

2018 Environmental Social and Governance Report

Shanghai Electric Group Company Limited

>>> >>>



| **Mission** | Empower Global Industry, Make Life Smarter

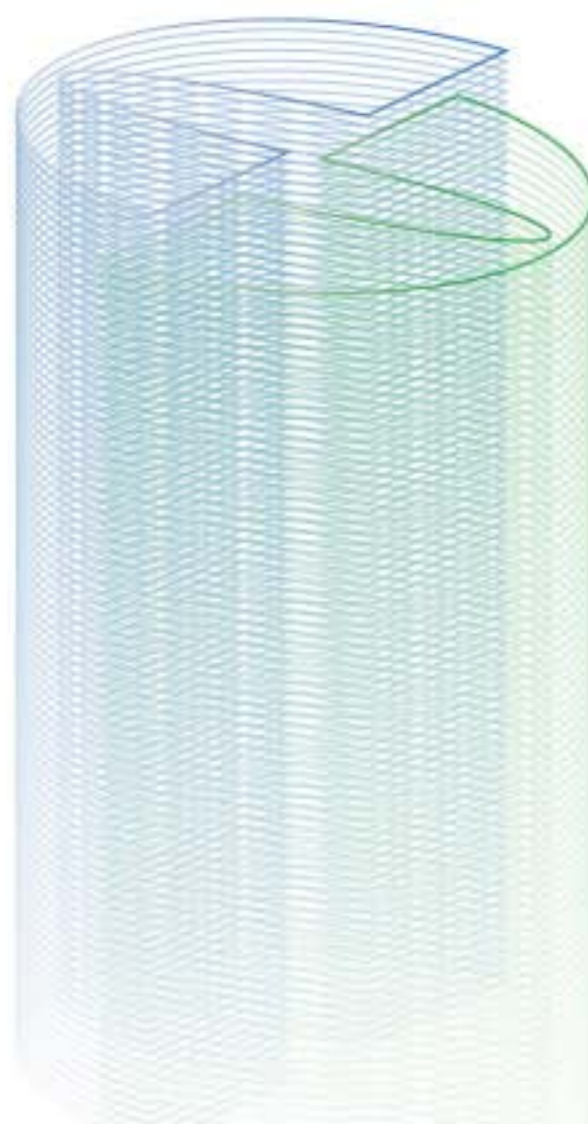
| **Vision** | To be a global top-notch new aircraft carrier for high-end equipment

| **Core Values** | Superior Craftsmanship, Value Innovation,
Win-win Cooperation, Empowering Customers



Shanghai ELECTRIC

Create Our Future Together



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Notes to Readers

Brief Introduction

Shanghai Electric Group Company Limited began to prepare and disclose its 2009 annual social responsibility report in 2010 and issued such report on an annual basis. This is the 10th corporate social responsibility report of the Company, aiming to give a true view of the development and performance of corporate social responsibility of the Company for the year 2018, to report the operation of the Company to stakeholders including shareholders, employees, customers, government, partners and community, and to help stakeholders to gain an in-depth understanding of the corporate social responsibility activities of the Company.

Sources of Data

Certain financial figures contained in this report were derived from the financial report of Shanghai Electric Group Company Limited for the year 2018 which has been audited independently by PricewaterhouseCoopers Zhong Tian LLP. Further details of our financial results are set out in the 2018 annual report of Shanghai Electric Group Company Limited. Other figures and data have been prepared based on relevant rules and regulations of the Company which have not been verified by any independent third party.

Basis of Preparation

In preparing this report, we have followed and made references to the following standards, documents and guidelines:

1. Guidelines for Preparing and Reviewing Internal Control Reports and Social Responsibility Reports of Listed Companies of Shanghai Stock Exchange
2. Core option of the Sustainability Reporting Guidelines (G4 Version) of Global Reporting Initiative ("GRI")
3. Guidelines on Corporate Social Responsibility Reporting for Chinese Enterprises issued by the Chinese Academy of Social Sciences
4. ISO 26000: Guidance on Social Responsibility (2010)
5. Environmental, Social and Governance Reporting Guide as annexed to the Listing Rules of The Stock Exchange of Hong Kong Limited

Description of References

For convenience, "we", "Shanghai Electric", "the Company" and "the Group" used herein refers to "Shanghai Electric Group Company Limited". To reduce environmental pollution and paper use, this report is mainly published in PDF electronic form. Readers can download this report from the website of the Hong Kong Stock Exchange (www.hkexnews.hk) or the website of Shanghai Electric Group Company Limited (www.shanghai-electric.com).

Reporting Period

This report covers the period from 1 January 2018 to 31 December 2018. Certain information may go beyond the period.

Scope of Reporting

The contents of this report cover the headquarters, internal organizations, branches, wholly-owned subsidiaries of Shanghai Electric Group Company Limited and companies in which Shanghai Electric Group Company Limited has controlling or non-controlling interests. Your feedback is welcome!

Your feedback is welcome!

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Chairman's Statement

As a leading brand of China's industry, Shanghai Electric has always taken revitalizing national industry through developing cutting-edge equipment as its responsibility and forged ahead with commitment to contribute to making China a powerful country. Over its century-long development and evolution, Shanghai Electric has created many "firsts" in China and the world and, together with the great innovators of this age, continuously contributed to the improvement and upgrading of the quality of human life.

Since entering the new era, China has taken a place in the center of the world stage, and we have come increasingly closer to our goal to rank among the first echelon of top equipment manufacturers in the world. To "empower global industry, and make life smarter" is the new mission of Shanghai Electric, a new aircraft carrier for high-end equipment, on its new journey.

In the course of development, there are always some highlights and milestones to be remembered and engraved in history, just like 2018 which is undoubtedly a most splendid year in the history of Shanghai Electric. During the year, thanks to our steadfast efforts in pursuing reform and bold innovation, Shanghai Electric recorded revenue exceeding the "RMB100 billion" for the first time in our history and joined the rank of "RMB100 billion" enterprises for the first time, realizing the long-anticipated dream of Shanghai Electric since the new century. Also, we paid tribute to the 40th anniversary of China's reform and opening up with outstanding results from our pioneering reform efforts.

