREATE VALUE FOR PARTNERS THROUGH WIN-WIN COOPERATION

In the face of a fiercely competitive market environment, we communicated and liaised closely with partners, suppliers and other stakeholders, and established a sharing mechanism and platform for complementary advantages, mutual benefit and common development.

Strategic Cooperation

We further strengthened the resource connection with external enterprises, integrated talent, capital, information, technology and other innovative elements worldwide, enhanced the Group's technological advantages and core competitiveness, shared technological progress, and promoted the development of the industry.



Three giants forged ties of cooperation in the nuclear power market

State Power Investment Corporation Limited, Shanghai Electric Group and Ansaldo Nucleare S.p.A (Italy) formally signed the Memorandum of Understanding on Cooperation in the Nuclear Power Market between State Power Investment Corporation Limited, Ansaldo Nucleare S.p.A (Italy) and Shanghai Electric Group, kicking off practical cooperation between the three parties in nuclear power market development, technology R&D and other fields.



Shanghai Electric and Baowu created the future together

Shanghai Electric Group and China Baowu Steel Group signed a strategic cooperation framework agreement. According to the agreement, the two sides would actively respond to the Belt and Road Initiative and the "Yangtze River Delta Integration" regional development strategy, leverage their respective advantages in information, resources and channels, jointly develop overseas markets, and conduct in-depth cooperation and exchanges in fields such as steel products, equipment technology, energy conservation, environmental protection and e-commerce. Through 26 specific cooperation projects, the two sides would actively explore new areas, new ways and new modes of cooperation, and move forward with the implementation of various projects.

2019 Shanghai Electric Strategic Cooperation Project



Shanghai Electric would help Inner Mongolia Power achieve high-quality development

Shanghai Electric signed a strategic cooperation agreement with Inner Mongolia Power. According to the agreement, the two sides intended to carry out in-depth exchanges and cooperation in power grid construction, new energy, environmental protection, scientific and technological innovation, talent exchange, and international business, jointly promote cooperation in investment, construction and demonstration projects for power transmission and distribution equipment, incremental distribution networks, smart grids, and microgrid systems, explore cooperation in key areas such as new energy development, the quest for a balanced energy mix, power storage, energy conservation, environmental protection and new energy management systems, and work together to expand the market for new energy applications.



Shanghai Electric and ACWA Power started global cooperation

Shanghai Electric Group and ACWA Power signed a memorandum of understanding on global cooperation. The memorandum of cooperation focused on future cooperation between the two sides, including the joint development of solar photovoltaic, solar thermal and other solar power projects, wind power, desalination and other new energy projects, as well as traditional energy projects such as gas turbines, combined cycles and thermal power. Development would expand from ACWA Power's traditional markets (i.e., Arab countries) to the whole world.

Clean Development

We abide by competition laws and regulations, resolutely oppose commercial corruption, and are firmly determined to take the fight against corruption to our partners.

Shanghai Electric not only actively advances its own work on improving Party conduct, upholding integrity, and combating corruption, but also focuses on the prevention of integrity risks for its partners in the risk control system by extending business ethics and integrity awareness to its partners, so as to jointly build a clean and honest business environment.

In order to strengthen efforts to improve Party conduct and uphold integrity in the field of procurement, and prevent all kinds of violations of discipline and the law involving the seeking of improper benefits in procurement activities, we have established

a Procurement Contract-Integrity Agreement "double contract" signing mechanism, requiring that all suppliers who provide products or services to us must sign the Integrity Agreement when they sign a contract with us. Suppliers from whom we purchase multiple times in a year are required to sign the Integrity Agreement at least once a year. For suppliers who have breached the Integrity Agreement, the "blacklist" system will be implemented, and measures will be taken in a timely manner in accordance with the relevant regulations to deal with them sternly.

Legal knowledge training program for personnel who sign contracts with external parties

Since 2015, in order to raise awareness of legal risks among personnel of Shanghai Electric's affiliated enterprises who sign contracts with external parties, enable them to master certain legal risk resolution skills, mitigate the adverse legal consequences brought to enterprises by irregularities, keep enterprises' property and transactions safe, and ensure the healthy, orderly and sustainable development of enterprises, we have launched and implemented a legal knowledge training program for personnel involved in marketing, procurement, engineering, project management and other lines of business at subordinate enterprises who sign contracts with external parties.

Training is carried out through "online registration + the development of online resources for self-study + centralized face-to-face training + examination". Training courses are carefully designed by the Group's legal department and mainly cover contract law, guarantee law, civil law and procedural law. Trainers are well-known lawyers in relevant fields and professionals at the Group's legal department. Trainees can not only improve their legal awareness, but also acquaint themselves with the basic requirements for professional certification and the Group's legal system and culture. As of December 31, 2019, more than 4,000 people have undergone training and obtained certificates necessary for their jobs.



Responsible Procurement

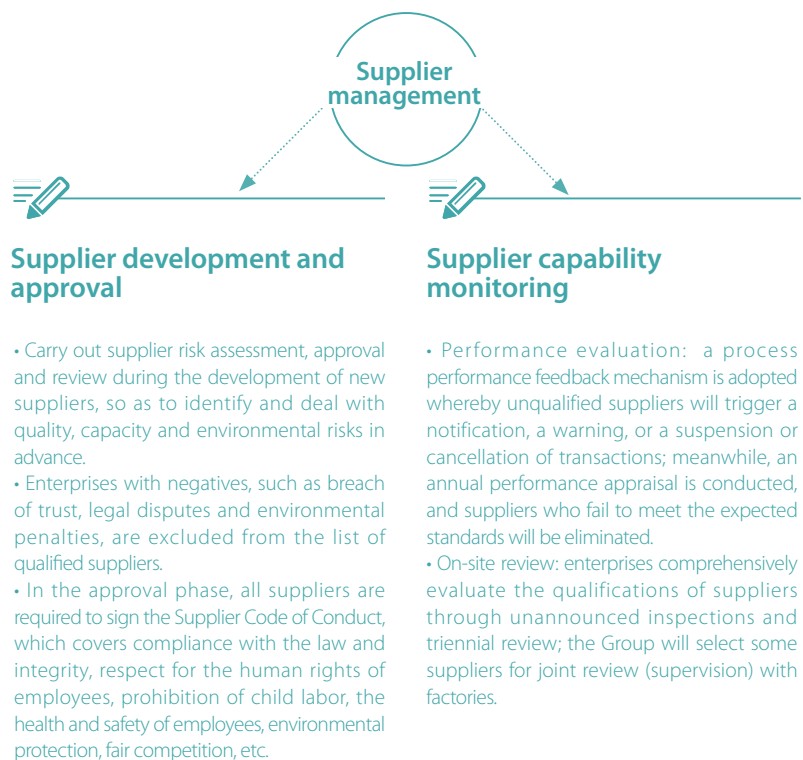
We actively built a responsible supply chain, strengthened supply chain management, and helped suppliers improve their learning and compliance practice capabilities, so as to improve the overall efficiency and sustainability of the supply chain, and achieve a "clean, open and win-win" procurement and supply chain system.

Purchase management

As for purchase management, we strictly adhered to the national laws and regulations including Contract Law of the People's Republic of China, Law of the People's Republic of China on Tenders and Bids, Law of the People's Republic of China on Product Quality, Pricing Law of the People's Republic of China, Guarantee Law of the People's Republic of China, Audit Law of the People's Republic of China and Anti-unfair Competition Law of the People's Republic of China and formulated purchase management system and regulation including Shanghai Electric's Purchase Management, Shanghai Electric's Centralized Purchase Management and the International Procurement and Supplier Management Plan in the combination of the actual situation of the Group to normatively improve the development of a detailed procurement management framework, procurement management principles and appropriate operating procedures by the subsidiaries under the Group, and provide a sound foundation for improving purchase operation capability and product quality of the Group.

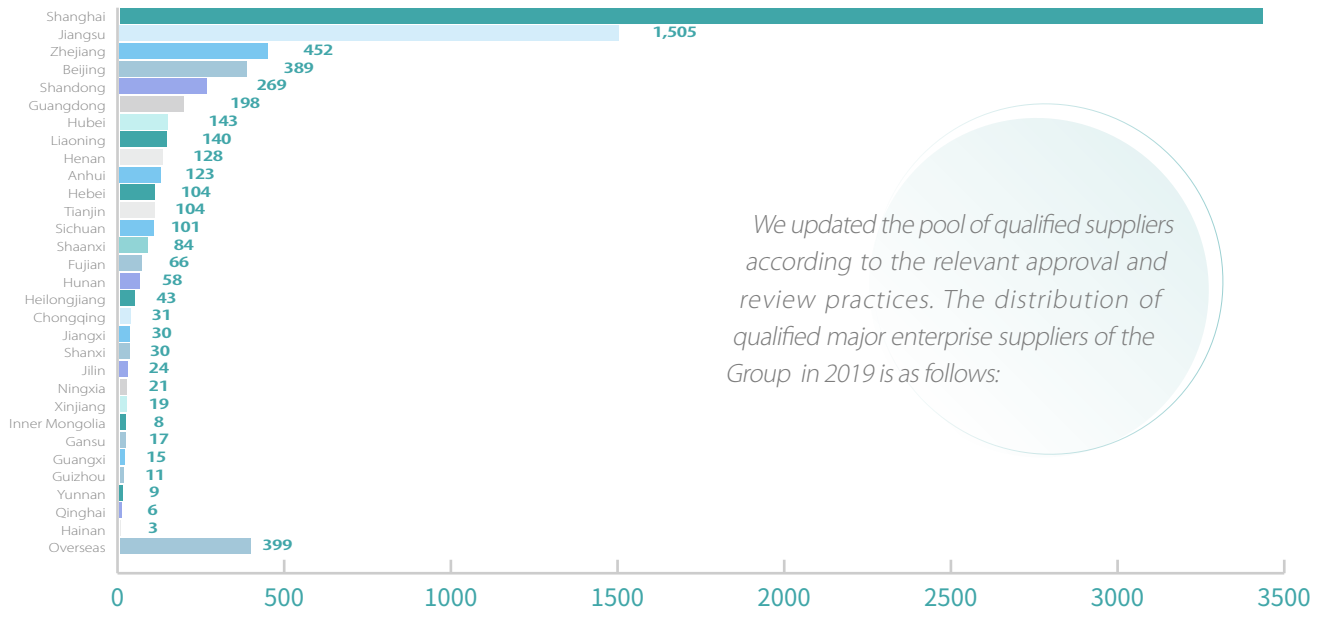
Supplier management

Based on the concept of win-win cooperation with suppliers, Shanghai Electric continuously improved the supplier management system, improved supplier lifecycle management covering supplier development and approval, capability monitoring and other processes through regular review and revision of supplier management policies and systems, and led suppliers to improve quality management, their social responsibility awareness and their ability to fulfill their social responsibility, so as to reduce our exposure to supply chain risks and ensure the stability of production and operation.





Distribution of major enterprise suppliers of Shanghai Electric



We updated the pool of qualified suppliers according to the relevant approval and review practices. The distribution of qualified major enterprise suppliers of the Group in 2019 is as follows:

Shanghai Electric carried out unannounced inspections of suppliers

During the reporting period, Shanghai Electric organized a team of quality experts to conduct unannounced inspections of key suppliers of enterprises such as Shanghai Turbine Works Co., Ltd., as well as Engineering Company's solar thermal power project in Dubai. The inspections covered: quality management system and quality control, quality evaluation, on-site quality supervision and control, quality system operation, enterprise management, engineering quality and satisfaction, and evaluation of the effectiveness of project management by Shanghai Electric Power Generation Engineering Company.

Measures to optimize supplier management for Shanghai Electric Power Generation Group

- > Engineering Company strengthened the inspection of suppliers' ability to perform contracts, with a focus on project contract disclosure, performance risk assessment and improvement, and helped suppliers provide conforming products;
- > Strengthened the collection of data on suppliers' daily performance to provide a basis for accurate and objective performance evaluation;
- > Implemented a supplier interview mechanism whereby key suppliers and suppliers whose performance is a focus of concern are summoned to talk about improvement requirements and measures, so as to improve the quality of the products they provide next time.

Suppliers of Wind Power Group signed the Agreement on Workplace Safety and Environmental Protection

In order to implement the safety policy of "safety first, prevention first, comprehensive management", clarify the responsibility of suppliers for workplace safety and environmental protection, and ensure the safety of the goods supplied and the effective carrying out of environmental protection, during the reporting period, Shanghai Electric Wind Power Group signed the Agreement on Workplace Safety and Environmental Protection with all suppliers, requiring them to strictly abide by national and local laws and regulations on environmental protection, occupational health and workplace safety, as well as Shanghai Electric's management systems on environmental protection, occupational health and workplace safety, fulfill their responsibilities and strengthen management.

In addition, the Group continuously explored and practiced, promoted dynamic, real-time and informationalized supply chain management in collaboration with various departments, and developed a customized supplier management informationalization platform (SRM, Supplier Relationship Management), which has independent intellectual property rights. Based on Shanghai Electric's existing internal cloud platform, the platform extends outward to connect the upstream and downstream portions of the supply chain. During the reporting period, we promoted 20 new enterprises (62 enterprises in total) through the platform, upgraded and optimized the supplier lifecycle management module, and added three functional modules, namely, tendering and sourcing, procurement coordination, and e-mall to significantly improve the efficiency of supply chain management, and made efforts to create an interactive and collaborative supply chain ecosystem.

Supply relationship maintenance

Shanghai Electric always promotes supply chain construction as the key to the sustainable development of enterprises. In view of the fact that the ability to learn and the willingness to practice varied from supplier to supplier, various business division carried out a variety of communication activities aimed at improving the supplier operation system, so as to create a win-win atmosphere for supply-demand coordination and enhance the overall development capacity of the industry.

Measures for the maintenance of supplier relationships

Organize a supplier conference



At the supplier conference, talk to suppliers face to face about the strengths and weaknesses in their performance, and at the same time publicize the technical development plan and procurement management requirements.

Hold seminars on common issues



Hold supplier seminars on common issues, such as developing emerging markets, expanding service markets, etc.

Coaching and training



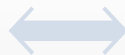
Help suppliers improve their quality management capabilities through special quality coaching and training.

Carry out exchanges on centralized procurement



Carry out exchanges on centralized procurement in an area where suppliers are concentrated.

Customer feedback



Make regular quality visits to customers, and communicate customers' requirements for products to suppliers to help suppliers improve product quality and refine the direction.

Shanghai Electric Supplier Training

- > In September 2019, in order to improve the nuclear safety awareness and professional inspection skills of suppliers' quality inspectors, we held two training sessions on nuclear safety culture and professional inspection skills respectively for suppliers' quality inspectors, assessed them and issued certificates to those who passed the assessment. 31 persons from 10 suppliers participated in the training;
- > In order to further improve the professional capabilities of the industrial chain quality management team of Shanghai Electric Nuclear Power, reinforce the effects of quality management planning and promotion, and thus upgrade Shanghai Electric Nuclear Power's industrial chain quality management as a whole, Shanghai Electric Nuclear Power invited China Nuclear Power Engineering Co., Ltd. to provide training on quality manager certification for Shanghai Electric Nuclear Power and its suppliers. 40 persons from 19 units participated in the training;
- > We carried out skills training for subcontractors' inspectors, and set up an assessment and scoring mechanism. One inspection skills training session was conducted. A total of four training sessions and two examinations were held, covering more than 10 key subcontractors, with 34 person-times of external inspectors trained. Special scoring rules and procedural documents were developed.

04

CREATE VALUE FOR EMPLOYEES WITH DECENT WORKING CONDITIONS

Shanghai Electric insists on people oriented concept, and has established a sound human resources management system. On the basis of fully protecting the legitimate rights and interests of employees, we provide a variety of career development opportunities according to industry trends and the Company's development strategy. We have built a scientific training and incentive mechanism, and created a safe, healthy and comfortable working environment for employees.

Protection of Rights and Interests

We always treat our employees reasonably in accordance with the law, promote harmonious labor relations, and protect the legitimate rights and interests of Shanghai Electric employees.

Employment Overview

Since its inception in 2004, Shanghai Electric has brought together a large number of talents with visions to change the industry and the world. This diverse workforce comprised of people from different regions not only contributes excellent skills and advanced technology, but also brings good values to our industry and community.

During the reporting period, Shanghai Electric standardized recruitment management for different regions, formulated Recruitment Management and Recruitment Implementation Rules, revitalize the potential of the internal talent market while strengthening external recruitment, created a high-quality talent structure, and helped talents create greater value in more suitable positions.