Zheng Jianhua

Secretary of the Party Committee
Chairman and CEO

While rejoicing at our success, we noted that there are many important moments in the past year worth remembering: In the year, we were in the vanguard of the reforms of state-owned enterprises, taking substantial steps to deepen institutional reform. By participating in the listing plan of the parent company, we have expanded our asset size and strengthened our capability. Further, we took a string of reform moves. In particular, we introduced share incentive system, business partner system and professional manager system on a trial basis, worked out a share incentive scheme, deepened the internal management reform to "delegate powers, improve management and optimize services", optimized cadre structure, and implemented the systems of fixed tenures, staff rotation and performance-linked remuneration.

In the year, we played a vital part in implementing the Yangtze River Delta economic zone strategy and achieved positive results in accelerating the integrated development of the Yangtze River Delta region. We integrated supply chain, industrial chain, resource chain and innovation chain to bring into full play the synergies arising from the integrated development of the Yangtze River Delta region. In 2018, we set up the regional headquarters of Shanghai Electric in Nantong, and joined hands with Guoxuan High-tech to build the largest and most advanced base for lithium-battery energy storage systems production base; set up the Shanghai Electric Matechstone (Xuzhou) Heavy Industry equipment base (上海電氣研設徐州重工裝備基地) in Xuzhou to develop intelligent equipment for prefabricated buildings, and obtained orders with an aggregate amount of RMB1 billion upon commencement of operation within the year; and established the Shanghai Electric Offshore Wind Power Equipment R&D and Training Center in Jiangsu.

In the year, we took the lead to promote the "Belt and Road" initiative by taking solid steps to implement the "going global" strategy. In 2018, we were awarded the contract for the Dubai 700MW CSP + 250MW PV hybrid project, which, covering an area of 44 square kilometers and with a contract value of more than US\$ 3 billion, is the largest and the most technologically advanced one of its kind in the world; and we joined hands with our partners to undertake the Hamra-wein 6*1100MW clean coal-fired power plant project in Egypt which, with a contract value of US\$ 4.4 billion, is the largest and the most technologically advanced one of its kind in the world. In addition, we set up a wind power equipment R&D company in Denmark and made venture capital investments in the United States, Israel and Japan. We are becoming a leader in the "going global" efforts of Chinese enterprises, an outstanding representative of multinational corporations and a spokesperson of "Made in Shanghai" brands.

In the year, we proactively implemented supply-side structural reforms, and made remarkable progress in adjustment and optimization of industrial structure. In 2018, we vigorously developed "Internet plus Equipment Manufacturing" to form a high-end intelligent equipment industrial cluster. We participated in and achieved initial results for the heavy-duty gas turbine project, a major national special project. We have deployed resources for the core components of new energy vehicles in an all-round way, setting up a digital technology company, an intelligent manufacturing engineering company and an intelligent electronic track company, gradually creating strong development potentials and fresh momentum.

In the year, we acted as a spokesperson of "Made in Shanghai" brands, and our reputation as a "High-end Manufacturing" brand was further enhanced. In 2018, our brand value reached RMB70.6 billion, up by RMB10 billion from 2017, and we appeared on the 2017 list of Global 500 Manufacturers and the 2017 list of Fortune 500 China.

Stepping into the new year of 2019, we look back on our development history from the perspective of corporate social responsibility and learn from our experiences, which, we believe, is the best way to embrace a new era and start a new journey. In the face of unknown challenges, we are convinced that no matter where we are and what expectations placed on us, we will make relentless efforts to drive reform as we know it will not allow a halt, nor will it be easy.

2019 is a key year for Shanghai Electric to make milestone progress towards its strategic goal. We will, in persistent pursuit of our "Electric Dream" and in close line with our national strategies, focus on high-end equipment business, accurately predict future demand, strive to develop integrated digital solutions that are green, environment-friendly, intelligent and interconnected, and explore more possibilities for innovation and transformation, thereby creating ever better achievements for our customers and making greater contributions to the future.

Secretary of the Party Committee
Chairman and CEO

President's Statement

Huang Ou

Deputy Secretary of the Party Committee, President



I. Staying true to our "Electric Dream"

From China's first 10,000-ton hydraulic press to China's first marine crankshaft, from the first domestically-made thermal power generating unit to the world's largest solar thermal power plant, Shanghai Electric has come a long way. It has always taken revitalizing China's industrial development as its mission and promoting global sustainable development as its responsibility, endeavoring to create a better future together with innovators around the world.

2018 was the outset year for full implementation of the guiding principles from the 19th CPC National Congress, and also the first year for Shanghai Electric to launch new strategies. As part of our efforts in pursuit of our "Electric Dream", under the guidance of Xi Jinping Thought on Socialism with Chinese Characteristics for a New Era, we strove to develop "green, environment-friendly, intelligent, interconnected, integrated system solutions". We accelerated the expansion of our global operations, further adjusted our industrial structure and pushed forward institutional reform in an effort to build Shanghai Electric into a globally leading well-respected corporation!

II. Seeking innovative growth in the new era

We seek to deliver better results to our shareholders. In 2018, we promoted ideological emancipation and conceptual change across the Group, battled against the headwinds and achieved double-digit growth in both revenue and

net profit amid profound changes in the external environment. We stepped up our efforts in "going global", and undertook a number of high-profile clean energy projects in Asian, European and African countries such as the United Arab Emirates, Britain and Egypt, practicing the "Belt and Road" initiative and expanding cooperation with third parties. We further improved our corporate governance structure by setting up a risk management department and continuously improving our internal control, risk management and compliance management systems so as to safeguard the rights and interests of investors.

We strive to create value for users. In 2018, we deepened our cooperation with Italy-based Ansaldo Energia to develop key technologies so that we can provide users with a full range of heavy-duty gas turbines and relevant services. We explored the value of full lifecycle data, and our "Feng Yun" intelligent operation and maintenance platform connected nearly 3,000 wind turbines nationwide, helping improve the stability and power generation of wind turbines and reducing the workload of operation and maintenance personnel by 20%. We energetically supported applied basic research and won two National Science and Technology Progress Awards (second class).

We highly value staff career development. In 2018, we proactively pushed forward institutional reform, completed the mixed-ownership reform of Shanghai Electric Guoxuan Company (电气国轩公司), further improved the market-oriented operation mechanisms, and injected new vitality and impetus into the common development of employees and enterprises. We took solid steps to carry out occupational health management, such as distributing occupational health and safety management manuals and responsibility guidelines, conducting standards-compliance activities and hazards rectification and overseeing the implementation of the measures for managing occupational disease hazards and risks, thereby creating a safe and healthy working environment.

We see win-win cooperation as a key element to our success. In 2018, we continued to improve our online supplier management platform and steadily advanced centralized management on purchasing so as to develop a "clean, open, win-win" supply chain system. We further expanded cooperation with third parties, and joined hands with 10 enterprises, including AVIC Commercial Aircraft Engine Co., Ltd. and Evergrande Group, to carry out in-depth strategic cooperation and leverage complementary advantages so as to build the core competitiveness of Chinese enterprises and enhance the global influence of Chinese brands.

We view low-carbon, circular development as a foundation for sustainability. In 2018, we expanded our environmental protection business. In particular, we delivered a smart energy demonstration project system integrating "wind and solar power generation, energy storage and EV charging", tapped into the field of batteries, electric motors and electric control systems used in new energy vehicles, and further developed our distributed waste and sewage treatment business, thereby contributing to building a "Beautiful China".

We contribute to innovative social governance. In 2018, we upheld the governance philosophy that highlights collaboration, participation and common interests, and actively engaged in integrated development of the Yangtze River Delta region. We set up an energy storage industry base in Jiangsu and a prefab-building equipment base, carried out "smart city" strategic cooperation with a listed company engaged in the Internet of Things in Zhejiang, and built infrastructure for sewage treatment and river course harnessing in Anhui.

III. Embarking on a new journey

Innovation is the primary driving force for development. We build on our intelligent manufacturing business to integrate and develop advanced manufacturing and modern services. We will strive to develop technologies for smart factories to empower the transformation and upgrading of manufacturing sector, and broaden the career development prospects for our customers and employees. We will devote efforts to develop smart energy and smart transportation solutions to promote the integrated development of real economy and digital economy and facilitate the green development for the environment and society. In addition, we will tap into the industrial Internet to propel the high-quality development of manufacturing industry and enhance win-win development for our shareholders and partners.

Struggle creates history; hard work makes a bright future. Shanghai Electric will forge ahead with confidence and determination, balance development speed, quality and efficiency, optimize its modern management system and build a global high-end industrial chain. Aiming to rank itself among the top 500 companies worldwide, Shanghai Electric is embarking on a new journey to become a global top-notch "new aircraft carrier" for high-end equipment!

Deputy Secretary of the Party Committee
President

Responsibility Model

Shanghai
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About Us

Corporate Profile

• Legal name of the Company in Chinese	上海电气集团股份有限公司
• Abbreviated legal name of the Company in Chinese	上海电气
• Legal name of the Company in English	Shanghai Electric Group Company Limited
• Abbreviated legal name of the Company in English	Shanghai Electric
• Stock code of A shares	601727
• Stock code of H shares	02727
• Registered address	30/F, Maxdo Center, No.8 Xingyi Road, Shanghai
• Business address	No. 212 Qinjiang Road, Shanghai
• Company website	www.shanghai-electric.com
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Core Businesses

Shanghai Electric is a large integrated equipment manufacturing conglomerate, and mainly operates four business segments, namely high efficiency and clean energy equipment, new energy and environmental protection equipment, industrial equipment and modern services. Shanghai Electric is committed to providing customers with green, environment-friendly, intelligent and interconnected technology integration and system solutions, its products including 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 & escalators, rail transit equipment, machine tools, etc.

Major Subsidiaries

Shanghai Electric Power Generation Equipment Co., Ltd.	Shanghai Electric Hong Kong Co., Ltd.
Shanghai Mechanical & Electrical Industry Co., Ltd.	Shanghai Turbine Works Co., Ltd.
Shanghai Mitsubishi Elevator Co., Ltd.	Shanghai Electric Gas Turbine Co., Ltd.
Shanghai Electric Communication Technology Co., Ltd.	Shanghai Electric Milling Equipment Co., Ltd.
Shanghai Electric Group Finance Co., Ltd.	Shanghai Dense Fuel Injection Co., Ltd.
Shanghai Electric International Economic & Trading Co., Ltd.	Shanghai Institute of Mechanical & Electrical Engineering Co., Ltd.
TEC4GERO GmbH	Shanghai Renmin Electrical Apparatus Works
Shanghai Boiler Works, Ltd.	Shanghai Electric Leasing Co., Ltd.
Shanghai Electric Wind Power Group Co., Ltd.	Shanghai Blower Works Co., Ltd.
Shanghai Electric Nuclear Power Equipment Co., Ltd.	Shanghai Prime Machinery Co., Ltd.
Shanghai Electric Group Shanghai Electric Machinery Co., Ltd.	Thales SEC Transportation System Co., Ltd.
Shanghai Electric Power Transmission and Distribution Group Co., Ltd.	Shanghai Electric Group Property Co., Ltd.
Shanghai Electric Import & Export Co., Ltd.	

Key Performance Indicators

Environmental Performance Indicators:

Environmental performance indicators	2016	2017	2018
Total investment in environmental protection (RMB 10 thousand)	5,471	6,748	7,590
Energy consumption per unit output value (tons of standard coal equivalent/RMB10 thousand)	0.0288	0.0290	0.0247
Water consumption per unit output value (tons of water/RMB 10thousand)	0.6795	0.7531	0.6199
Exhaust emissions (10 thousand cubic meters)	256,283	306,994	446,111
Wastewater discharge (tons)	4,847,928	3,473,988	3,860,932
Slag discharge (tons)	7,666	3,922	22,573
Comprehensive utilization rate of three types of industrial wastes (%)	45.51	47.33	75.16
Greenhouse gas emissions (tons)	224,079	268,054	245,494

Notes: 1. Wastewater discharge only includes discharge of industrial wastewater.

2. Slag discharge includes general industrial solid waste and hazardous waste.

Social Performance Indicators:

Social performance indicators	2016	2017	2018
Total number of employees	29,293	29,552	30,182
Labour contract signing rate (% of staff)	100%	100%	100%
Coverage of social insurance (% of staff)	100%	100%	100%
Trade union participation rate	100%	100%	100%
Proportion of female management personnel	19.6%	20.1%	21.5%
Proportion of staff covered by health checkup program	100%	100%	100%
Total investment in staff training (RMB 10 thousand)	8,605	8,735	8,786
Proportion of staff covered by training programs	99.8%	99.8%	99.8%
Per capita training time (days)	3.5	3.5	3.5
Employee satisfaction	97.3%	97.5%	97.6%
Employee turnover rate	2.1%	2.9%	2.8%
Lost days due to work injury	3,322	2,314	2,208
New cases of occupational diseases	0	0	0
Charitable donations (RMB10 thousand)	550.5	347.5	327.1



Responsibility Strategy

With a primary focus on the energy industry, we are committed to green manufacturing and manufacturing green products, and strive for low-carbon economy by developing new energy equipment, high efficiency and clean energy equipment and energy-saving equipment, thereby contributing to "energy conservation and emission reduction" – a common goal of all mankind.