Strengthened external recruitment

- Strengthened the building of our employer brand on campus, and set up Shanghai Electric-Huazhong University of Science and Technology Creators Club in addition to partnerships with Shanghai Jiaotong University, Zhejiang University and Harbin Institute of Technology, so as to enhance the Group's influence and attraction in key universities;
- Through the summer camp and sharing session with outstanding talents, built a pool of excellent students to lock in excellent students in advance;
- Based on the implementation of campus recruitment in 2019, published the White Paper on Campus Recruitment 2019 to guide campus recruitment in 2020



1



2



Revitalize the potential of the internal talent market

- Published the Internal Talent Market Management, configured the internal recruitment and internal referral system platform, kept the self-recommendation and referral channels open, offered internal referral points / bonus incentives, built an internal talent pool, and formed a long-term talent recommendation and discovery mechanism;
- On the basis of respecting the wishes of both talents and enterprises, achieved the orderly flow of high-quality talents within the Group through the establishment of protective policies, restrictive policies and incentive policies;
- Through advertising in Shanghai Electric Daily and OA/the launch of a column in Shanghai Electric Daily to ensure that employees have effective, timely access to internal recruitment and internal referral information



3

1. Shanghai Electric-Huazhong University of Science and Technology Creators Club
2. Summer camp
3. Sharing session with big names

In 2019, Shanghai Electric recruited a total of 2015 new employees, bringing its workforce to 33,720; the average salary for employees was RMB 167,470 a year. The labor contract signing rate was 100%, and the social insurance coverage rate was 100%.

Year	Total number of people	Male	Female
2017	29,552	23,787	5,765
2018	30,182	24,063	6,119
2019	33,720	25,290	8,430

Year	<20 years old	20-29 years old	30-39 years old	40-49 years old	50 years old and above
2017	8	7,774	8,570	6,955	6,245
2018	3	7,893	8,734	6,987	6,565
2019	10	9,398	9,776	7,570	6,966

Year	Doctor's degree	Master's degree	Regular college	College degree	Below College degree
2017	119	2,646	10,853	6,520	9,414
2018	125	2,765	11,356	6,534	9,402
2019	142	3,115	13,133	7,348	9,982

Year	Management	Production	Sales	Technical research	Financial audit	Administrative logistics
2017	2,055	13,866	2,659	8,580	887	1,505
2018	2,083	13,895	2,782	9,056	903	1,463
2019	2,709	15,202	3,072	10,206	991	1,540

Year	Senior managers	Middle managers and engineers	General and technical staff
2017	194	7,892	7,600
2018	202	8,286	7,799
2019	207	9,519	8,792

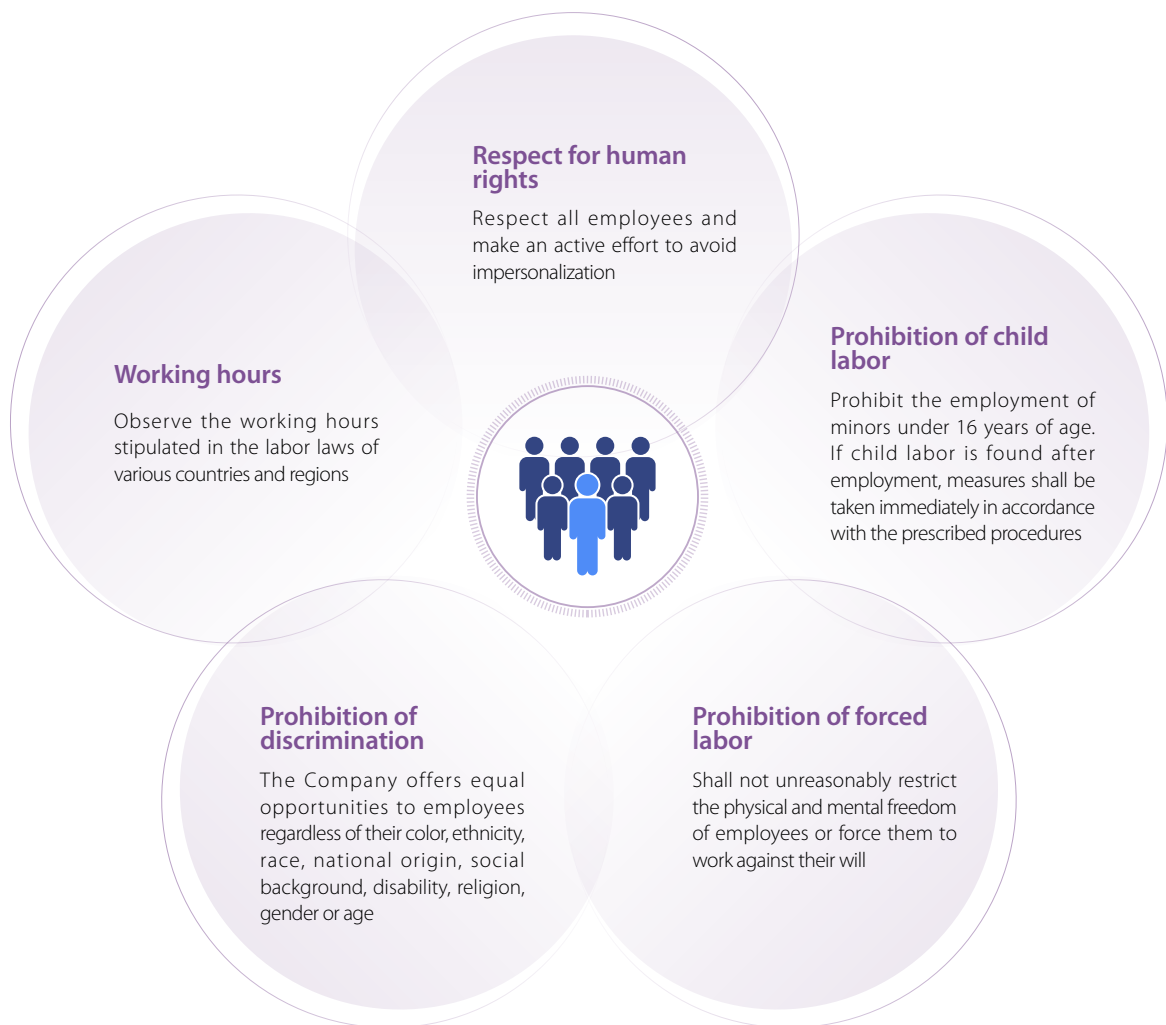
Employee turnover in 2019 (as a percentage of the total workforce)

Year	Gender		Age				Region	
	Male	Female	Below 30	30-39	40-49	50 and above	Shanghai	Non-Shanghai
2018	2.2%	0.3%	1.2%	1.0%	0.3%	0	2.5%	0
2019	1.8%	0.3%	1.1%	0.7%	0.3%	0	2.1%	0

Labor rights

The Group strictly abides by international and domestic laws and regulations such as the Labor Law of the People's Republic of China, the Labor Contract Law of the People's Republic of China, the Employment Promotion Law of the People's Republic of China, the Special Regulations on Labor Protection for Female Employees, the Trade Union Law of the People's Republic of China, the Law on the Protection of Minors of the People's Republic of China, and the Regulations on the Prohibition of Child Labor, as well as the corresponding conventions, and constantly improves human resources management. In order to fully protect the rights and

interests of workers and standardize employment management in different regions, we have formulated the Shanghai Electric Employee Handbook, which sets forth detailed provisions concerning all aspects of human resources management in an effort to reflect the Company's consistent and flexible human resources management philosophy which is built on fairness and reasonableness, effective motivation, and respect for employees, guarantee the rights and interests of employees, and give full play to the role of the Company as a multinational corporate citizen.



In terms of compensation and benefits, we provide all employees with comprehensive compensation and benefits, including wages, bonuses, social insurance, a people-friendly paid vacation system, and a sick leave system that complies with national and local laws and regulations. Shanghai Electric offers a competitive starting salary higher than the minimum standard stipulated by the labor regulations of the country or region where it operates based on market salary data and its own operating conditions. In addition, we also encourage subordinate enterprises to pay contributions to enterprise annuities and supplementary medical insurance contributions for employees if conditions permit. In terms of employee welfare, Shanghai Electric creates convenience for employees in housing, settlement, and nursing.

Democratic management

Through democratic management, we intend to protect employees' right to know, right to participate and right to supervise. We have set up trade unions, constantly improve the trade union system, and promote the exchange of information between trade unions at all levels and between trade unions in other places and the trade union in Shanghai. After a new employee joins an enterprise, the trade union of the enterprise will contact him or her, informing him or her of the rights and obligations of trade union members. Membership is voluntary. As of December 31, 2019, all employees of Shanghai Electric were trade union members.

Strengthened guidance on the trade union work of enterprises outside Shanghai

Shanghai Mechanical and Electrical trade union (Group Trade Union) strengthened contact and interaction with the trade unions of enterprises outside Shanghai with a view to further bringing together efforts to do a good job in the trade union work of enterprises outside Shanghai and better serving the staff and workers of enterprises outside Shanghai. In July 2019, a seminar on the trade union work of enterprises outside Shanghai was held at Shanghai Electric Wind Power Equipment Dongtai Co., Ltd. At the seminar, the local trade union, the trade union of the parent company, and the trade unions of enterprises outside Shanghai exchanged views on democratic management in enterprises outside Shanghai, covering issues such as the staff and workers' (representative) congress system, collective bargaining, and transparency in factory affairs.



Shanghai Electric holds collective bargaining meetings covering all enterprises and employees of the Group regularly in strict accordance with the Opinions on Strengthening the Collective Wage Bargaining Work and the Measures of Shanghai Electric Group for the Implementation of the Workers' Congress System, and implement the staff and workers' representative congress system in depth in an effort to build a harmonious and stable labor relationship.



Strengthen collective wage negotiation

On the morning of February 20, 2019, Shanghai Electric Group held a collective meeting. The meeting was attended among others by secretary and chairman of the Party committee of the Group Zheng Jianhua, deputy secretary of the Party committee and head of the human resources department of the Group Zhu Zhaokai, chairman of Shanghai Mechanical and Electrical trade union Zhu Bin, and chief financial officer of the Group Hu Kang, as well as representatives of both sides and relevant personnel. At the meeting, the administrative side and the employee side exchanged views on enterprise development and the adjustment of employees' income, and agreed to modify the main terms of the collective contract, the wage contract and the contract for the protection of the rights and interests of female employees for 2019.

Held the fourth session of the second staff and workers' representative congress

The fourth session of the second staff and workers' representative congress of Shanghai Electric Group was held on February 22, 2019. 186 official representatives and 12 non-voting representatives attended the meeting. The Collective Contract of Shanghai Electric Group 2019, the Special Collective Contract of Shanghai Electric Group for the Protection of the Rights and Interests of Female Employees 2019, and the Special Collective Contract of Shanghai Electric Group for Wages 2019 was passed by a vote and approved at the meeting.



Employee communication

We have built an all-round communication system for employees, so as to listen to the voice of employees in time, find out what they want and help them solve problems they encounter at work and in life. We hold "Face to Face with Executives" activities on a consistent basis to give the Group's executives the opportunity to listen to the voice of employees; we hold communication meetings for new employees, exchange meetings for existing employees, and satisfaction surveys from time to time in an effort to broaden the channel of communication between employees in different positions, in different departments and at different levels, motivate employees in the workplace, and improve employee satisfaction.

"Listen to the Voice of Youth" - Shanghai Electric Youth League Column

In April 2019, the new media column "Listen to the Voice of Youth", created by the Youth League Committee of the Group, was officially launched with a view to evaluating the league building work of enterprises from the perspective of young employees. So far, nine issues have been released, including the "Communist Youth League in my eyes" series, "New Youth Forum Sharing", "May 4th Youth Conference in Focus", etc. The column puts a spotlight on young individuals, effectively closes the distance between youth and enterprises, and provides a convenient channel for youth to make comments, express opinions and make suggestions.



Shanghai Electric carries out the work on the presentation of rationalization proposals by staff and workers every year. In 2019, we launched a brainstorming campaign. All enterprises of the Group actively participated in the activities, with nearly 6,000 suggestions received. After follow-up supervision and further refinement, 70% of the suggestions were implemented, 25% were scheduled for implementation when conditions were ripe, and 5% needed to be improved or were turned down for not meeting the requirements. The campaign played a positive role in the transformation and development of the Group, and in building confidence and consensus among staff and workers.

In addition, the trade union implemented a system for receiving letters, calls, and visits from staff and workers. For each letter, call or visit, reception, investigation, response, mediation and legal aid are led by the trade union office and the labor relations department. We also hired professional lawyers to popularize legal knowledge and solve problems for staff and workers. In accordance with the principle of "centralized management and graded responsibility", we further strengthened the standardization of reporting by letters, calls, and visits.

During the reporting period, there were labor litigation and arbitration cases involving the Group, and most of the cases have been concluded. Among the cases that have been concluded, 40% have been settled by mediation, and 60% by adjudication. Analysis shows that labor dispute cases in 2019 revolved mainly around the legality of the dissolution of labor relations, differential calculation for various benefits and some issues left over by history. Through our active response to the lawsuits, we have resolved the contradictions with employees well. We have fully performed the obligations stipulated in mediation agreements and determined by judiciary.



Health and Safety

We continued to promote and implement the standardization of occupational health and safety production management at the headquarters and subordinate business division in an effort to create a good working environment for employees.

Health and safety system building

The Group always cares about the occupational health and safety of its employees. We believe that a safe and healthy workplace is the most basic guarantee that an enterprise should provide for its employees. We always comply with the requirements of the ISO 45001:2018 Occupational Health and Safety Management Systems — Requirements with Guidance for Use, the GB/T24001-2016 Environmental Management Systems — Requirements with Guidance for Use, and the GB/T 33000-2016 Basic Norms for the Workplace Safety Standardization of Enterprises when it comes to building our health and safety management system, actively benchmark ourselves against global occupational health and safety laws and regulations, and review and update related systems. As of December 31, 2019, 80% of the subordinate enterprises have been certified to OHSAS18001, and reviews are carried out annually.

We strictly abide by national laws and regulations such as the Law of the People's Republic of China on Workplace Safety, the Law

of the People's Republic of China on the Prevention and Control of Occupational Diseases, the Measures for the Administration of Emergency Plans for Workplace Accidents, adhere to the implementation of a responsibility mechanism for workplace safety and environmental protection whereby "both CPC committees and governments are held accountable, officials take responsibility for workplace safety in performing their duties, relevant departments work together on workplace safety, and those who fail to uphold safety standards are held accountable", have set up a workplace safety and environmental protection committee, and continuously strengthen the building and implementation of the environmental health and safety (EHS) management system in accordance with the Workplace Safety and Environmental Protection Management System of Shanghai Electric, the Occupational Health, Safety and Environmental Protection Management Manual of Shanghai Electric, the Guide to Workplace Safety, Protection Against Occupational Diseases, and Environmental Protection Responsibility for Enterprises and other institutional norms.



Occupational health & Safety management

01 Management system building

- Developed the Group's EHS development strategy and plan, and provided guidance to subordinate enterprise on developing sub-plans
- Optimized and updated the EHS management system and operating procedures, guided and reviewed the revision of subordinate enterprises' systems

02 Risk control and emergency management

- Identified sources of danger, occupational hazards and environmental factors in the Group, carried out a risk assessment, and established and implemented major risk control measures
- Established and optimized the Group's emergency plan system, and organized emergency drills at the Group on a regular basis

03 Technical management

- Urged production units to implement new technologies, new processes, new materials, new equipment, and the "three simultaneous" stipulation for new construction, alteration and expansion
- Organized feasibility studies, safety and environmental reviews and final inspections for the Group's major productive construction projects

04 Supervision and management

- Implemented EHS vertical management and supervision, and developed an inspection and supervision plan
- Organized the Group's EHS performance assessment, evaluated management and implementation by various business division and production units

05 Culture building and training

- Promoted safety culture and the application of safety technologies
- Identified the environmental and safety training needs of the Group, business division and various units, and assisted and guided the implementation of training.

In order to further ensure the timely and effective prevention and control of the Group's workplace safety and occupational health risks, Shanghai Electric carried out the following key optimization projects on occupational health and safety management in 2019.

No.	Project name	Project requirements and main results
1	Safety (occupational hazard) risk assessment	Checked the risk control measures of the Group's enterprises, evaluated the measures put in place and the effectiveness thereof, and put forward compliance suggestions for strengthening control.
2	Workplace safety standardization	Promoted and implemented the standardization of occupational health and workplace safety management at the headquarters and subordinate business division, and comprehensively completed the periodic certificate renewal review work for workplace safety standardization at 68 enterprises.
3	Operation safety template for large-scale construction projects	Standardized on-site safety and environmental protection management for large-scale projects, and established a standardized operation management template for workplace safety and environmental protection for the Group's large-scale projects.
4	Risk assessment for hazardous chemicals management	Screened out hazardous chemicals and hazardous waste in 19 hazardous chemical-using and storing enterprises which were initially evaluated in 2019, checked the procurement and use of hazardous chemicals and the disposal of hazardous waste by enterprises, and further assessed the risks associated with hazardous waste management.