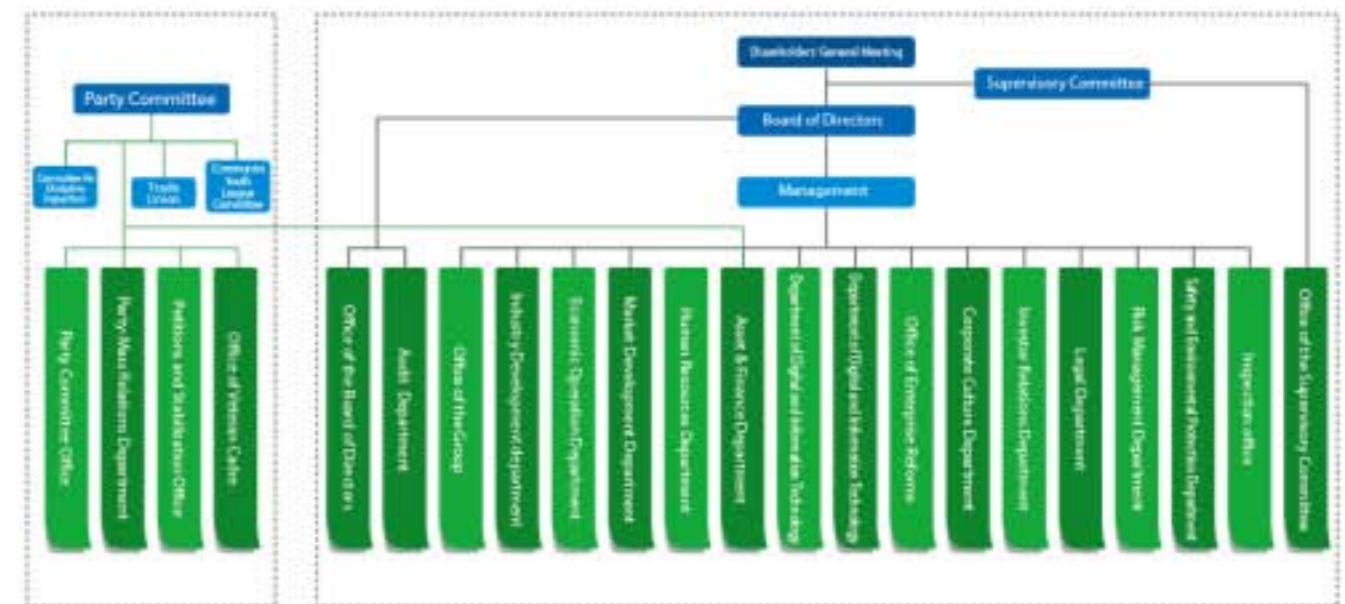
Social Contribution Value per Share for 2018 (RMB)

• Basic earnings per share (RMB)	0.20
• Add: tax contribution per share (RMB)	0.32
• Add: enrollment contribution per share (RMB)	0.59
• Add: debt service contribution per share (RMB)	0.08
• Add: social donation per share (RMB)	0.0002
• Social contribution value per share (RMB)	1.19

Key financial indicators for 2018 multiples of (RMB 100 million)

Total assets	2,185.22
Revenue	1,011.58
Net assets attributable to shareholders of the listed company	572.90
Net profit attributable to shareholders of the listed company	30.165

Organizational Structure



Value Innovation | Rewarding Shareholders

Shanghai Electric strives to generate fair returns for shareholders while ensuring the stability and continuity of investment returns. According to the Company Law of the People's Republic of China, the Securities Law of the People's Republic of China and other relevant laws and regulations, as well as the Articles of Association of Shanghai Electric Group Company Limited, Shanghai Electric gives priority to cash dividends as a profit distribution method and specifies the payout ratio, i.e. the accumulated profits distributed in cash for the last three years shall in principle be not less than 30% of the average annual distributable profits realized in the last three years. In 2018, following the completion of the Company's previous two major asset reorganizations, the 2017 profit distribution plan of Shanghai Electric was tabled at the shareholders' general meeting held on 29 June 2018, and was considered and approved at the meeting. As of 2018, we had distributed cumulative dividends totaling RMB7,214 million to our shareholders.

Dividends to shareholders

	2018	2005	Increase
Total revenue	101,157,525	34,556,890	193%
Net profit attributable to shareholders of the parent company	3,016,525	1,672,212	80%
Total assets	218,521,865	55,165,348	296%
Total shareholders' equity	73,636,620	21,186,282	248%

➔ 1.1 Improving corporate governance to ensure scientific decision-making

In accordance with the requirements of the Company Law, the Securities Law and the Standards for the Governance of Listed Companies, Shanghai Electric keeps improving corporate governance structure, stays in compliance with all requirements applicable to it as a listed company, and ensures that all decisions are accurately made and on the right track and smoothly implemented, so as to assure the proper development of the Company.

The controlling shareholder of the Company exercises its rights strictly according to the requirements of laws and the regulations of company while independent directors have been professionally performing their duties from the view point of independent third parties with due diligence, and the Board delegates authority to management on the basis of complete trust, and keeps track of and assesses the progress of significant projects. Minority shareholders' interests are duly considered and protected when it comes to connected transactions between the Company and its controlling shareholder. Directors, supervisors and senior management members of the Company strictly perform their duties on information disclosure with due diligence and good faith in accordance with the requirements of relevant laws and regulations, the articles of association and the administrative measures for information disclosure of the Company and ensure the truthfulness, accuracy, completeness, timeliness and fairness of information disclosure.

Directors, supervisors, senior management members of the Company consciously comply with the disclosure principles of fairness, actively participate in the subsequent trainings organized by regulatory authorities to keep informed of the latest regulatory requirements, act with due diligence, review relevant matters requiring decision-making and give express opinions thereon. Further, they pay close attention to media coverage relating to the Company, provide effective support to the secretary to the Board, keep examining the information disclosure documents published in designated media by the Company, offer effective guidance and constructive suggestions and opinions for the Company's routine information disclosure work and thus provide a guarantee mechanism for fulfilment of duties by the secretary to the Board. Directors, supervisors, senior management members of the Company have keen sense of integrity, regulatory compliance, due diligence and innovation.