In 2019, the Group held the safety bottom line, and did not deviate from any workplace safety targets. Throughout the year, there were 0 fatal accidents, 0 accidents that resulted in serious injuries, and 19 accidents that resulted in minor injuries (including eight struck-by accidents, two machinery accidents, one fire, one fall from height accident, and seven accidents that resulted in other injuries), resulting in the loss of a total of 1,814 working days. There were no workplace and fire accidents that have a serious negative impact on society, nor were there new cases of occupational diseases. Meanwhile, all business division and subordinate enterprises basically met the occupational health and safety objectives and targets set in the Letter of Responsibility of Shanghai Electric for Workplace Safety and Environmental Protection to which they were signatories.



Health and safety training and publicity

In order to implement the concept of safe development, carry out the strategy of "promoting safety through science and technology", raise the safety awareness of employees, and strengthen employees' occupational disease prevention knowledge and skills, we formulated a health and safety training plan for employees at the Group's headquarters, implemented training management, identified the health and safety training needs of the Group, business division and various units, and assisted and guided the implementation of training.



In terms of safety culture building, the Group organized and carried out a "Safe Production Month" activity centered around the theme "preventing risks, removing hidden dangers, and curbing accidents" in June, popularized safety knowledge and heightened safety awareness through a variety of special actions such as safety knowledge publicity, training, education, competitions, etc., further strengthened the safety management mechanism, and improved the quality level of workplace safety and the ability to prevent accidents.





Safe Production Month Activities

Clarified responsibility through publicity, implementation and training

- Held a symposium on the responsibility system for safety and environmental protection
- Organized lectures on safety and environmental protection for Party and administrative leaders at enterprises, and conducted a total of 492 training sessions, with 14,918 person-times participating
- Held an exhibition of achievements in safety culture and standardization, with 1,150 person-times visiting
- Continuously advanced the EHS work

Further upgraded risk control

- Organized and held special training on risk control, with a total of 784 person-times participating
- Held training on labor protection for cadres in collaboration with Shanghai Mechanical and Electrical trade union, with a total of 3,909 person-times participating
- Further strengthened risk identification and check for hidden dangers

Promoted culture through education and publicity

- Popular science exhibitions on workplace safety and environmental protection, such as the "Workplace Safety Experience Pavilion"
- Carried out workplace safety publicity, popularization and knowledge competitions, such as 404 warning education sessions which were attended by 23,365 person-times and the "Ankang Cup" competition which was attended by 6,441 person-times

Ensured safety through special actions

- Various units conducted 195 exercises to test contingency plans, with a total of 5,000 person-times participating
- Organized and carried out self-inspection on the use of personnel protective equipment, and completed 102 rectification items
- Strengthened the safety and environmental protection supervision and management of relevant parties, and completed 53 rectification items



- 1 Exhibition of achievements in safety culture and standardization
- 2 Special lecture on safety for the leadership
- 3 Visiting the Workplace Safety Experience Pavilion

During the reporting period, Shanghai Electric won the following awards in terms of health and safety:

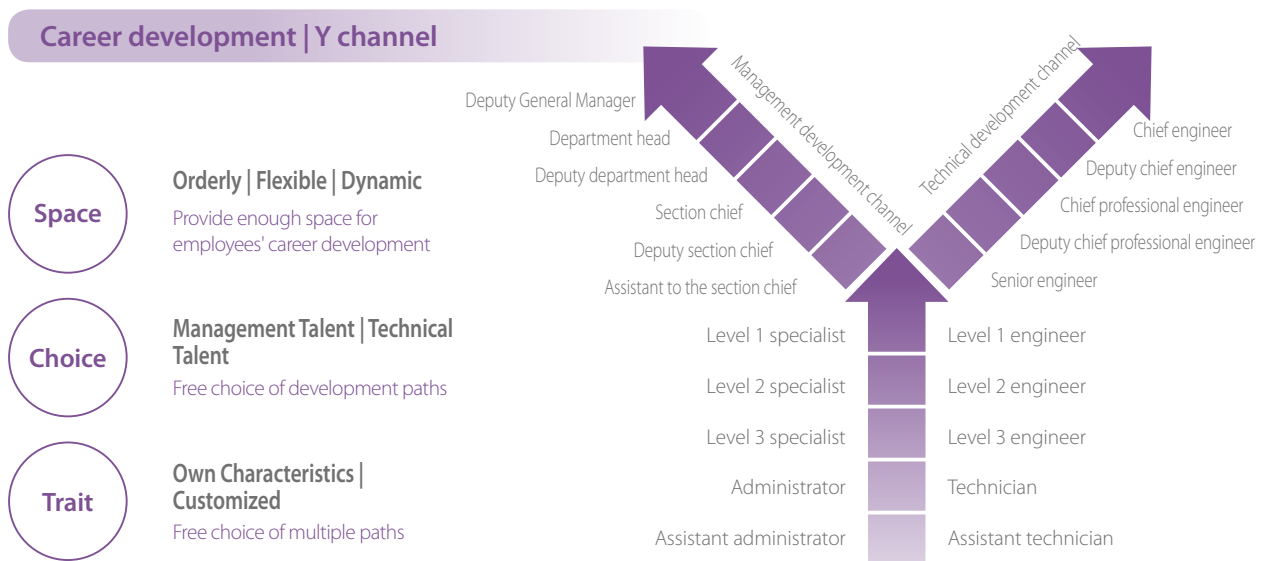
1	Shanghai Electric won the title of advanced enterprise for workplace safety standardization in China's machinery industry
2	Shanghai Electric Nuclear Power and Shanghai Electric Wind Power Group were recommended as demonstration units for safety culture building in Shanghai
3	Shanghai Electric's Safety Culture Creation Model, Performance Measurement and Empirical Application for Large Enterprise Groups won the second prize of the Award for Progress in Safety Technology of China Association of Work safety

Growth and Development

We highly respect the work of our employees and strive to lay a clear and smooth path for their promotion and development

Development incentives

Career development is needed for the continuous improvement and development of each employee's quality and potential. Shanghai Electric has built a career development platform for employees, established a two-way career development channel for managerial and technical staff, and clarified the performance management methods in the Performance Management system. We have established key performance indicators as the fundamental basis for hierarchical evaluation, and comprehensively measure employees' competency along the dimensions of capabilities, specialties and performance, so that employees in different positions have multiple career paths for sustainable development.



In order to further establish and improve the Company's long-term incentive mechanism, attract and retain outstanding talents, fully mobilize the enthusiasm of the Company's directors, senior managers, middle-level managers and core technology (business) backbones, and make all parties focus their attention on the Company's long-term development, Shanghai Electric announced an A-share restricted stock incentive plan on May 6, 2019, granting a total of 134 million shares of A-share restricted stock to 2,194 employees. The number of incentive recipients is the highest among municipally managed enterprise groups in recent years.

Ability cultivation

During the reporting period, Shanghai Electric further sorted out the management responsibilities and positioning of the Group's human resources department, the party school's education center, Libin Technician Institute, and enterprises, so as to support the training and development work with a more complete management system and operation system. We provide targeted training for employees at different levels, and offer multi-dimensional training content, including corporate culture, professional skills, general skills, management and leadership development training; conduct various forms of training, including face-to-face training, on-the-job training, rotational training, mentoring and online learning.



During the reporting period, training by gender and employee category was as follows:

	Female			Male		
	High level	Middle level	Employees	High level	Middle level	Employees
Coverage rate	100%	100%	99.9%	100%	100%	99.9%
Average time (days)	5	6	3.5	5	6	3.5

Training and Development Curriculum System



New employee series - induction training

During the reporting period, Shanghai Electric continued the curriculum framework of "main module + auxiliary module" for induction training around the theme of "meeting new minds and growing together with Shanghai Electric" on the basis of successful practice in previous years combined with the research findings of multiple parties, adhered to demand and problem orientation, enriched the curriculum system, strengthened exchanges between groups and between enterprises and colleges, and made training and assessment fun, so as to help new employees enhance their strategic awareness, cultural identity and self-awareness more quickly.



Leadership development series - rotational training program for young leading cadres

During the reporting period, Shanghai Electric further improved the management system for the identification, selection and training of young cadres, and formed the "rotational training program for young leading cadres of Shanghai Electric Group" which was targeted at more than 200 leading cadres of the Group. Under the program, a competency model for young cadres was constructed based on the characteristics of Shanghai Electric, and the phenomena of "putting inclusion into the talent pool above management" and "putting selection above cultivation" for reserve cadres were put to an end through the use of multi-dimensional identification and evaluation tools, and personalized training plans.

Professional development series - young talent pool project

We have implemented the "Shanghai Electric Young Talent Pool" project for young reserve talents who demonstrate high levels of professionalism, have worked for the Company for five to ten years, and have good development potential. In terms of cultivation objectives, guided by the Group's strategic development and focusing on positions that require specialization, we put forward the idea of "3 + 3" training by specialty covering management, technology and skills, as well as professionals in short supply such as those who specialize in post-investment management, marketing, and international project management. The "talent pool" will become a "reservoir" of high-level leading talents in various fields, expanding the horizon for the building of the Group and enterprises' three professional talent teams, namely high-level professional talents, leading talents in new business areas, and international young talents.



Bear in mind our original aspiration - strengthen the building of Shanghai Electric's employee culture

Shanghai Electric continuously strengthens publicity for employee spirit. Li Bin is an outstanding representative of workers. The Lin Bin spirit of "devotion to work, hard work, courage to innovate, and selfless dedication" embodied in him is also the employee spirit of Shanghai Electric. In 2019, the Group's Party committee issued the "Notice on Further Learning from Comrade Li Bin". Shanghai Mechanical and Electrical trade union (Group Trade Union) widely publicized Li Bin's deeds and promoted Li Bin's spirit by holding report meetings and organizing people to watch videos of report meetings. According to statistics, 66 grassroots trade unions held 762 report meetings on Li Bin's deeds, and a total of more than 26,000 staff members and workers watched videos of these report meetings, which resonated strongly with staff members and workers.

Care and Support

We pay close attention to the daily needs of our employees and organize various activities to increase their sense of happiness at Shanghai Electric.

Since the launch of the campaign to create harmonious labor relations in Shanghai, Shanghai Electric has been awarded the honorary title of "Enterprise with Harmonious Labor Relations in Shanghai" many times. This is not only recognition and praise given to Shanghai Electric for its action to actively undertake social responsibility, create a harmonious working atmosphere and build a harmonious enterprise, but also a reflection of Shanghai Electric's solicitude for the health, work and life of its employees.

Enrich business life

In order to increase cohesion among employees, Shanghai Electric carries out various recreational and sports activities on a consistent basis, so that employees can enhance communication with colleagues while exercising their bodies and displaying their colorful talents.



1. Outdoor training for kayaking
2. Dianshan Lake Employee Cycling Event
3. "Hong Kong and Taiwan cup" Friendly Football Match
4. "Shanghai Electric Cup" Badminton Match



Held the first Shanghai Electrical Culture and Art Festival

In 2019, Shanghai Electric held the first Shanghai Electric Culture and Art Festival around the theme "render meritorious services in a new era, and build the Shanghai Electric dream together" in celebration of the 70th anniversary of the founding of The People's Republic of China. Through the holding of a chorus competition among staff and workers, a table tennis competition, a variety show celebrating the 70th anniversary of the founding of The People's Republic of China, etc., we passed on the glorious tradition of the working class, inspired staff and workers to love the Party, the country and the enterprise, and showed staff and workers' mental attitude, which was marked by a determination to shoulder responsibility, assume the mission, and create new miracles in a new era. In the first Shanghai Electrical Culture and Art Festival, more than 1200 employees from 26 units participated in the chorus competition, and 76,000 people watched the competition live online.



In addition to holding various forms of social activities, Shanghai Electric organized and encouraged employees to go out of their enterprises and participate in activities in their subdistricts and communities.



1. Participated in Lin-Gang Special Area Games



2



3

- 2. Liu Haisu's daughter invited to talk about art
- 3. Participated in community-organized darts competition

Care for employees

Shanghai Electric is well aware that people are the first resource of an enterprise and the core of its development. Continuously doing a good job in caring for employees, keeping their pain and suffering in mind, increasing employees' sense of belonging and team cohesion, doing practical things, solving problems, and doing good things for employees, making employee management more warm, caring for employees even more, making employees feel a sense of belonging and happiness, and making the whole enterprise responsible and more warm has become an important aspect of Shanghai Electric's continuous innovation and exploration in recent years.

Care for the old and the weak and help employees in need

Nowadays, "old and lonely former employees" have become a new social problem. Shanghai Electric, together with government departments and social organizations, explored new ways and models to serve "old and lonely former employees". During the reporting period, Shanghai Electric set up a ledger, a basic information archive and a continuous visit information check mechanism aimed at serving "old and lonely former employees", and established more than 10 regional workstations based on their places of residence to provide services such as daily life care and hospital visits nearby.

In addition, Shanghai Electric also sent cordial greetings and care to employees who were seriously ill or employees whose families were in distress. During the reporting period, Shanghai Mechanical and Electrical trade union allocated over RMB 7.27 million to help 8,552 person-times of employees in need and migrant workers by visiting them during festival and assisting them with costs associated with education and treatment for serious illnesses. Meanwhile, we held a "June 1" event to convey greetings to 154 children of staff members and workers who came from households living on minimum subsistence allowances and worked at overseas project sites. A total of 65 units participated in the one-day donation event in 2019, with the amount of donations reaching RMB 5.395 million.





Care for front-line staff and overseas staff

During the great heat days of every summer, laborers working in high temperatures will pull at the heartstrings of people at the Shanghai Electric "home". From June to August every year, Shanghai Electric Group's leadership and senior management will fan out in all directions on a "coolness-delivering" trip to factory floors, project sites and far-flung factories, bringing a "green shade" to sweat-drenched workers. Meanwhile, Shanghai Electric also brings greetings and care to employees who cannot return home during holidays because of work.

With the acceleration of Shanghai Electric's pace of "going out" and the continuous advancement of overseas projects, the size of its overseas workforce has been growing. In order to further improve the care and service work for staff and workers at overseas project sites, during the reporting period, we built a "home for staff and workers" at the sites of seven overseas projects, which not only provided a place for overseas employees to learn, communicate, and entertain, but also attracted the employees of the construction unit and even foreign workers, becoming an "international community" within the construction site.

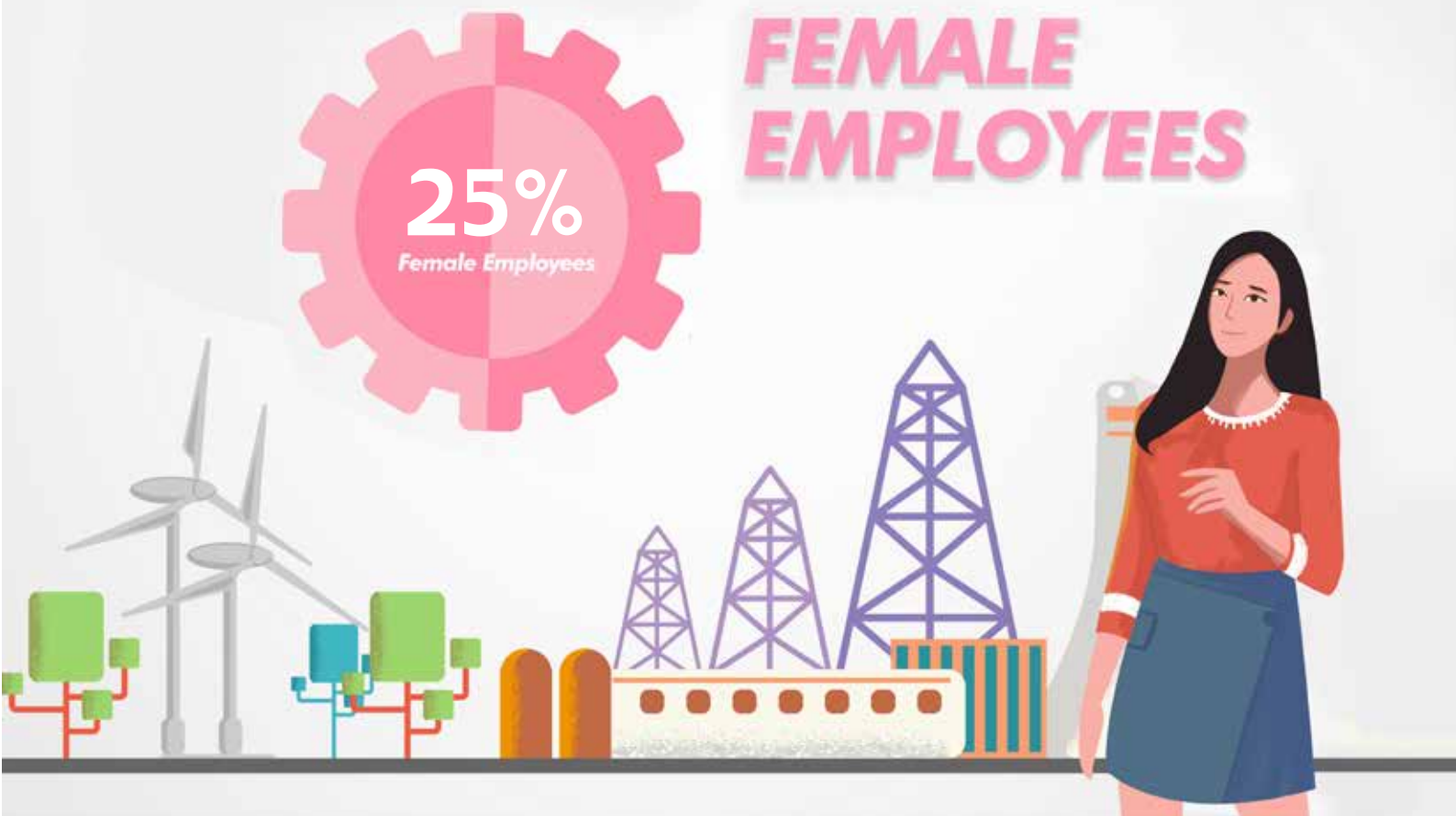
Respond to employees' needs and share their concerns

In order to make parents in the workforce feel at ease, unworried and rest assured, Shanghai Electric Group has set up the "Love Summer Nursery School" at Shanghai Dianji University and Caobao Road Park, which offers four classes for 145 children of Shanghai Electric employees. When it comes to the design of the curriculum system of the "Love Summer Nursery School", Shanghai Electric pays attention to the overall development of children encompassing "morality, intelligence, physique, aesthetics and labor skills"; and arranges retired female workers to help care for the children.

In order to increase employees' sense of belonging to the enterprise and effectively solve their housing problems, the Group offers customized, differentiated housing solutions based on the needs of young talents of different ages and at different levels. For example, we provide talent apartments for unmarried young employees, provide public rental housing for married young employees, and provide housing loans and subsidies for young employees who need to buy houses to truly address the housing and accommodation needs of young employees.

In addition, regarding the settlement issue, Shanghai Electric keeps close contact with the Human Resources and Social Security Bureau, the Talent Center, the Education Commission and the Student Affairs Center of Shanghai Municipality, and actively communicates with them about difficulties and pain points concerning the settlement of talents within the Group, so as to ensure the smooth settlement of employees of Shanghai Electric Group.





Care for female employees and build the Shanghai Electric big family together

The health of female employees relates not only to the happiness of small families, but also to the development of the Shanghai Electric big family. During the reporting period, Shanghai Electric built 13 new "caring mommy huts", bringing the total to 41. In order to give full play to the role of "caring mommy huts", Shanghai Electric continuously improves the functions of the huts in terms of hardware and software to provide a private, hygienic, safe, cozy and comfortable rest place for female employees who are pregnant or breastfeeding.

Meanwhile, Shanghai Electric cares about the physical and mental health of female employees. As part of our effort to provide all-round care for female employees, for many years, we have organized screening for gynaecological conditions and carried out special health activities for female employees on a regular basis.

05

PROTECT THE EARTH THROUGH LOW-CARBON MEASURES

Pursuing green is the agreement, source of innovation, commitment and practice of all Shanghai Electric staff. With a positive attitude of green manufacturing and promoting green environmental protection, Shanghai Electric continues to promote the establishment of an environmental management system, implement environmental protection into every link of production and manufacturing, and integrate green into the daily office life of every employee.

Environmental Management

We are driven by the system to promote environmental management

Shanghai Electric attaches great importance to environmental protection management and strictly abides by the environmental protection laws, regulations and standards of the industry where it operates, such as the Environmental Protection Law of the People's Republic of China and the Clean Production Promotion Law of the People's Republic of China. 80% of our subordinate production and operation departments have established the environmental management system and obtained ISO14001 certification, and carried out annual review according to the requirements. Based on this system, we have formulated environmental management policies such as Safety Production and Environmental Protection Management System of Shanghai Electric and the Implementation Rules of Safe Production and Environmental Protection. During the reporting period, we revised and improved 12 safety environmental policies including the Implementation Rules of the Party and Government Responsibility for Safety Production and Environmental Protection of Shanghai Electric, the Responsibility System of Safety Production and Environmental Protection of Shanghai Electric, and Investigation and Treatment of Hidden Hazards in Production Safety Accidents and Environmental Pollution so as to comprehensively enhance the management level of the safety production and environmental protection management system.



Shanghai Electric's "SEC-LOVE" System

Shanghai Electric's "SEC-LOVE" system improves all-round goals and responsibilities, pays equal attention to both process-oriented and result-oriented goals, promotes the implementation of responsibility lists of vertical and horizontal departments, and implements the overall standardization of safety production, occupational health and environmental protection management. Guided by the "SEC-LOVE" sharing core values, control collectivization, comprehensive standardization, safety leadership improvement, vertical supervision and predictable cascade vision, we will achieve a good integration of management needs between different levels and the integration of the group's overall management and control, and improve the pertinence, adaptability and operability of the system operation. In 2018, we compiled the Manual of Occupational Health and Safety and Environmental Protection Management for the Group, business divisions and production and operation departments, and completed the comprehensive construction of Shanghai Electric's safety production and environmental protection management system.

2019 is the year of Shanghai Electric "Safety Culture and Safety Production, Environmental Protection Management System Improvement". We introduced the China Academy of Safety Science to strengthen system services and technical guidance to business divisions and production departments, and carried out EHS system implementation consultation and guidance to 9 key business divisions. Each business division attaches great importance to EHS construction, and organizes teams to carry out system docking seriously, and has carried out comprehensive standardization and normalized optimization in terms of management structure, function allocation, system mechanisms, system processes, execution power, and collaborative management. From November to December 2019, the group headquarters implemented the EHS initial construction verification for 9 business divisions, each business division basically realized the establishment of EHS manuals, functions and systems, and the related direct and key departments of the group also implemented system docking simultaneously, laying the cornerstone for the full implementation of the EHS system in 2020.

We have set up the Safety and Environmental Protection Department, which is responsible for the construction and implementation of the environmental protection management system, safety and environmental risk control, safety and environmental technology management and safety and environmental culture construction and training. It is mainly responsible for the management and supervision of environmental protection management to ensure that the safety production, occupational health and environmental protection risks could be timely and effectively prevented and the objectives of major accident risk control could be achieved.

The Green Development Process of Shanghai Electric in Yangtze River Delta

The integration of the Yangtze River Delta is not only the demand for economic development, but also the requirement for cities along the Yangtze River to coordinate the construction of a green ecological environment. Green should be the background color for the development of the Yangtze River Delta region. In the integrated development, Shanghai Electric is injecting green energy for the joint construction and sharing of the beautiful Yangtze River Delta.

Waste Incineration-Nantong, Jiangsu

Nantong, located at the T-junction of the coastal economic belt and the riverside economic belt, is developing into an emerging economic center in the northern wing of the Yangtze River Delta. Nantong has set out to coordinate the three major spaces of production, life and ecology, and is committed to establishing a low-carbon recycling green industrial system. Precisely aiming at this point, Shanghai Electric has had a long history of layout in Nantong. In 2006, Shanghai Electric invested RMB 439 million to build a waste incineration cogeneration project in Nantong. The planned power generation capacity of Nantong Waste Power Plant has largely met Nantong's rapidly growing demand for electricity in the future. The power plant has also been rated as AA-Class Domestic Waste Incineration Plant of the Ministry of Housing and Construction, Nantong Advanced Unit for Energy Conservation and Emission Reduction, Rugao Green Enterprise, Rugao Top 50 Industrial Economy Enterprise and Rugao Advanced Collective for Environmental Protection for many consecutive years.



Wind Power Generation-Dongtai, Jiangsu

Dongtai, Jiangsu is located at the north of the Yangtze River in the Yangtze River Delta. The value of its industrial, environmental and ecological advantages is continuously increasing, and its superimposed advantages in the integrated development of the Yangtze River Delta are increasingly prominent. Shanghai Electric Dongtai Company has become the "Dongtai Sample" emerging in a new round of high-quality development. Rudong County, Dongtai City, which has a coastline of 102.59 kilometers and has benefited from nearly 1.04 million mu of tidal flats, provides a unique geographical advantage for wind energy development.

Dongtai Company, settled in Dongtai, Jiangsu, in March 2010, is a green new energy enterprise invested and built by Shanghai Electric Wind Power Group, dedicated to the assembly of wind turbines. Since the establishment of Dongtai Company nine years ago, Dongtai Company has comprehensively improved its industry and supporting capacity, and has now formed the production



Photovoltaic and Biomass-Huaibei, Anhui

Shanghai Electric currently has a total investment of RMB 2.2 billion in Huaibei City to build biomass power generation, photovoltaic power generation, distributed energy, Huai River-to-North Water Diversion Project and so on. Mengcheng County in Bozhou City, Wuhe County in Bengbu City, and Yongfeng Town in Tianchang City have all built biomass power generation projects. The photovoltaic power generation project of Huazhong Tianli Aluminum Co., Ltd. in Anhui is the first photovoltaic power generation project completed by Shanghai Electric Environmental Protection Group. It has been put into use and has yielded returns at the beginning of the year.

Biomass power generation has a unique advantage in Huaibei. The Huaibei area has vast farmland. Local farmers dry rape stalks on the roadside. The slogan on the wall around the road mostly asks farmers not to burn straw and pollute the green mountains. Building biomass power plants is the best destination for these wastes. Huaibei, Anhui's biomass thermal power plant has an average annual power generation of 216 million kWh, an output value of about RMB 143 million, and an annual use of agricultural and forestry waste of about 300,000 tons, all of which were commissioned in full set after 72+24 hours test run last year.

capacity of 2MW, 2.5MW, 3MW, 3.6MW and 4MW full range of wind turbines. At the same time, Dongtai Company seized the development opportunity of the national new energy industry, worked hard to build a highland of the intelligent manufacturing industry, accelerated the development of onshore and offshore wind power, and gradually increased the enterprise scale and benefits.

In the next three years, the total installed capacity of Rudong Base is expected to reach more than 800 units. Meanwhile, Shanghai Electric has set up Rudong Training Center in Rudong. The center integrates safety knowledge, theoretical technology, practical operation training and network teaching, and has the training certification of GWO International Wind Energy Organization, and provides internationally recognized training in accordance with the training standards of international industry operation and maintenance personnel.





Environmental risk control

We believe that it is an important means of environmental management to do risk prevention in advance and to contain the hazards at the source. In order to strengthen the management and supervision of the Group's environmental factor identification and risk assessment and control, and to prevent environmental pollution incidents, we have compiled the Environmental Factor Identification and Assessment Control and hired external professional institutions to conduct environmental inspections, risk identification, and evaluation every six months, with special emphasis on spot checks of subordinate enterprises with emission technologies issues, environmental accidents and major inspection items in the responsibility book. In order to meet the needs of the industrial development of the Group and develop its advantages of general contracting in the field of engineering projects, starting from the safety and environmental protection operation standards of engineering projects in 2019, we established the safety and environmental protection standards and requirements for the whole process from project input to output, and compiled Shanghai Electric Construction Engineering Project Safety and Environmental Risk Control Standard, Shanghai Electric Construction Engineering Project Emergency Rescue Plan and Collection of Relevant Laws and Regulations on Construction Projects.

In 2019, Shanghai Electric compiled and released the List of Important Environmental Factors and Risks of Shanghai Electric Manufacturing Enterprises, which required all business divisions and production and operation departments to formulate hierarchical management and control measures according to the risk level, identify environmental factors and establish risk measures for new processes, new technologies, new equipment and new materials in a timely manner to ensure orderly and controllable environmental protection. In response to major risks, we required business divisions and production and operation departments to strengthen environmental risk management and control measures, formulate governance plans, continue to effectively promote the management of corporate environmental hazards, and establish and improve long-term mechanisms for corporate environmental governance. During the reporting period, we formulated a total of 55 major environmental risk governance plans and completed all rectification and governance plans, with an investment of RMB 12.7 million.

At the same time, Shanghai Electric implemented key risk management supervision and on-site inspection guidance during the reporting period.



Shanghai Zhenhua Bearing General Factory Co., Ltd.

Conducted management supervision on Shanghai Zhenhua Bearing General Factory Co., Ltd. Which was punished by the environmental protection department during the year, and guided enterprises to investigate environmental risks from the source of the process and eliminate relevant heavy and auxiliary materials. As of December 31, 2019, rectification has been completed.



Shanghai Prime Machinery Co., Ltd.

Carried out environmental governance research and put forward suggestions for the next stage of work in response to the common problems of the entire industrial group.



Suzhou Thvow Technology Co., Ltd.

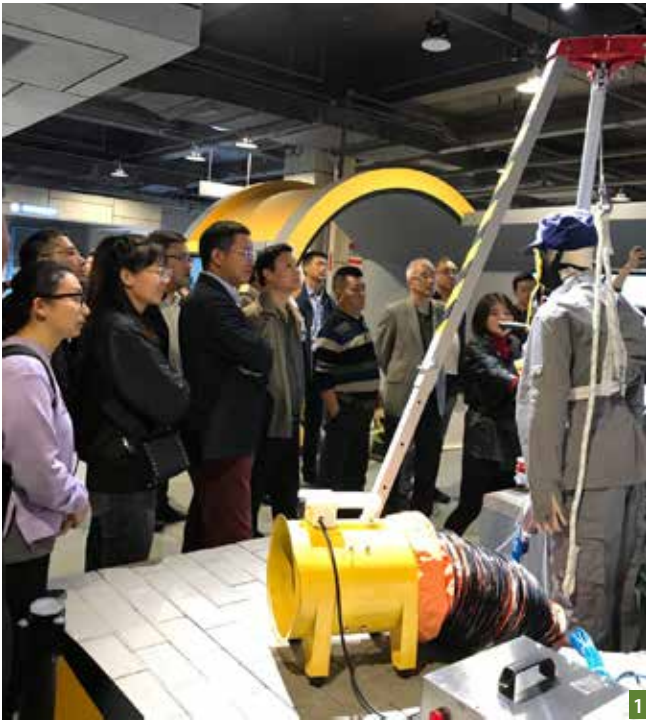
Implemented comprehensive and whole-process key management guidance and on-site services, and formulated a one-year follow-up guidance plan for the risk characteristics and management practices of its subsidiaries

Environmental Management Goal Setting

We have formulated systems such as Management of Policy Objectives and Indicators for Safe Production Environmental Protection and Safety Production and Environmental Protection Performance Evaluation and Assessment Measures of Shanghai Electric. We have compiled annual safety and environmental protection responsibility documents, formulated annual environmental protection objectives, organized safety and environmental performance assessment, and ensured the continuous improvement of the environmental management system. During the reporting period, we set four environmental protection indicators in the environmental safety responsibility book:



As of December 31, 2019, various business divisions, functional companies, key departments and directly affiliated departments have completed the environmental protection indicators and goals for 2019, and environmental pollution incidents are all controlled within the indicators. During the reporting period, we accepted two environmental penalties, with a penalty amount of RMB 270,000, decreased about 67.5% from 2018.



Publicity of environmental protection awareness

Shanghai Electric is committed to improving the overall environmental protection level and awareness of employees through various publicity and training activities to ensure that each step of manufacturing meets our standardized environmental management requirements. In 2019, we conducted a total of 11 large-scale environmental training sessions, with a total of 2,127 participants.



1 Emergency management training

2 Practical Training for Safety and Environmental Supervisors

Yao Hong, a Female Envoy of Promoting Green Environmental Protection

Yao Hong has worked for the Shanghai Electric Environmental Protection Group for more than 5 years. Most of the time, she has been on the road of promoting "green". In 2013, smog entered the public's vision, and environmental protection, low carbon, and green became the new national pastime. In the same year, Yao Hong joined the Environmental Protection Group. She began to commit to environmental protection and practiced a green and low-carbon life. After six months of market development, the marketing team of the Environmental Protection Group successfully signed three BOO projects, namely, Haian Hazardous Waste Disposal, Sewage Treatment and Qidong Hazardous Waste Disposal. Facing the environmental protection market in the future, Yao Hong is more confident. In her view, the market is the gateway and the business card of the enterprise. People who work on the market must be reliable, otherwise the projects will be difficult to implement.