Shareholders' general meetings ("general meetings")

General meeting is the highest authority of Shanghai Electric, protecting shareholders' right to information, right of speech, right of inquiry and right of voting. In 2018, the Company held one annual general meeting and three extraordinary general meetings.

Board of Directors

The Board of Directors of Shanghai Electric ("Board") currently comprises 9 members, including 3 independent non-executive directors, 4 executive directors and 2 non-executive directors, among whom two are female. The members of the Board have extensive working experience in various professional fields. The Board makes decisions on significant strategies and performs its decision-making function, and has made important contributions to strategic direction, remuneration evaluation and risk management of the Company. Meanwhile, the Board also keeps an eye on and oversees the efforts and performance of the Company on environmental protection and social responsibility. In 2018, a total of 19 Board meetings were held by means of on-site voting and voting by other communication means, at which 107 resolutions were considered.

Supervisory Committee

The supervisory committee of the Company ("Supervisory Committee") is responsible to shareholders of the Company, overseeing the operation and financial position of the Company and the performance of duties by the directors and senior management of the Company as well as providing suggestions for improvement. The Supervisory Committee comprises 5 supervisors, including two staff representative supervisors. In 2018, 16 meetings of the Supervisory Committee were held.



➔ 1.2 Focusing on principal business to propel growth

With the vision of "becoming a global top-notch aircraft carrier for high-end equipment", we keep abreast of the times, pursue independent innovation, and constantly promote a new round of transformation breakthroughs for the Group. Facing the slowdown of China's economy, demand saturation and overcapacity in China's equipment manufacturing industry and increasingly fierce competition within the industry and other challenges, we have taken the initiative to adapt to changes in the market environment, taken positive actions to cope with the difficulties, and meticulously carried out technology accumulation and innovation integration to promote industrialization of high and new technologies and high-end manufacturing in an attempt to achieve industrial transformation and upgrading and enhance core competitiveness.



➔ Achieving leap-forward development of principal business

- ➔ **Progressing steadily** The Group posted revenue exceeding RMB100 billion for the first time in its history, achieving double-digit growth in both revenue and profit.
- ➔ **Adjusting structure** In respect of new energy business, while expanding and consolidating its presence in domestic market, the Group has made major breakthroughs in overseas markets and undertaken a number of high-profile projects in Asian, European and African countries covered by the "Belt and Road" initiative. In addition, breakthroughs have also been made in key emerging industries such as smart city, smart transportation and large aircraft projects.
- ➔ **Growing stronger** The Group's power generation, power transmission and distribution and nuclear power business groups and Shanghai Mitsubishi Elevator together realized sales of more than RMB68 billion for 2018, playing a pillar role in supporting the development of the Group.
- ➔ **Enhancing quality** With improving quality of economic operation and growing profitability, the Group's financial soundness was further enhanced.

➔ Improving quality of business operations through classified management

Based on business line, scale, development speed and other factors, the Group implements differentiated classified management for subordinate enterprises and promotes innovation and reform of management and control models. Through the establishment of business climate index, management effectiveness index and enterprise health index, the Group urges and guides its subordinate enterprises to continuously optimize and improve the quality of their business operations.

➔ Increasing resource sharing to enhance intra-group collaboration

A virtual team was formed for market expansion to realize the sharing of internal information. Through the "concerted action and holistic marketing" model, the Group is able to consolidate group-wide resources to generate synergies and effectively enhance the collaboration among business groups and enterprises within the Group.

A joint conference system for overseas projects was developed for sharing information and experience on overseas projects and ensuring effective coordination of the progress schedules of overseas projects. In addition, with a rapid increase in orders from overseas markets, the Group further expanded its international operations.

➔ Improved quality of power equipment

According to the 2017 national power reliability data, the reliability of core power equipment produced by Shanghai Electric is good in general, with the reliability indexes of boilers and generators ranked first and reliability index of steam turbines ranked second among China's top three power equipment groups, which once again demonstrates the quality superiority of Shanghai Electric's thermal power generating units.

Statistics show that the equivalent unplanned outage hours of power generation enterprises increased in 2018, but the power generating units manufactured by Shanghai Electric had the most stable performance, and the total number of non-outage hours of the core equipment (boilers, generators and steam turbines) manufactured by Shanghai Electric was obviously better than that of those produced by industry peers. This was mainly due to the fact the number of power generating units from Shanghai Electric being included in the scope of reliability assessment has been on the rise in recent years. Take 1,000MW turbine-generator units as an example, during the past four years, 20 new units produced by Shanghai Electric were included in the assessment scope, bringing the total number of units produced by Shanghai Electric covered by the assessment up to 55, accounting for 60% of the units subject to nationwide reliability assessment.

➔ 1.3 Transforming Development to Enhance Efficiency

While focusing on our core business, optimizing existing core business and vigorously developing the emerging core business, we insist on market-based, specialized, internationalized operations, and pursue innovation-driven transformative development in efforts to catch up with international leading players. Furthermore, we have stepped up efforts in adjusting industrial structure, developing our global presence and multinational operations as well as the reform and innovation of systems and mechanisms so as to join the global "first echelon" enterprises at the soonest and accomplish the strategic goals of Shanghai Electric in the new era.

➔ Acquisition of a controlling stake in Thvow Technology

On 13 December 2018, the acquisition of the shares in Suzhou Thvow Technology Co. Ltd. ("Thvow Technology") was completed, marking Thvow Technology became a subsidiary of Shanghai Electric. The acquisition, conducted by way of "private placement + equity transfer + voting right proxy", was the first successful acquisition of the controlling stake in an A-share listed company by an A-H dual-listed company in the Chinese capital market.

As Thvow Technology and Shanghai Electric have complementary strengths in terms of business areas, customer structure, product mix and design capability, the acquisition would enable Shanghai Electric to further improve its energy engineering business chain through intra-group business collaboration to expand the energy market and improve its comprehensive strengths in the energy sector. The acquisition is an important move taken by Shanghai Electric in response to the call for reform of state-owned enterprises, adjusting and optimizing the allocation of state-owned capital and enhancing the vitality of state-owned enterprises. Further, it is in line with the strategic business development direction of Shanghai Electric and is conducive to accelerating the business transformation and upgrading towards the "manufacturing + services". Upon completion of the acquisition, Thvow Technology became a representative of the new state-owned enterprises under Shanghai Electric, which may bring into full play the advantages of Thvow Technology as a listed company with mixed ownership and inject fresh vitality into the development of Shanghai Electric.

➔ RMB1.6 billion medical M&A fund to invest in medical device sector

On 4 June 2018, the Group announced that it initiated a medical M&A fund with a total size of RMB1.6 billion, of which RMB200 million would be financed with its own resources. The fund will be mainly invested in medical equipment and machinery and equipment industry, including the fields of vitro diagnosis, radiation treatment, ultrasound equipment, medical robotics, medical services and rehabilitation care. The move aims to accelerate the Group's strategic expansion in the medical device industry, and to identify, store up and develop high-quality project resources through a professional management organization. Believing that China's medical device industry boasts huge development potentials, the Group takes the medical M&A fund as a vehicle and an opportunity to make use of the resources and channels of external institutions, so as to obtain more high-quality target resources, speed up the development of new business, and facilitate the implementation of its development strategy in medical device sector.



➔ Optimizing strategic deployment in intelligent new energy vehicle industry

Shanghai Electric Hong Kong Co., Ltd., a subsidiary of the Group, as a lead investor, invested RMB500 million in the series A financing of Zhejiang Zero Run Technology Co., Ltd. (浙江零跑科技有限公司). As China is developing from "a major automobile country into an automobile power", accompanied by the rapid popularity of new energy vehicles, the new energy vehicle industry is embracing huge business opportunities. As such, the investment will be conducive to leveraging the advantages of Shanghai Electric in the manufacturing sector to tap into the intelligent new energy vehicle industry, helping the Group to promote intra-group business collaboration and further improve its strategic development in the intelligent new energy vehicle industry.

➔ Acquisition of a global leading producer of industrial rayon

BMC Europe Fund I, in which Shanghai Electric Finance Group participated as a cornerstone investor, completed its first investment with the acquisition of 100% stake in Germany-based Cordenka, the world's leading producer of industrial rayon, at the consideration of Euro 240 million. The acquisition is of significance to China's introduction of high-end manufacturing technologies and bridging the gaps of relevant technologies and products, and will help China's automobile tire manufacturers to enter the global high-end market and the supply chain system of the world's top automobile manufacturers. In addition, the Group will gain better understanding of European and global markets by virtue of the extensive resources and channels of BMC Fund and its partners, and build on the industrial advantages of Shanghai Electric to realize two-wheel drive of domestic and overseas markets and the effective collaboration of finance and industrial operations.

➔ 1.4 Tightening internal control and risk management

Through improvement of our internal control system, we have effectuated oversight over the standardized operation of enterprises at different levels, and developed internal control mechanisms featuring checks and balances. We keep enhancing our internal control system, studying risk trends and preventing operating risks. In addition, a risk management system has been initially established based on the three aspects, namely organizational structure, standards system and practical operation, so as to improve risk management in an all-round way. Beginning with the compilation of customized internal control manuals and self-assessment of the effectiveness of internal control, we developed internal control manuals step by step and effectively enhanced self-assessment. We innovated internal control principles and methods from four aspects, i.e. publicity and guidance, early intervention, capability building, online operation.

➔ Improving risk management and internal control systems on a continuing basis

Drawing on international advanced theories on risk management and internal control, we have optimized our risk management and internal control management framework from the four dimensions of objectives, subjects, procedures and guarantee according to our specific conditions. We improved the three defense lines of risk management and internal control and established a complete and independent organizational structure for risk management and internal control and communication and reporting channels, further improving the organizational structure and functional allocation of risk management and internal control and defining the responsibilities of and work division among decision makers, management and the teams responsible for the three defense lines.



➔ Launching integrated legal affairs management

In recent years, with the continuous expansion of the Group's business, we are facing increased risks associated with our new models and new market areas, which puts forward new requirements for our legal work. The Group has initiated an integrated approach for legal affairs management in an effort to proactively prevent and control the legal risks associated with business operations, promote legal compliance and improve management standard, thereby making law-abiding capacity a core competitiveness of the Group. Through this approach, the Group pooled its legal resources at all levels and developed a sound work system covering every aspect of the Group for managing legal affairs, effectively enhancing risk prevention.

➔ Improving risk management and internal control practices

We have developed standardized risk maps and internal control manuals by taking into full consideration the characteristics of enterprises in different industries and at different stages of development, and promoted customized risk distribution thermodynamic diagrams and internal control manuals of enterprises, thereby further enhancing the accuracy and effectiveness of risk management and internal control efforts. Meanwhile, with a focus on improving internal rules and regulations and business processes, we further strengthened internal control and provided a sound system and process guarantee for preventing risks and improving performance.

In the face of new trends and changes such as increasing merger and acquisition activities, diversified project transaction structures, prominent capital-driven factors, and reforms placing more emphasis on revitalizing existing assets, we focused on managing investment and operating risks, and regularly assessed and coped with the risks of key businesses and key areas so as to better assess and get early warning on significant risks. Further, we identified and sorted out major risks associated with our current business operations and conducted in-depth special studies and program design, thereby optimizing prevention and control of investment and operating risks.

We actively explored new methods and strategies for risk management and strengthened regulatory compliance. We compiled and released the first edition of "The Negative List of Management and Control Practices of Shanghai Electric Group (上海電氣集團管控負面清單)", strengthened the implementation of laws and regulations and internal rules and continuously improved the responsibility and accountability mechanisms, thereby promoting the sustained and healthy development of the Company.

➔ Setting up risk management department

In order to further optimize risk prevention and control and internal control system, the Group established a risk management department in May 2018 to be mainly responsible for the reform of management system, ensuring precise and effective efforts in "delegating powers, improving management and optimizing services", balancing responsibilities, powers and interests, and managing investment and operating risks. Through the reforms to "delegate powers, improve management and optimize services", the Group focused on top-level design, optimized management and control approach, and straightened out upper-and-lower-level management relationships, thereby ensuring effective management, full delegation and quality services. As a result, the Group's management systems become more workable, management relationships more scientific and efficient, and management measures more practical and effective.

➔ 1.5 Standardizing information disclosure to safeguard shareholders' rights and interests

Shanghai Electric has strictly complied with the Articles of Association of Shanghai Electric Group Company Limited and the Information Disclosure Management System formulated by the Company according to applicable laws and regulations and the requirements of the listing rules in Hong Kong and Shanghai to ensure timely, true, accurate, complete and effective information disclosure.