"At present, the Environmental Protection Group has undertaken or reached nearly ten overseas environmental protection projects, mainly distributed in Europe, Southeast Asia, North America and other regions. Overseas projects have just started and need more projects to hone and accumulate. Standing on the international stage We must be prepared to face more and stronger opponents." Yao Hong said.

In the future, the Environmental Protection Group will focus on four

major regions: Southeast Asia, the Middle East, Europe, and North America, in order to complete the layout of overseas environmental protection market, hoping to integrate overseas advanced technology through the development of overseas high-end environmental protection markets, accumulate industry benchmark performance and form its own core technology, and then "feedback" the follow-up overseas markets and domestic environmental protection markets.



Green Manufacturing

We practice green in production and operation, and live in harmony with the ecological environment.

Based on a sound environmental protection management system, Shanghai Electric insists on practicing environmental protection in every production link to minimize the environmental impact brought by production and manufacturing. We continue to improve the efficiency of energy consumption, reduce greenhouse gas emissions, promote the rationalization of water conservation, and strictly handle waste disposal in accordance with relevant requirement. We hope that our green manufacturing will contribute to the green development of China and all regions where we operate.

In response to the call of the national **"Green Manufacturing System Construction" as one of the main tasks of the "Made in China 2025"** strategy, the Shanghai Municipal Government clearly **plans to build 100 green factories, 20 green parks, 100 green products and 10 green supply chains by 2020**. During the reporting period, we learned about relevant evaluation standards through special training and guidance. The enterprise conducted self-assessment and entrusted a qualified third party to conduct pre-assessment; conducted improvement project analysis and optimized the program content; established green factories to create a working group and promoted related work; successfully won the title of national-level green manufacturing demonstration enterprise. Shanghai Electric actively undertakes the responsibilities of Shanghai's industry-leading enterprises and aims to create 3 green factories and 3 green products.

In 2019, a total of three enterprises of Shanghai Electric successfully created state-level green factories:

(1) Shanghai Electric Group Shanghai Electric Machinery Co., Ltd.

(2) Shanghai Mitsubishi Electric • Shangling Air Conditioner Electrical Appliance Co., Ltd.

(3) Shanghai Mitsubishi Elevator Co., Ltd.

Energy and Greenhouse Gas Management

Shanghai Electric strictly abides by the industrial energy conservation laws, regulations and standards of the places where it operates, such as Energy Conservation Law of the People's Republic of China and Measures for the Administration of Industrial Energy Conservation. It has set up the Economic Operation Department as the functional department of energy management to coordinate the energy management work of the Group. Other corresponding functional departments serve as the primary energy management network and guide and carry out energy management and monitoring work. Various business division and key enterprises establish enterprise energy management centers to supervise and manage the assessment of enterprise energy consumption and energy consumption indicators.

Based on the Group's energy management structure, we formulate annual energy saving targets and conduct energy audits in accordance with the requirements of the Shanghai Economic and Information Commission (hereinafter referred to as the "Shanghai Economic and Information Commission"), and actively implement the elimination of high-energy-consuming and obsolete electromechanical equipment and promote the procurement of high-efficiency and energy-saving products, implement key energy-saving projects and energy-saving technical transformation, organize and participate in energy-saving training and carry out various energy-saving publicity activities.



■ The target of energy saving

Shanghai Electric has established a set of energy statistics index system to meet the Group's multi-level needs, and has implemented vertical management and dynamic supervision. In 2019, we closely focused on energy conservation and emission reduction targets and tasks, conscientiously did a good job in industrial statistics, energy statistics and direct network reporting, and carried out a series of energy conservation and consumption reduction tasks according to the production characteristics of products of various business division, and formulate energy conservation and consumption reduction targets in line with current enterprise development. We continue to consolidate the foundation of energy statistics, improve the professional standards of energy statisticians, improve the quality of energy statistics, strengthen the capacity of energy statistics services, and guide enterprises to adopt greener and more environmentally friendly production methods.

According to the assessment requirements of the Shanghai Economic and Information Commission, Shanghai Electric carried out target assessment management for business division and key energy-using enterprises, and issued an assessment task book. The energy efficiency indicators cover total indicators, intensity indicators and product unit consumption.

Shanghai Electric "One Percent Action"

"One Percent Action" was the goal of energy conservation and consumption reduction measures put forward by the Shanghai Economic and Information Commission in 2017, that is, the total energy consumption of the Shanghai Group would be reduced by 1 percent through technological transformation of energy conservation projects. Shanghai Electric took energy saving and consumption reduction of Shanghai Electric Shangzhong Casting and Forging Co., Ltd., a key energy consumption enterprise, as the starting point. In 2018, it completed the technical transformation project of energy-saving regenerative transformation of industrial furnaces and kilns, saving RMB 9.65 million of natural gas every year, equivalent to more than 2,400 tons of standard coal, with good effect. The total annual energy saving has reached more than 3,000 tons of standard coal, realizing the basic expectation of "One percent Action". From 2018 to the first half of 2019, Shanghai Electric started the second phase of transformation project, which achieved good results.

Through the analysis of the energy consumption history and actual production of various business divisions and departments, and according to their annual production target orientation and actual work process, we predict, decompose and balance energy consumption to issue indicators. On the basis of ensuring the completion of the overall target, it is determined that the energy conservation and consumption reduction assessment targets of the subordinate business division will be achieved. Each industrial group further decomposes the group indicators into enterprises according to their specific conditions, and combines the energy conservation target assessment with the annual responsibility assessment of the main operators of enterprises.

We carry out key monitoring on 8 enterprises within the group that consume more than 5,000 tons of standard coal, conduct monthly trend analysis on the energy consumption of these key enterprises, supervise the actual operation, strictly control the operation status to avoid large deviations, timely communicate the possible large deviation trends, understand the situation, urge relevant enterprises to take effective measures in time and actively carry out benchmarking activities within the industry.

The energy consumption of Shanghai Electric in 2019 is shown in the following table:

Energy Consumption

Type	2019	Unit
Purchased electricity	31,661	'0000 kwh
Natural gas	5,421	'0000 m3
Diesel	595	tons
Gasoline	1,990,676	liters
Direct energy consumption ¹	75,094	tons of standard coal
Indirect energy consumption ²	38,911	tons of standard coal
Comprehensive energy consumption	114,005	tons of standard coal
Comprehensive energy intensity	0.0089	tons of standard coal/RMB'0000

Through refined energy management, we reduced our own carbon emissions and dealt with the impact of climate change. Shanghai Electric's greenhouse gas emissions from 2017 to 2019 are shown in the following table:

Total greenhouse gas emissions

Type	2019	Unit
Scope 1 Greenhouse gas emissions	123,481	tons of carbon dioxide
Scope 2 Greenhouse gas emissions	222,735	tons of carbon dioxide
Total greenhouse gas emissions	346,215	tons of carbon dioxide

Greenhouse gas emission density

Type	2017	2018	2019	Unit
Greenhouse gas emission intensity	336.99	242.7	271.54	tons of carbon dioxide/ RMB'00000000

1. Direct energy consumption includes natural gas and diesel consumption.

2. Indirect energy consumption refers to the consumption of purchased electricity and purchased steam.

Energy Saving

Energy Conservation and Emission Reduction (JJ) Group Activities of Shanghai Mitsubishi Elevator Co., Ltd.

The Shanghai Energy Conservation and Emission Reduction (JJ) Group Activities, which began in 2009, has done a lot of fruitful work in the past ten years to implement a series of arrangements on energy conservation and emission reduction deployed by the CPC Central Committee, the State Council and the CPC Shanghai Municipal Committee and the municipal government. At present, it has been widely carried out in more than 40 fields such as Shanghai chemical industry, non-ferrous metals, automobiles, transportation and integrated circuits. The JJ group has increased from 29 enterprises and 111 teams in 2009 to 850 enterprises, 2,700 teams and 27,000 people participating in 2018.

Shanghai Mitsubishi Elevator Co., Ltd. has been actively participating in JJ group activities for ten years. A total of more than 500 people participated in the JJ group training, completing 104 energy-saving and emission-reduction topics. In 2019, the company reported 11 projects to the Municipal Energy Saving and Emission Reduction (JJ) Group Guidance Office. In 2019, the company's "LEGY-II Optimization of Power Supply and Control System to Reduce Power and Material Losses" Project and "Lingyun-3S Door Reinforcement Glue Process Improvement" were selected as "Shanghai Energy Saving and Emission Reduction JJ Group Activity Case Collection (Volume 10)". The concept of "lucid waters and lush mountains are invaluable assets" was successfully implemented in Shanghai Mitsubishi.



Natural Gas Atmospheric Pressure Low Nitrogen Condensation Hot Water Boiler Renovation Project in Steam Turbine Plant of Shanghai Electric Power Plant Equipment Co., Ltd.

In order to optimize the original combustion device of the natural gas boiler in the boiler room, Steam Turbine Plant of Shanghai Electric Power Plant Equipment Co., Ltd. launched the natural gas atmospheric pressure low nitrogen condensation hot water boiler renovation project in 2019. At present, 2 new atmospheric pressure low nitrogen condensation hot water boilers have been put into operation, and the emission index has been tested by a third party to reach the standard. Nitrogen oxides decreased from 130mg/m³ before transformation to 38mg/m³ after transformation, and natural gas could be saved by 400,000 m³ per year.



Renovated Boiler

The publicity of energy saving

Shanghai Electric has formulated the Group's energy-saving publicity work plan in detail, organized, implemented and guided its subordinate business divisions and key energy-consuming enterprises to carry out corresponding energy-saving week publicity activities, so as to plan ahead of time, implement the deployment work, and carry out various forms of energy-saving publicity work: through various forms such as internal information network, restaurant electronic screen, team learning, corporate factory office communication, posters, and production of on-site billboards, etc., all employees' energy-saving awareness and environmental awareness are raised, so that energy-saving becomes a part of the employee's lifestyle, and every employee is called on consciously participate in energy saving and consumption reduction.

2019 National Energy Saving Publicity Week Site Activities of Steam Turbine Plant of Shanghai Electric Power Plant Equipment Co., Ltd.



In addition, during the reporting period, we carried out a series of energy management and energy saving training activities. We hope that employees will face new requirements and new tests on how to effectively save energy in the face of a strong development situation, which can effectively enhance the sense of urgency and mission of energy efficiency management and strive to improve the initiative and effectiveness of energy efficiency management. The content of energy-saving training activities combines theoretical policies and practical examples, hoping to help employees better understand the national energy-saving policies, learn from energy efficiency management methods, and improve the awareness and level of energy efficiency management. During the reporting period, we organized or participated in energy-saving training 15 times, with 1,020 participants.

Shanghai Mitsubishi Elevator Co., Ltd. organizes themed educational activities with energy saving and emission reduction as the content

Shanghai Mitsubishi Elevator Co., Ltd. vigorously promotes energy saving and emission reduction, organizes themed educational activities with energy saving and emission reduction as the content, regularly publishes a bulletin board with the theme of "energy saving and emission reduction", and unifies the project department's understanding of energy saving and emission reduction, and runs the implementation of "resource conservation and environmental protection" throughout the construction process. At the same time, employees are called on to participate in social practice activities of energy saving and environmental protection, deepen environmental protection awareness, master environmental protection skills, and develop environmental protection habits. Widely solicit the opinions of employees and put forward more suggestions for rationalization of energy saving and emission reduction. During the reporting period, Shanghai Mitsubishi Elevator Co., Ltd. won the Outstanding Organizer Award of the 2019 Shenneng Cup Green Knowledge Contest issued by the Shanghai Energy Conservation Association.





Water resources management

Shanghai Electric takes "low energy consumption and high efficiency, clean and low carbon, scientific management, continuous improvement" as the goal of water saving management, and pursues continuous improvement of water saving work. The Shanghai Electric Economic Operation Department is responsible for the management of the Group's water conservation and overall arrangement and deployment of the Group's water conservation. The Group's major industrial sectors and key enterprises have dedicated personnel responsible for their water conservation management. We attach importance to water-saving management, continuously strengthen water consumption statistics, analysis and assessment, and promote the application of new water-saving technologies and new processes. The major enterprises of the group all set up corresponding water-saving statistical report systems. At the same time, we actively participated in the training organized by Shanghai, and organized water-saving publicity activities on specific dates such as "Water Publicity Week" to promote water-saving common sense through multiple channels.

During the reporting period, we promoted water-saving management and technical measures, paid attention to the technological transformation projects of key enterprises, and ensured the orderly development of water-saving work.

Shanghai Electric's water-saving technology renovation project



Shanghai Mitsubishi Elevator Co., Ltd

- Reuse of water and cleaning water in the powder spraying line of the sheet metal workshop
- Reuse of reclaimed water and river water for greening irrigation in wastewater treatment station
- The canteen outlet pump was equipped with frequency conversion control and reclaimed water reuse facilities
- The cold and hot shock box, sheet metal workshop and heat treatment workshop equipment in the electric control workshop were rebuilt to realize the reuse of cooling water



Shanghai Electric Nuclear Power Group

- The water saving of the vacuum degassing water circulating pump house and the special steel circulating pump house was about 85% of the total annual water saving through the recycling process
- Monitored the water intake meter online, mastered the instantaneous flow and implemented dynamic control



Shanghai Electric Power Station Group

- Carefully checked the existing water infrastructure and facilities of the whole company, and formulated the pipeline renovation project in 2020
- According to the assessment standards of standard energy-saving enterprises, the matching conditions of meters at each water consumption point were adjusted accordingly
- Promoted the use of pump water circulation water, and new environmental protection equipment adopted water recycling equipment, saving about 6,000 tons of water annually

The water consumption of Shanghai Electric from 2017-2019 is shown in the following table:

Water consumption

Type	2019	Unit
Water use	7,735,782	tons

Water consumption density

Type	2017	2018	2019	Unit
Water consumption per unit of production value	0.7531	0.6199	0.6067	tons/RMB'0000

Reduce pollutant emissions

Shanghai Electric strictly abides by the laws, regulations and standards governing the discharge of industrial pollutants in the places where it operates, such as the Law of the People's Republic of China on the Prevention and Control of Atmospheric Pollution, 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 Environmental Pollution of Solid Wastes, and the Regulations on the Safety Administration of Radioactive Wastes, and formulates management systems such as Clean Production and Clean Production Audit Implementation Rules and Solid Waste Management Implementation Rules. We attach great importance to the treatment and discharge of the three wastes. The standardized treatment of the three wastes and the steady discharge of the standards are the basic requirements for each production member enterprise.

Exhaust emissions



- Exhaust gas is discharged at high altitude after being collected and treated
- Through technological transformation, some enterprises and workshops are transformed into organized emissions

Waste water disposal



- Three waters (industrial wastewater, rainwater, domestic wastewater) in one, two waters (industrial wastewater, domestic wastewater) in one for unified management
- Water pollution treatment project of sewage interceptor
- Wastewater is discharged after being treated to meet discharge standards
- Online monitoring of wastewater discharge

Waste discharge



- Entrust qualified environmental protection companies to handle hazardous wastes. Reusable general industrial wastes shall be reused by enterprises, and the rest shall be entrusted to third-party institutions for disposal.
- Actively promote the replacement of hazardous waste products, such as the use of special cleaning liquid instead of gasoline, acetone and other cleaning machine surface, to minimize the generation of hazardous waste



Shanghai Electric Wuhe biomass thermal power project

During the reporting period, we also hired third-party professional organizations to conduct special inspections on the hazardous waste management of the 19 subsidiaries, providing professional guidance for companies in hazardous waste management. Subsidiary companies that are at risk in hazardous waste management are required to formulate rectification plans and strengthen management measures in accordance with the Control Standards for Hazardous Waste Storage Pollution, and all rectifications have been completed as of December 31, 2019.

In 2019, Shanghai Electric aimed to eliminate major environmental pollution incidents as the bottom line control goal, and promoted the management of pollutant discharge by its affiliated polluting enterprises. For Minhang regional enterprises that accounted for a large amount of pollution emissions, the Group signed the 2019 Environmental Protection Target Responsibility Agreement with the Minhang District People's Government, urging the enterprises in the region to cooperate with government departments to implement cleaner production and treat volatile organic compounds to ensure the stable discharge of pollutants.

VOCs environmental governance project

Promote the effective implementation of enterprise VOCs environmental control projects. In 2019, subsidiaries such as Shanghai Electric Power Plant Equipment Co., Ltd. Steam Turbine Factory, Shanghai Electric Power Plant Equipment Co., Ltd. Generator Factory, Shanghai Electric Group Motor Factory Co., Ltd, Shanghai Electric Remaking and Forging Co., Ltd. and Shanghai Mitsubishi Elevator Co., Ltd. have implemented VOCs control projects according to the time schedule, with an investment of about RMB 13 million and an estimated VOCs emission reduction of 75 t/a

Cleaner production audit

Organize the 2019 corporate clean production review and declaration work, encourage enterprises to independently improve environmental pollution control levels, and improve resource utilization

Emergency management and control of severely polluted weather

Urge all departments to continue to do a good job in ensuring air quality in autumn and winter, take the initiative to prevent and control, and implement responsibilities. Reasonably arrange production plan, conscientiously do temporary management and control, effectively deal with heavily polluted weather, and minimize pollution emissions

Summarize the work experience of last year's CIIE and urge enterprises to deploy and implement it as early as possible so as to ensure the environmental emergency protection of the CIIE. A total of 50 enterprises adopted air pollution control measures during the 2019 CIIE, and it was expected to reduce emissions by NO₂ 2,258.16kg、SO₂ 328.91kg、PM427.05kg、VOCs 4,019.87kg.





Shanghai Mitsubishi Elevator Co., Ltd. sheet metal shop VOCs treatment technology upgrade and transformation project

The VOCs of the original painting line of Shanghai Mitsubishi Elevator Co., Ltd. are generated during the drying and solidifying process. The exhaust emission outlet of the curing house is equipped with activated carbon device to absorb VOCs exhaust gas. However, the characteristics of treatment of VOCs exhaust gas using activated carbon are low temperature adsorption and high temperature desorption. Under high temperature conditions, activated carbon basically has no adsorption effect on VOCs exhaust gas. In 2019, we replaced the whole set of exhaust gas treatment system. The solidified exhaust gas was first treated by a primary effect filter to filter a small amount of particles, then treated by a cooling system, and finally treated by putting into an activated carbon adsorption device. After upgrading, VOCs emission can be reduced by 0.27t/a.

VOCs Emissions Reduction Project of Shanghai Electric Power Station Equipment Co., Ltd. Shanghai Generator Plant

Shanghai Electric Power Station Equipment Co., Ltd. Shanghai Generator Plant involves the spray booth and the discharge port of the dipping process. Before the transformation, activated carbon adsorption treatment was used to discharge at high altitude. In order to further strengthen the company's environmental protection and governance work, the company launched the VOCs emission reduction and governance project: the combined process of "pretreatment + activated carbon adsorption concentration + hot air desorption regeneration + catalytic combustion" and the treatment scheme of "zeolite runner adsorption+hot air desorption+catalytic combustion" were used for the outlet and dipping process of the spray booth, which meet the requirements of waste gas treatment and process. Through all-round measures such as source material replacement, spraying process improvement, terminal treatment equipment transformation and daily operation control, VOCs emissions have been reduced from 91.71 tons / year to 14.96 tons / year, with a reduction rate of 83.7%, greatly reducing factory pollution emissions and improving the working environment of employees.



Treatment facilities of spray booth before renovation



Treatment facilities of spray booth after renovation

Shanghai High Strength Bolt Factory Co., Ltd. achieved zero discharge of process wastewater

In order to further strengthen the enterprise's clean production level and prevent the discharge of A class of heavy metal pollutants, Shanghai High Strength Bolt Factory Co., Ltd. maintains the current status of the former wastewater treatment process, and after treatment, 30cubic meters per day of wastewater were sent to the high concentration system for further treatment and then reused for phosphating cleaning, and the rest was directly reused. At present, the company has realized zero discharge of process wastewater.



1. CFRO membrane concentration system
 2. MVR wastewater forced circulation evaporator

Pollutant emissions

Type	2019	unit
Wastewater discharge	3,179,082	m3
Chemical oxygen demand	132.14	tons
Ammonia nitrogen	11.68	tons
Exhaust emissions	420,724	'0000 m3
Nitrogen oxides	51.73	tons
Sulfur oxides	1.95	tons
Particulate matter	19.13	tons
VOC emissions	179.62	tons

Waste

Type	2019	Unit
Hazardous waste	3,574	tons
Non-hazardous waste	54,496	tons

Hazardous waste intensity

Type	2017	2018	2019	Unit
Hazardous waste intensity	4.51	3.4	2.8	tons/RMB'00000000

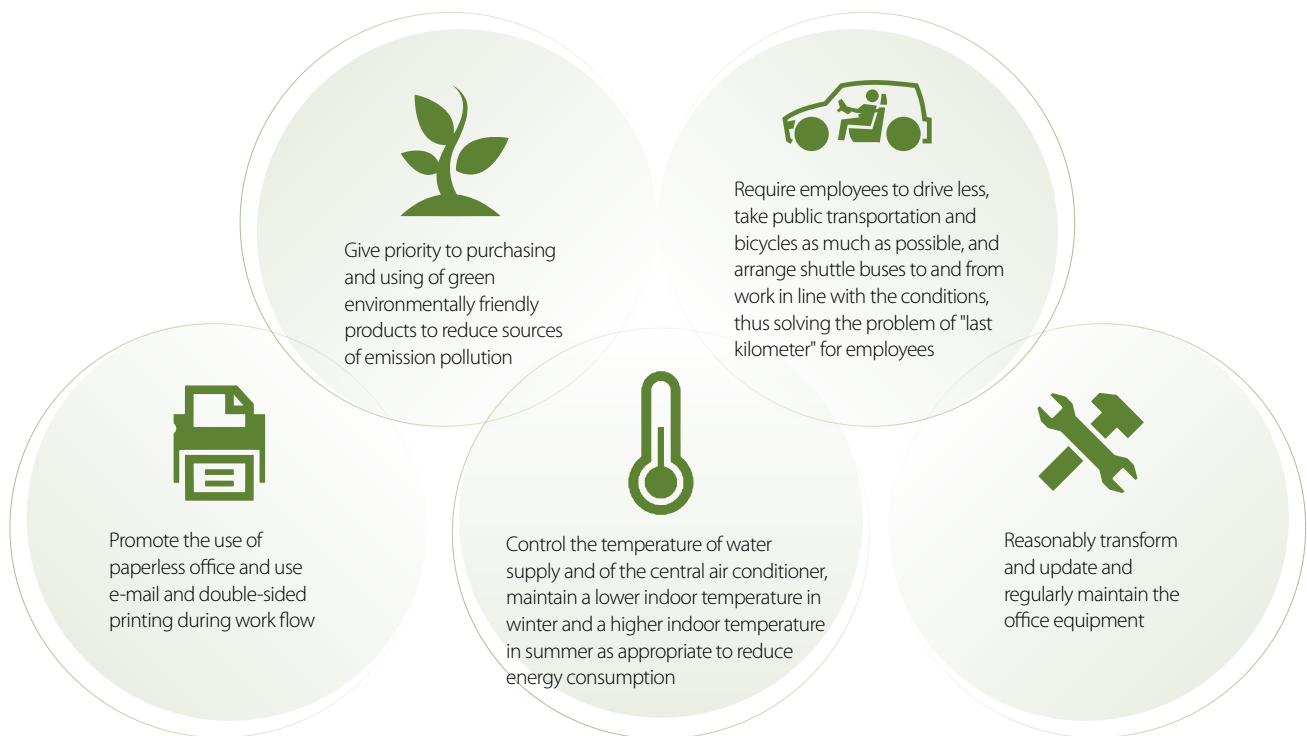
Non-hazardous waste intensity

Type	2019	Unit
Non-hazardous waste intensity	42.74	tons/RMB'00000000

Green Office

We build a green office environment and an environment-friendly enterprise

Shanghai Electric not only pays attention to environmental protection in the manufacturing process and is committed to the construction of green factories, but also advocates the office style of green office and low-carbon life, guides and drives all employees to form good habits of energy saving and consumption reduction, aiming to promote sustainable office style and reducing the impact of office space on the environment.



In 2019, we focused on improving the water-saving and energy-saving levels of the office, and further strengthened the promotion of green office.

1. The group headquarters increased rainwater recovery system equipment and used the rainwater recovery system for greening and irrigation, which can save 1,000 cubic meters of water annually.

2. The bathroom adopted induction appliances, which can save 196 cubic meters of water consumption every year.

3. The use of automatic induction lighting system in public areas can save 38,016 kWh of electricity consumption per year.

06

CREATE VALUE FOR SOCIETY WITH GOOD FAITH

Shanghai Electric regards caring for the society, serving the society, and dedication to society as the value and significance of the company's existence. It takes the commitment to social welfare as an unshirkable responsibility, and is committed to the harmonious and joint development of the local community and the entire society. We respond to the government's call, respond to social demands, solidify the work of party building, and lead the development of the industry. While developing, we never forget to give back to the society and serve the development of the society.

Benchmarking for Responsibility

We respond to social demands and practice the responsibilities of state-owned enterprises

As a state-owned enterprise, Shanghai Electric attaches great importance to social hot spots, responds to social demands in the first place, satisfies the public's right to know with a responsible attitude, accurately grasps the trend of public opinion, shares media resources from all walks of life, and plays a positive role in promoting the Group's brand. We actively carry out party-mass construction, safeguard the legitimate rights and interests of Party members. With the purpose of "paying taxes in accordance with law and paying taxes in good faith", we establish relevant tax payment systems and business processes, establish a sense of honor in paying taxes, and strive to fulfill the mission of state-owned enterprises.

Media attention

Relying on the Group's six media channels, Shanghai Electric continues to do quality improvement and expression innovation. Through the soft power of corporate culture, it continues to promote the market, production capacity, technological innovation and brand going out, and makes new contributions to the re-creation of the pillars of a great power

WeChat public platform implemented version 3.0 function iteration, created a personalized image "Xiao E", aggregated online and offline resources, and deepened interactive communication of "content+operation"



In 2019, Shanghai Electric News successively opened special columns such as "Restarting from the new starting point", "Carrying out the education on the theme of staying true to our original aspiration and keeping our mission firmly in mind", and "the most beautiful people in the field of electric", expanded the "Party Construction Edition", strengthened the three-dimensional publicity planning centralized reporting of major themes.

Shanghai Electric's brand value reached a new high in 2019

Type	2019
China 500 Most Valuable Brands List	With a brand value of RMB 81.276 billion reaching a new high, it once again led the Chinese machinery industry
Top 500 Asian Brands	The ranking rose to 88, a record high
The first China Brand Development Index released by People's Daily	Ranked 40th with a comprehensive index score of 784.34
Forbes Top 2000 Global Listed Companies List	Ranking soared 141 places, and ranked 802nd in the world

In 2019, Shanghai Electric continued to pay attention to social hotspots and responded to social demands. It has broadcast news 90 times in mainstream media, such as Jiefang Daily, Wenhui Daily, and Dragon TV, an increase of 37.5% over 2018.

We must strive to be the first echelon in the industry

On the morning of March 7, 2019, Zheng Jianhua, Secretary of the Party Committee and Chairman of the board of directors of Shanghai Electric Group, was interviewed by a reporter from the magazine State-owned Capital Operation to discuss the reform measures and overall goals of Shanghai Electric in accelerating the innovation of talent incentive mechanisms in the process of deepening the reform of state-owned assets and state-owned enterprises.

In response to the background and motivation of Shanghai Electric to increase the innovation of the system and mechanism, Zheng Jianhua said that the current key and bottleneck problems that restrict the realization of the Shanghai Electric Group's strategic development goals are the system and mechanism problems that SOEs have accumulated for a long time. With regard to institutional issues, and activating the enthusiasm, initiative, and creativity of talents, Shanghai Electric can unleash endless power and potential. When talking about the specific measures for reform, Zheng Jianhua introduced the group's exploration ideas and reform goals in the market-oriented selection and recruitment mechanism, the evaluation mechanism for leading cadres, and the long-term incentive and constraint allocation mechanism.



Party construction work

Since the 18th National Congress of the CPC in the face of the new normal of economic development and new requirements for strict governance of the Party, Shanghai Electric has adhered to the leadership of the Party, fully exerted the unique advantages of state-owned enterprises in Party construction, strengthened the Party's construction through continuous improvement of the system and mechanism, and effectively stimulated the enthusiasm and creativity of Party members and cadres at all levels and employees.

■ Party-masses construction

Carry out the spirit of the national Party building conference of state-owned enterprises, highlighting the distinctive effects

• The Group took Research on the Implementation Path of Corporate Party Committee's Leading Role as the No. 1 topic of the Party Committee in 2019. Led by the secretary of the Party Committee, starting from four aspects of integrating into corporate governance, implementing Party Building responsibilities, improving ability and quality, and strengthening grassroots branches, the Group studied and analyzed the organized, institutionalized, and specific contents of enterprise Party Committee's leading role, formed the research report results, clarified the system framework of the Group Party Committee's leading role, found out the current situation, identified the problems, and put forward targeted countermeasures for the implementation path, laying a solid foundation for the party Committee to play its leading role more effectively.

Comprehensively strengthen the construction of the party's organizational system

In order to further enhance the organizational power of Party organizations at all levels, improve the organizational system, and improve the Party Building system, in accordance with the relevant work requirements such as strengthening the Party's internal laws and regulations, the Party Committee of the group has strengthened the the revision and improvement of relevant systems through research and team discussions. At the level of the Party committee, it has revised and promoted the implementation of the Party building Party style responsibility implementation method and assessment method; at the party branch level, it has revised and improved the "1 + 3 + 1" party branch work system, strengthened the guidance and evaluation methods for party branch construction, etc. ; at the Party affairs level, it has updated the Party Committee's general elections, developed party members, and managed party fees, etc., providing system guarantee for the Party Committee of the group to implement the general requirements for party building in the new era.

Fully and strictly administering the Party to extend to the grassroots

• Convene the congress of the Party of the Group to gather development forces

According to the relevant provisions of the Articles of Association of the CPC and the Regulations on the Election Work of the Primary Organizations of CPC with the approval of the Party Committee of the Municipal SASAC, on April 23, the group convened a Party member congress. 234 regular party member representatives elected a new Group Party Committee and discipline inspection Commission team by secret ballot. The conference comprehensively reviewed the remarkable achievements made by the Group in reform and development and Party Building since the 18th National Congress of the Party, summed up the knowledge and experience of the Group 's Party Committee on promoting reform and development, and established the strategic goal of "building another Shanghai Electric" in the next five years, and further points out the direction of realizing the "electric dream" and "three steps".

• Taking theme education as the carrier to promote high-quality economic development

According to the relevant work requirements and deployment of the Central Committee and the Municipal Party Committee, from June to August, under the guidance of the Eighteenth Touring Guidance Group of the Municipal Party Committee, the Party Committee of the Group thoroughly implemented the general requirements of "keeping the original heart, fulfilling the mission, finding the gap, and grasping the implementation". It took "the mental state of leading cadres can be further stimulated, and the key problems of the Group's development can be truly solved" as an important standard, the theme education of "Staying true to the original aspiration and keeping the mission in mind firmly" was carried out solidly. During the period, "Five Questions" and other activities were carried out, and a total of 464 suggestions and questions were collected in 45 aspects. In response to the problems found by the leading group of the thematic democratic life meeting, a total of 13 rectification measures "in the near term, the medium term and the long term" were formed and implemented one by one according to the problems found by the leadership of the Special Democratic Life Association. The thematic education has achieved solid results and effectively promoted the solution of practical problems in the group's development.

• Conduct a comprehensive political examination by taking the opportunity of the inspection

From 26 September to 20 December, the Sixth Inspection Group of Municipal Party Committee continued to inspect the Group Party Committee , which improved the stance and implemented relevant requirements strictly. Through conscientiously carrying out coordination matters, the Group Party Committee found out the root of problems and strengthened the implementation of recitations for inspection. By creating an atmosphere of consciously accepting inspection, active participation of cadres and the masses, and conducive to finding and solving problems, the Group Party Committee effectively promoted reform and development through inspection.

Protection of Party Members' rights

Selecting outstanding party members to form a demonstration effect

In order to select and commend the advanced model in the process of achieving the first-step development goal of the "three steps", the party committee of the group launched a selection activity of "praising party members" in June. Adhering to the performance orientation, 100 excellent communist party members and 10 models of excellent Communist Party members were selected from the advanced models that emerged in various fields at the grassroots level. They were commended at the 98th anniversary of the founding of the Party and the "July 1" conference, and were publicized on the KOA website, calling on the majority of party members to actively align themselves with the advanced standards and models and actively participate in the new round of development of the group.

Helping the poor within the party reflects organizational care

In accordance with the relevant guiding spirit of the superior, in order to further care for the party members in difficulty and increase the cohesion within the party, the party committee of the group continued to implement the concentrated work of helping the poor within the party. Party organizations at all levels comprehensively surveyed the situation of difficult party members in their organizations, strictly implemented and cared in place in accordance with policies and standards, so that party members feel the care and warmth of the organization. After the arrangement and declaration of the grass-roots party organizations under the group, the group party committee reviewed and approved the one-off cash payment in July to subsidize the recipients. In 2019, a total of 92 party members were helped, and the amount of assistance was RMB 278,500.