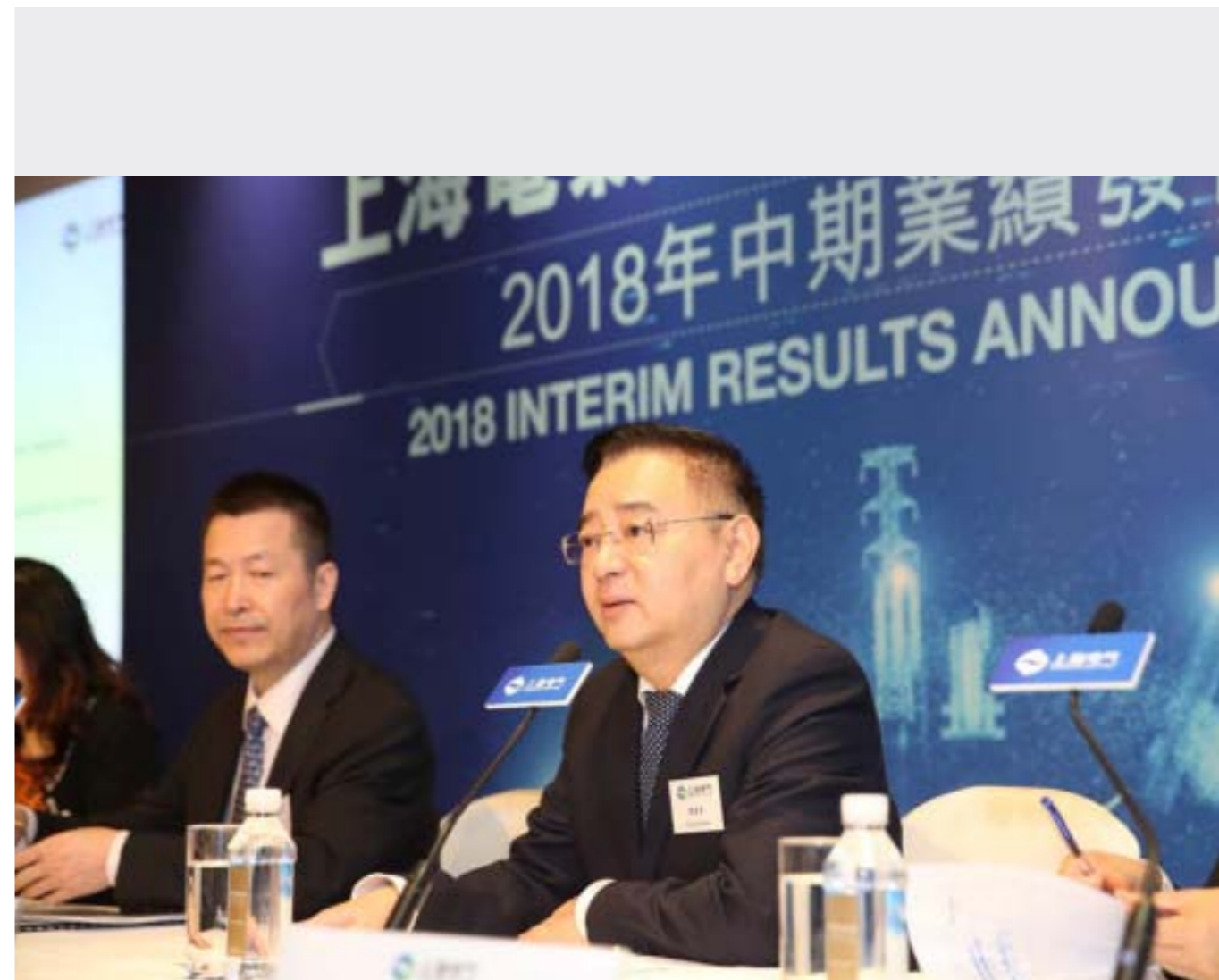
As an advocate for rules-abiding operation, the office of the secretary to the Board actively provides advice and suggestions for major decisions of the Company to ensure that the formulation and adoption of major decisions of the Company are lawful and valid. In 2018, the Company made 225 A-share announcements (including four periodic reports), and 190 H-share announcements (including four periodic reports). We have improved the structure of regular annual reports to highlight key information that is of concern to investors, meet the diversified needs of institutional investors, and further improve the effectiveness and pertinence of the information disclosed in regular reports.

Sound investor relations management can facilitate the improvement of corporate governance structure, improve the value of a listed company, and ensure the long-term and stable development of the Company. We have always advocated the philosophy of "respecting and rewarding investors" and adhered to the principle of maintaining active, positive, sufficient and continuous communication and exchange with investors. The Company has created a good atmosphere for investor relations management and has sound management rules and procedures in place. From the Chairman of the Board to the heads of the plant workshops, all participate in investor relations management activities to varying degrees. The Company has established good channels for managing investor relations, and maintained communication with investors through telephone, SSE e-Interaction, information announcement, special meetings, one-on-one meetings, on-site visits, financial results briefings and other means.

In 2018, the Company held a number of roadshows in Hong Kong, the United States, Canada, Japan and Europe, organized 57 investor research meetings and five factory visits for investors, attended 12 investor summits organized by international and domestic well-known investment banks and securities dealers, gave replies to nearly 60 questions on the SSE e-Interaction online platform, and answered 150 hotline calls from investors. The Company is strengthening communication with shareholders through more efficient and extensive channels to enhance their understanding and recognition of Shanghai Electric in a lawful way.

➔ Minority shareholders visiting Shanghai Electric

During the event themed "I am a shareholder -- small and medium investors visit listed companies", 20 small and medium investors from Shanghai Securities visited Shanghai Electric for the first time and had an exchange meeting with the Company's management. The event was conducive to enhancing investors' awareness of their rights as shareholders, and also enabled Shanghai Electric to better understand the demand of investors and their suggestions and expectations for Shanghai Electric. At the meeting, Shanghai Electric gave a general introduction on the developments of its business operations, key business areas and future development direction. During the exchange session, investors had in-depth discussions and exchanges with the Company's management in respect of Shanghai Electric's future growth momentum, development trend of coal-fired power generation, production research and development, corporate strategies and other issues. The Company's management gave specific responses to the concerns of investors. After the meeting, many investors said that the event not only provided a "face-to-face" communication platform for small and medium investors and senior management, but also enabled minority shareholders to gain a more intuitive understanding of Shanghai Electric.