Party construction activities

The brand matrix of party construction burst new momentum

The party committee of the Group adhered to the principle of hierarchical classification, paid attention to the top-level design and excavation of the party construction brands at all levels of the group, and carefully built a number of model party construction brands. In June, the six party construction brands selected by the group were selected into the 100 state-owned enterprise party construction brands of the municipal SASAC system. They are respectively the Group party committee's "Party Member Promise", the wind power party committee's "Windrunner" cultural construction, the shanghai turbine Party Committee's "integrated party construction", the shanghai boiler party committee's "learning-oriented party organization", the "three constructions" of the power plant engineering company's party committee, and the "double promotion activity" of the people's electric appliance factory party committee. The party organizations at all levels of the group cooperated up and down to form a "matrix effect", which further expanded the influence of the group's party building brand.



Great discussion promotes great liberation of mind

In order to comprehensively promote the in-depth development of the reform of state-owned assets and state-owned enterprises and continue to consolidate the good results of the "three-step" strategic goal, the Group's party committee carried out a series of activities of "Great discussion on emancipating the mind" in party organizations at all levels. We adhered to the problem-oriented approach, focused on the transformation of Party construction function in state-owned enterprises and the transformation of major contradictions in the Group's key stage, and the transformation of the ability requirements of party members and cadres in transformation and development, promoted further reform and innovation in practice, so as to provide spiritual impetus and ideological guarantee for the Group to achieve higher quality development.

Party construction theme activities stimulated vitality

The Group's party committee carried out the theme activity of "inspiring vitality to promote development and daring to take on the role of acting", organized party organizations at all levels to play an exemplary and leading role, inspired all party members to actively take on the role of acting based on their posts, promoted leading cadres to emancipate their minds and change their concepts, reached consensus on a wider and deeper level, and created a good atmosphere for all staff members to start their own businesses.



On July 30, 2019, the Group held a cadre meeting to further discuss emancipating the mind and changing concepts



Industry Leadership

We share technological progress with partners to promote industry development

We are well aware that the progress of the industry requires the joint promotion. Shanghai Electric has always seriously implemented the spirit of the Central Economic Work Conference. Under the strong leadership of the Shanghai Municipal Party Committee and the Municipal Government, it has insisted on cooperating with local governments, promoting local industrial development, and effectively promoting the quality and efficiency of state-owned capital. At the same time, we actively give play to the advantages of industry leaders, empower partners, and drive industry development.

Government cooperation

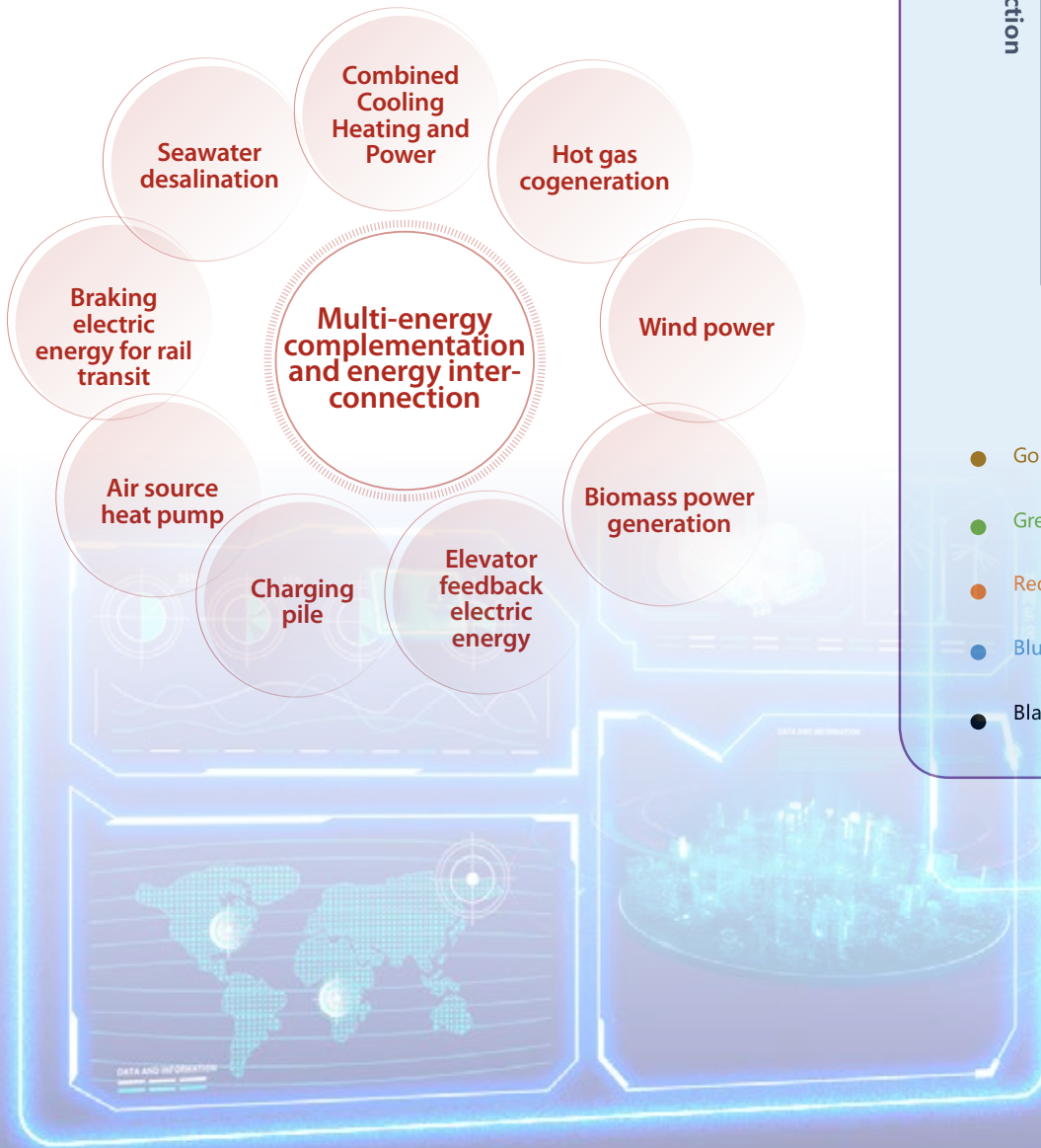
Shanghai Electric insists on complying with the needs of local governments and combining its own industrial advantages to continuously promote industrial development and progress. In 2019, local governments, especially new integrated demonstration cities, put forward a series of new requirements in terms of internet-of-all-thing, transportation governance, industrial upgrading, and environmental protection. Combined with our industry, we have prepared four "intelligent" system solutions, providing solutions to cities around the world through scenarios and demonstration project cases.

Communication Activities between Shanghai Electric and Government in 2019

2019.7.22	Premier Li Keqiang inspected Lingang Base
2019.6.18	Mayor Ying Yong attended hearing for a project in Egypt
2019.8.12	Executive Deputy Mayor Chen Yin made an inspection of reporting materials
2019.2.21	Deputy Mayor Wu Qing made a survey
2019.10.15	Received Director of SASAC Bai Tinghui
2019.11.25	Received Director of the Municipal Economic and Information Commission Wu Jincheng

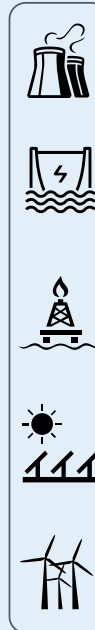
Shanghai Electric Smart Energy Solution

In the field of smart energy, Shanghai Electric has both high-capacity and high-parameter thermal power, gas turbine, nuclear power, wind power, solar energy, and ultra-high voltage power transmission and distribution equipment that represent the world's highest level; it also has smart energy planning software and big data equipment operation and maintenance management platform, seawater desalination, various energy storage equipment, heat pumps and new energy access equipment, representing the development direction of interconnecting distributed and centralized energy, which can provide users with a complete solution from the device to the management cloud platform and “smart energy” operation and management services throughout the life cycle.



Smart Energy Map

Large-scale energy production

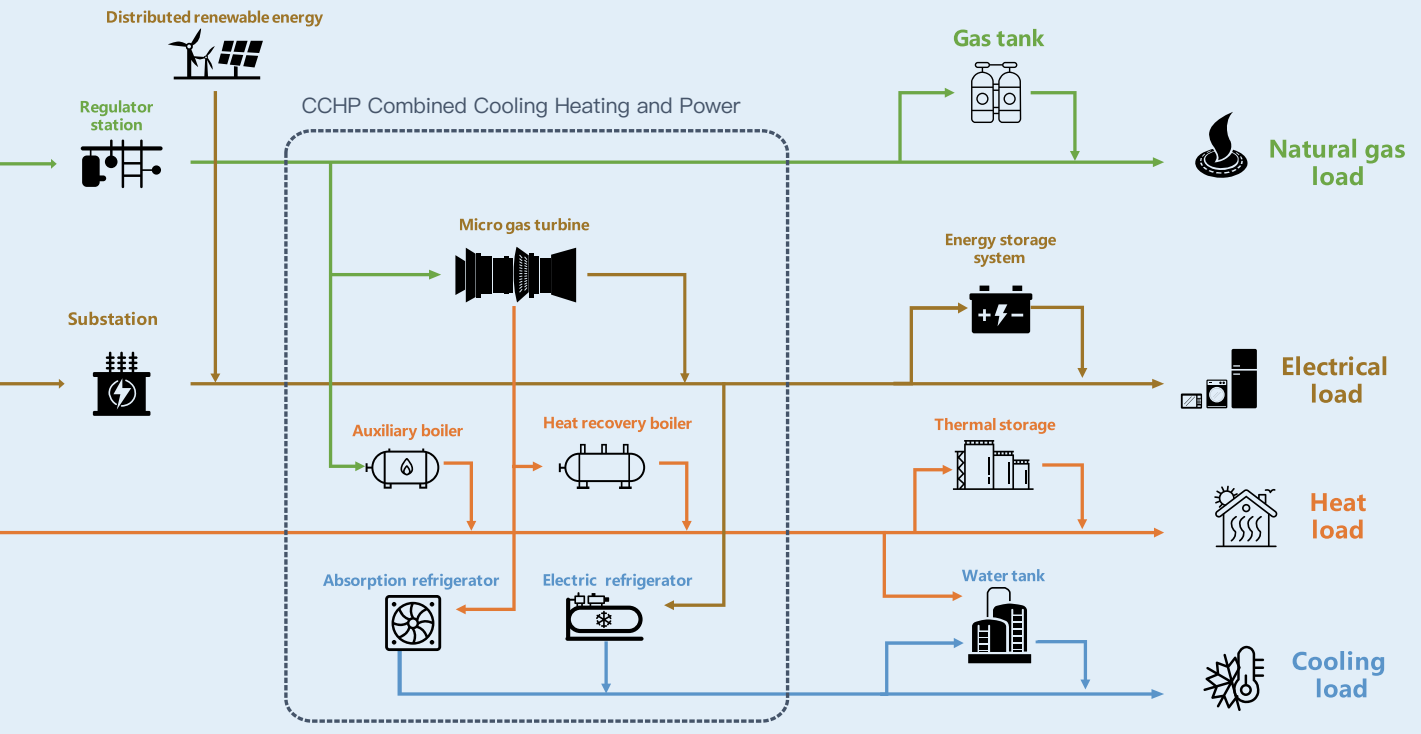


Natural gas

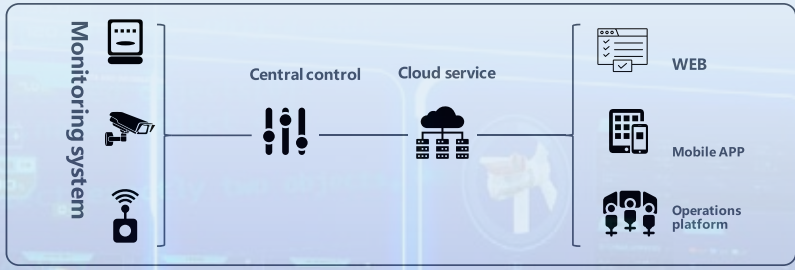
Electricity

Heat

- Gold : Electrical line/equipment
- Green : Natural gas pipeline/equipment
- Red : Heat pipeline/equipment
- Blue : Cooling pipeline/equipment
- Black : Control & other facility



Microgrid MEMS



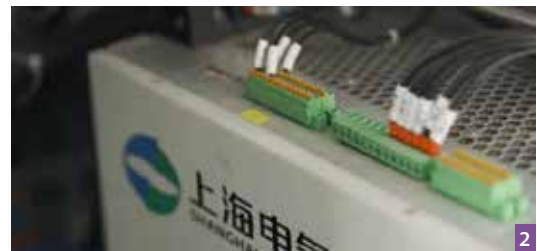
Pastoral intelligent energy demonstration project in Sanxing Town

Sanxing Town is located in the west of Chongming Ecological Island, with strong rural customs and rich farming culture. According to the development plan of Shanghai to build a world-class ecological island with a global leading and exemplary role, as well as its efforts to build a development pattern of "green energy" and "smart Chongming", Shanghai Electric Power Station Group proposed a comprehensive solution for the development of smart energy ecological towns based on distributed energy systems in urban construction after long-term market research and technical demonstration.

According to the agreement, Shanghai Electric and Sanxing Town gave full play to their respective advantages to develop comprehensive and multi-field cooperation around clean renewable energy, energy storage and other industries and business areas, as well as the construction of intelligent energy ecological towns. With the pastoral intelligent energy demonstration project as the cutting point, we accelerated the construction of smart energy ecological town in Sanxing Town.



1. Generating layer
- Consume self-generated surplus power on the grid by utilizing 100% renewable energy
2. Distribution layer
- Ensure smooth access to grid and improve power quality by using advanced power storage equipment
3. Electricity layer
- Light a good countryside life through co-building a beautiful countryside
4. Intellectualization
- Realize remote monitoring with Internet to create flexible trading possibilities



Government resonated with the development of enterprise



Ni Yaoming, head of Minhang District, and Zheng Jianhua, Secretary of the Party Committee and Chairman of Shanghai Electric Group, conducted in-depth communication on Shanghai Electric Group's land resource planning, taxation, and installation of elevators in old communities in Minhang District. Ni Yaoming said that the experience accumulated by Shanghai Electric Group in the transformation and development would promote the transformation and upgrading of Minhang District, and the Minhang District Government would continue to do a good job in various services to achieve a win-win situation. Zheng Jianhua said that Shanghai Electric would actively connect with the development plan of Minhang District in 2035 and resonate with the development of Minhang District

Shanghai Electric would help Xingtai's construction of "Smart City"



Shanghai Electric Group and Xingtai Municipal People's Government signed a strategic cooperation framework agreement. The two parties agreed to strengthen cooperation in smart manufacturing and smart city construction, promote complementary advantages and share resources, and provide first-class products and services for Xingtai's manufacturing industry transformation and upgrading, urban transportation development and ecological environment construction in combination with Shanghai Electric's "three-step" strategy. At the signing ceremony, Xingtai Mayor Dong Xiaoyu and Zhang Ke gave speeches on behalf of Xingtai City and Shanghai Electric, respectively

Industry progress

As an industry leader, while focusing on the needs and development of itself, upstream and downstream enterprises and customers in the supply chain, Shanghai Electric actively participates in industry standard setting and various industry exchange activities, and is committed to promoting innovation and progress throughout the industry. Shanghai Electric serves as the chairman unit of the Shanghai Industrial Internet Association, and promotes the development of the industrial Internet industry through the sharing of cutting-edge technologies and concepts.

The 88th Izmir International Trade Fair

In this exhibition, Shanghai Electric presented several high-end manufacturing models to share Shanghai Electric's concept of green economy along the Aegean Sea, showing Shanghai Electric's comprehensive strength and its system solutions in the fields of efficient clean energy and new energy to the world. At the exhibition site, Shanghai Electric demonstrated its technical strength in traditional thermal power construction through a coal-fired power station model; introduced the construction situation of the Dubai solar power station project through the molten salt tower CSP model; and promoted the energy solutions of Shanghai Electric in six different application scenarios through the integrated energy management platform.



Harmonious Community

We devote ourselves to social welfare and the harmonious development of the community.

While creating economic benefits and leading the development of the industry, Shanghai Electric does not forget the support provided by the community where it is located, upholds the concept of "joining the public to promote the harmonious development of society", insisting on organizing or participating in public welfare voluntary activities at home and abroad, and participating in targeted poverty alleviation, fighting against poverty, supporting education and public welfare undertakings, supporting the national anti-epidemic and disaster relief work with practical actions, always maintaining a harmonious relationship with the community, and helping to build a warm community.

Targeted poverty alleviation

Pairing to help Zhuangxing Town, Fengxian District, Shanghai

Shanghai Electric continued to deepen the rural comprehensive assistance and the paired assistance work of urban and rural party organizations in Fengxian District, play a role in party construction, deepen exchanges, increase friendship, ensure that the payment for assistance is in place, and lay a solid foundation for economic support. In 2019, the group and grass-roots enterprises provided a total of RMB 12.481 million of funds, of which RMB 10.8 million were received through paired assistance, RMB 870,000 were from donations, RMB 1.503 million were through our assistance to sell Fengxian agricultural products, RMB 103,000 were converted from materials, and RMB 55,000 were from charity sales.

Targeted poverty alleviation in Fuyuan County, Qujing City, Yunnan Province

In accordance with the requirements of the Shanghai Municipal Committee on the development of the "Double One Hundred" village enterprises for the purpose of targeted poverty alleviation work, the Group has paired with Tuotian Village, Fatu Village and Lumuke Village in Fuyuan County, Qujing City, Yunnan Province to carry out targeted poverty alleviation. In March, the first batch of RMB 900,000 of assistance funds were paid, mainly for local road construction and street lamp installation. By formulating poverty alleviation plans and implementing assistance projects, villagers can see and feel the actual effects of poverty alleviation as soon as possible, highlighting the role of state-owned enterprises and serving the national strategy.



Going into the assistance village, party members give their love

In December 2019, the party branch of Shanghai Prime Machinery Co., Ltd. carried out a party day activity on the theme of "delivering a little love", and organized party members to participate in the charity sale in Hui'an Village, Zhuangxing Town, Fengxian District, which was supported in pairs. On the scene of the activity, party members actively selected woven goods, earthen cloth bags and other charity products elaborately made by farmers, and visited the local model demonstration sites for the construction of a new socialist countryside. It is understood that all the donations from this charity sale in Hui'an Village were included in the Hui'an Village Women's and Children's Assistance Fund.



■ Educational charity

Bury "hope seeds" into poverty-stricken areas in Yunnan

On December 27th, Shanghai Electric Wind Power Group went to the poverty-stricken areas in Fatu Village, Mohong Town, Qujing City, Yunnan Province to carry out cultural poverty alleviation activities into the campus, bringing a lively popular science course on wind power to children in poor areas. The impressive corporate video caught the attention of the children as soon as it opened, and the lecturer introduced the working principle of the wind turbines and the story of "the staff of Shanghai Electric Wind Power Group" in vivid language. It is understood that the popularization of wind power science into the campus is one of the charitable activities of Shanghai Electric Wind Power Group. It is committed to providing children with the opportunity to perceive green energy and explore wind power stories. In the form of "video viewing + course explanation + model assembly", children can feel the charm of new wind power energy in the classroom and plant the seeds of hope to cherish the earth and protect their living homes.



Shanghai Electric's Love Summer Class Completely Concluded

On August 23, this year's Shanghai Electric Love Summer Class ended with a perfect performance by the children. Children were singing and dancing in turns and showing more exciting martial arts, cheerleading and theatrical performances, attracting the applause of the parents. Many parents said that both the curriculum and the food of summer class were far beyond expectations, and thanked the Group for allowing the children to have a safe, happy and meaningful summer vacation.



"Warmth of Shanghai Electric" reached the heart of Iraqi children

In November 2019, the Iraqi Huade Project Department of Shanghai Electric Power Station Engineering Company donated materials to the Managile Elementary School in Zubaidiya Town, Wasit Governorate, hoping that these materials would contribute to improving the living and learning conditions of local children.

This activity was an important measure taken by the Huade Project Department to actively respond to the "Belt and Road" initiative and implement the "International Community Construction" of the overseas power station project, which was highly concerned by the Iraqi government and all walks of life. Chinese Ambassador to Iraq Zhang Tao attended and praised Shanghai Electric's active participation in the project's philanthropy and support for local education development, expressing that this fully reflects Shanghai Electric's social responsibility and sense of responsibility as a state-owned enterprise, and hoped that more Chinese companies would participate in the post-war reconstruction of Iraq and make more contributions to the development of Iraq.



Public welfare of environmental protection

Young volunteers of Shanghai Electric Finance Group carried out a publicity campaign for garbage classification

March 5th was the 56th "Lei Feng Memorial Day". On the morning of the same day, the Youth League Committee of Shanghai Electric Finance Group and the Hengfeng Resident Committee jointly carried out a publicity campaign for garbage classification in Taihefang. The activity set up interactive sessions such as garbage classification knowledge presentation and interesting questions and answers. Young volunteers reminded people to establish the concept of garbage classification in real life and improve environmental awareness by issuing environmental protection bags and disposable garbage bags to residents.



Anti-epidemic and disaster relief

Shanghai Electric Yinghe Technology cooperated with Zhende Medical Supplies Co., Ltd. to develop KN95 mask production line



In response to the urgent need for medical protective products nationwide, during the Spring Festival of 2020, Shanghai Electric's Yinghe Technology urgently developed a full-automatic all-in-

one machine for planar medical masks, and signed a cooperation agreement with Zhende Medical Supplies Co., Ltd. to jointly develop a full-automatic production line for KN95 masks (M95).

Shanghai Electric signed the high-speed mask automatic production line contract with Threegun Group

In order to fully meet the demand of materials for epidemic prevention and control, in the afternoon of February 6, 2020, Shanghai Electric Group and Shanghai Threegun Group signed a manufacturing cooperation agreement of high-speed plane mask automatic production line, and strived to deliver 10 mask automatic production lines before February 20. Each production line had a production capacity of 110 pairs per minute. It can realize 24 hours of automatic and uninterrupted production and can produce 100,000 to 120,000 pairs of ear-band surgical masks that meet national standards.

As an old saying "Look for friends when one comes in and goes out -- mutual help among the neighbors" goes, Shanghai Electric urgently donates protective materials to Japanese partner

On March 16, 2020, Shanghai Electric Machinery Factory (hereinafter referred to as "Shangdian company") and Fuji Electric Technology Co., Ltd. (hereinafter referred to as "Shangdian Fuji") under Shanghai Electric Group Co., Ltd. jointly donated 6000 masks to Fuji Electric Co., Ltd. of Japan to support its daily epidemic prevention and control.



The Overseas Project Department of Shanghai Electric was concerned with the epidemic situation of the motherland, and purchased epidemic prevention materials for donation to 5 major hospitals



On February 14, 2020, Shanghai Electric Power Station Group donated a batch of epidemic prevention materials successively purchased through the Overseas Project Department to Shanghai Fifth People's Hospital, Shanghai Sixth Hospital, Huashan Hospital, National Maternal and Child Hospital and Ruijin Hospital. The epidemic prevention materials donated to five hospitals in Shanghai were purchased urgently from Dubai and Pakistan, including protective clothing, N95 masks, and goggles.

APPENDIX I LIST OF MAJOR LAWS AND REGULATIONS

Constitution of People's Republic of China
The Criminal Law of the People's Republic of China
Company Law of the People's Republic of China
Enterprise Income Tax Law of the People's Republic of China
Law of the People's Republic of China for Countering Unfair Competition
Contract Law of the People's Republic of China
Labor Law of the People's Republic of China
Labour Contract Law of the People's Republic of China
Employment Promotion Law of the People's Republic of China
Social Insurance Law of the People's Republic of China
Trade Union Law of the People's Republic of China
Law of the People's Republic of China on Labor Dispute Mediation and Arbitration
Law of the People's Republic of China on the Protection of Women's Rights and Interests
Cleaner Production Promotion Law of the People's Republic of China
Law of the People's Republic of China on Prevention and Control of Environmental Noise Pollution
Law of the People's Republic of China on Environmental Impact Assessment
Environmental Protection Tax Law of the People's Republic of China
Energy Conservation Law of the People's Republic of China
Law of the People's Republic of China on the Prevention and Control of Atmospheric Pollution
Law of the People's Republic of China on the Prevention and Control of Soil Pollution
Law of the People's Republic of China on Prevention and Control of Water Pollution
Law of the People's Republic of China on the Prevention and Control of Environmental Pollution by Solid Wastes
Environmental Protection Law of the People's Republic of China
Water Law of the People's Republic of China
Law of the People's Republic of China on Soil and Water Conservation
Renewable Energy Law of the People's Republic of China
Law of the People's Republic of China on Prevention and Control of Radioactive Pollution
Law of the People's Republic of China on Occupational Disease Prevention
Law of People's Republic of China on Work Safety
Fire Protection Law of the People's Republic of China
Advertising Law of the People's Republic of China
Trademark Law of the People's Republic of China
Patent Law of the People's Republic of China
Copyright Law of the People's Republic of China

APPENDIX II HKEX GUIDE INDEX

Subject Areas, Aspects, General Disclosures and KPIs

Environmental, Social and Governance Report

A. Environmental		
Aspect A1: Emissions		
General Disclosure	Information on: (a) the policies; and (b) compliance with relevant laws and regulations that have a significant impact on the issuer relating to air and greenhouse gas emissions, discharges into water and land, and generation of hazardous and non-hazardous waste.	Green and Low-carbon, Environmental Protection
KPI A1.1	The types of emissions and respective emissions data.	Green Manufacturing
KPI A1.2	Greenhouse gas emissions in total (in tonnes) and, where appropriate, intensity (e.g. per unit of production volume, per facility).	Green Manufacturing
KPI A1.3	Total hazardous waste produced (in tonnes) and, where appropriate, intensity (e.g. per unit of production volume, per facility).	Green Manufacturing
KPI A1.4	Total non-hazardous waste produced (in tonnes) and, where appropriate, intensity (e.g. per unit of production volume, per facility).	Green Manufacturing
KPI A1.5	Description of measures to mitigate emissions and results achieved.	Green Manufacturing
KPI A1.6	Description of how hazardous and non-hazardous wastes are handled, reduction initiatives and results achieved.	Green Manufacturing
Aspect A2: Use of Resources		
General Disclosure	Policies on the efficient use of resources, including energy, water and other raw materials.	Green Manufacturing
KPI A2.1	Direct and/or indirect energy consumption by type (e.g. electricity, gas or oil) in total (kwh in '000s) and intensity (e.g. per unit of production volume, per facility).	Green Manufacturing
KPI A2.2	Water consumption in total and intensity (e.g. per unit of production volume, per facility).	Green Manufacturing
KPI A2.3	Description of energy use efficiency initiatives and results achieved.	Green Manufacturing
KPI A2.4	Description of whether there is any issue in sourcing water that is fit for purpose, water efficiency initiatives and results achieved.	Green Manufacturing
KPI A2.5	Total packaging material used for finished products (in tonnes) and, if applicable, with reference to per unit produced.	Plan to make a detailed disclosure in future
Aspect A3: The Environment and Natural Resources		
General Disclosure	Policies on minimising the issuer's significant impact on the environment and natural resources.	Green and Low-carbon, Environmental Protection
KPI A3.1	Description of the significant impacts of activities on the environment and natural resources and the actions taken to manage them.	Green and Low-carbon, Environmental Protection

APPENDIX II HKEX GUIDE INDEX

Subject Areas, Aspects, General Disclosures and KPIs

Environmental, Social and Governance Report

B. Community		
Aspect B1: Employment		
General Disclosure	Information on: (a) the policies; and (b) compliance with relevant laws and regulations that have a significant impact on the issuer relating to compensation and dismissal, recruitment and promotion, working hours, rest periods, equal opportunity, diversity, anti-discrimination, and other benefits and welfare.	Right Protection
KPI B1.1	Total workforce by gender, employment type, age group and geographical region.	Right Protection
KPI B1.2	Employee turnover rate by gender, age group and geographical region.	Right Protection
Aspect B2: Health and Safety		
General Disclosure	Information on: (a) the policies; and (b) compliance with relevant laws and regulations that have a significant impact on the issuer relating to providing a safe working environment and protecting employees from occupational hazards.	Health and Safety
KPI B2.1	Number and rate of work-related fatalities.	Health and Safety
KPI B2.2	Lost days due to work injury.	Health and Safety
KPI B2.3	Description of occupational health and safety measures adopted, how they are implemented and monitored.	Health and Safety
Aspect B3: Development and Training		
General Disclosure	Policies on improving employees' knowledge and skills for discharging duties at work. Description of training activities.	Growth and Development
KPI B3.1	The percentage of employees trained by gender and employee category (e.g. senior management, middle management).	Growth and Development
KPI B3.2	The average training hours completed per employee by gender and employee category.	Growth and Development
Aspect B4: Labour Standards		
General Disclosure	Information on: (a) the policies; and (b) compliance with relevant laws and regulations that have a significant impact on the issuer relating to preventing child and forced labour.	Right Protection
KPI B4.1	Description of measures to review employment practices to avoid child and forced labour.	Right Protection
KPI B4.2	Description of steps taken to eliminate such practices when discovered.	Right Protection

Subject Areas, Aspects, General Disclosures and KPIs

Environmental, Social and Governance Report

Aspect B5: Supply Chain Management		
General Disclosure	Policies on managing environmental and social risks of the supply chain.	Responsible Procurement
KPI B5.1	Number of suppliers by geographical region.	Responsible Procurement
KPI B5.2	Description of practices relating to engaging suppliers, number of suppliers where the practices are being implemented, how they are implemented and monitored.	Responsible Procurement
Aspect B6: Product Responsibility		
General Disclosure	Information on: (a) the policies; and (b) compliance with relevant laws and regulations that have a significant impact on the issuer relating to health and safety, advertising, labelling and privacy matters relating to products and services provided and methods of redress.	Quality Assurance
KPI B6.1	Percentage of total products sold or shipped subject to recalls for safety and health reasons.	Quality Assurance
KPI B6.2	Number of products and service related complaints received and how they are dealt with.	User First
KPI B6.3	Description of practices relating to observing and protecting intellectual property rights.	Value Innovation
KPI B6.4	Description of quality assurance process and recall procedures.	Quality Assurance
KPI B6.5	Description of consumer data protection and privacy policies, how they are implemented and monitored.	User First
Aspect B7: Anti-corruption		
General Disclosure	Information on:(a) the policies; and (b) compliance with relevant laws and regulations that have a significant impact on the issuer relating to bribery, extortion, fraud and money laundering.	Corporate Governance Clean Development
KPI B7.1	Number of concluded legal cases regarding corrupt practices brought against the issuer or its employees during the reporting period and the outcomes of the cases.	Corporate Governance
KPI B7.2	Description of preventive measures and whistle-blowing procedures, how they are implemented and monitored.	Corporate Governance Clean Development
Aspect B8: Community Investment		
General Disclosure	Policies on community engagement to understand the needs of the communities where the issuer operates and to ensure its activities take into consideration the communities' interests.	Harmonious Community
KPI B8.1	Focus areas of contribution (e.g. education, environmental concerns, labour needs, health, culture, sport).	Harmonious Community
KPI B8.2	Resources contributed (e.g. money or time) to the focus area.	Harmonious Community

APPENDIX III FEEDBACK

In order to continuously improve Shanghai Electric's management work related to its ESG performance, we hope to get your feedback, which will become an important basis for us to improve our work level. Thank you for your valuable suggestions on the topics and issues of this report and the theme of 2020 report.

Your Information	
Name:	Unit:
Tel:	E-mail:

Your Opinion	
1. In your opinion, Shanghai Electric's 2019 Environmental, Social and Governance Report is generally:	
<input type="checkbox"/> Very good	<input type="checkbox"/> Good
<input type="checkbox"/> Fair	<input type="checkbox"/> Poor
<input type="checkbox"/> Very Poor	
2. In your opinion, the information disclosed in the Shanghai Electric's 2019 Environmental, Social and Governance Report is generally:	
<input type="checkbox"/> Very rich	<input type="checkbox"/> Rich
<input type="checkbox"/> General	<input type="checkbox"/> Little
<input type="checkbox"/> Very little	
3. In your opinion, the quality of information disclosed in the Shanghai Electric's 2019 Environmental, Social and Governance Report is generally:	
<input type="checkbox"/> Very high	<input type="checkbox"/> High
<input type="checkbox"/> General	<input type="checkbox"/> Low
<input type="checkbox"/> Very low	
4. In your opinion, the forms of presentation in the Shanghai Electric's 2020 Environmental, Social and Governance Report shall be enriched as:	
<input type="checkbox"/> Explanation of management ideas	<input type="checkbox"/> Data chart
<input type="checkbox"/> Case	<input type="checkbox"/> Special topic
<input type="checkbox"/> Picture	
5. In Shanghai Electric's 2020 Environmental, Social and Governance Report, the topics you wish to add:	
<input type="checkbox"/> Economic growth category, specifically:	
<input type="checkbox"/> Environmental protection, specifically:	
<input type="checkbox"/> Social progress, specifically:	
<input type="checkbox"/> Overseas business, specifically:	
<input type="checkbox"/> Other categories, specifically:	

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