➔ Capital markets expecting highly of Shanghai Electric

On 3 April 2018, the 2017 annual results press conference was held simultaneously in Shanghai and Hong Kong. At the conference, Zheng Jianhua, Secretary of the Party Committee and Chairman of the Board, exchanged views with domestic and overseas analysts and investors on the current developments and prospects of Shanghai Electric.

At the briefing session, Zheng Jianhua gave responses to the key concerns of the investors. He said that under the grim internal and external conditions, Shanghai Electric deepened reforms, accelerated innovation and thus maintained its development momentum, with some key financial indicators being better than those of its competitors. Zheng Jianhua also made it clear to the analysts at the conference about Shanghai Electric's determination to embark on a new journey of development. Shanghai Electric will make breakthroughs and innovations in development initiatives and paths, management and control methods and operation models; with a focus on exogenous development supplemented by endogenous development, it will place more emphasis on the quality and efficiency of scientific and technological innovation, and continue to concentrate its research and development resources on key fields.

In a talk about the development direction of Shanghai Electric in 2018, Zheng Jianhua pointed out that Shanghai Electric would: pursue reforms with strong determination and a renewed vigor and sense of urgency, continue to focus on advantageous businesses, optimize existing businesses and vigorously develop emerging businesses; follow the guideline of marketization, professionalization and internationalization, advance innovation-driven development and speed up thorough transformation, upgrading and development to catch up with internationally leading players; speed up adjustment of industrial structure, development of global presence and multinational operations as well as the reform of and innovation in systems and mechanisms so as to join the global "first echelon" enterprises at the soonest; initiate a new round of great leap-forward development to make it a respected enterprise with strong competitiveness and profitability and constantly strive for an early realization of the "Electric Dream".

Value Innovation | Rewarding Shareholders

Shanghai Electric strives to generate fair returns for shareholders while ensuring the stability and continuity of investment returns. According to the Company Law of the People's Republic of China, the Securities Law of the People's Republic of China and other relevant laws and regulations, as well as the Articles of Association of Shanghai Electric Group Company Limited, Shanghai Electric gives priority to cash dividends as a profit distribution method and specifies the payout ratio, i.e. the accumulated profits distributed in cash for the last three years shall in principle be not less than 30% of the average annual distributable profits realized in the last three years. In 2018, following the completion of the Company's previous two major asset reorganizations, the 2017 profit distribution plan of Shanghai Electric was tabled at the shareholders' general meeting held on 29 June 2018, and was considered and approved at the meeting. As of 2018, we had distributed cumulative dividends totaling RMB7,214 million to our shareholders.



➔ 2.1 Safeguarding customers' rights and interests to enhance their confidence in us

We devote ourselves to the research and development of products and keep our quality commitment. We strictly abide by the Law of the People's Republic of China on Product Quality, the Product Quality Safety Law of the People's Republic of China, the Regulation on the Administration of Production Licenses for Industrial Products and other laws and regulations, continue to improve the rules of the Group and enterprises and technical specifications corresponding to relevant laws and regulations, so as to establish a systematized quality supervision system with scientific authority and flexibility to meet needs.

We recognize that quality is a core element that determines the height of the equipment manufacturing industry. Therefore, we increase the quality level of our products, projects and services through technological upgrading; put into practice the principle of "green manufacturing for green environment" by revising our technology roadmap; and provide positive energy for sustainable development of the city by focusing on efficiency. We believe that quality derives from awareness and is dependent on technology, management and craftsmanship. Benefiting from our adherence to cultural guidance and problem orientation as well as centering on "customers, suppliers and construction sites" in carrying out various work, we have developed a sound working atmosphere and mechanism over the years. In recent years, Shanghai Electric has gradually formulated a series of quality management system and regulations at the group level, including Shanghai Electric Regulations on Quality Works (上海電氣質量工作規範) under the supervision of the national laws and regulations and by further strengthening the supervision and management of enterprise product quality, improving product quality, specifying responsibility for product quality, further reforming and improving supervision and inspection system, we have formulated a supervision and inspection system which takes supervision and inspection as the main manner and combines daily inspection, rectification review, specific projects inspection to its effect. In addition, the idea of quality risk management is also being continuously strengthened, and institutionalization and normalization works on risk monitoring, assessment, warning and disposal is being gradually promoted. Customer resources are vital for the Company's development. In this regard, all staff members at Shanghai Electric firmly adhere to professional ethics by keeping all customer information confidential to avoid the leakage of customer information and to keep these information safe.

In 2018, no products sold or delivered were recalled for safety or health issues.

📌 Highlights of quality management

Continue to refine quality management: objectives and indicators were set at the beginning of the year; data input and output were standardized; Monthly Quality Report is released on monthly basis and Report on Management is released on a quarterly basis beginning from the second half of the year.

Remarkable progress in solidifying the foundation for quality management by eliminating “common issues” and “repeatedly encountered issues”: quality improvement programs have been developed by certain enterprises of the business groups such as the Power Generation Group.

Making Shanghai Electric a famous manufacturing brand by striving for perfection and pursuing management excellence: By releasing the Collection of Quality Management Cases of Shanghai Electric (上海電氣質量管理案例集) and holding three public lectures on management improvement, including the Active Strategy Transformation and Constant Management Improvement (戰略的主動轉型和管理的精益求精), Benchmarking Against First-class Enterprises and Continue to Improve Management Efficiency and Operating Efficiency (對標一流, 持續改善經營效益和運營效率) and the Win-win Management Model of Integrating Employees' Value Realization and Customer Value Creation (“人單合一雙贏” 的管理模式), Shanghai Electric called for greater efforts by various departments in handling the main tasks of the year, to benchmark against enterprises better than us and implement exemplary projects and work of excellent quality.

Carrying out customer quality visit: according to the feedback from the customers and the operation of the units, the Company carried out quality visit on the key customers of Shanghai Electric, listened to customers' requirement and evaluated the operation of units to provide further service and quality improvement so as to improve customers' satisfaction on an ongoing basis.



📌 Taking customer complaints seriously

We attach great importance to the handling of customer complaints. We have arranged dedicated person to handle customer complaints, who are responsible for compiling customer complaint handling records to record the complaints in detail and making satisfactory response to customers in a timely manner. They are also responsible for investigation, analysis and handling of the complaints and recording the information on the relevant batches of products in question. The handling of complaints is led by the quality control department and supported by relevant functional departments in order to give reply to customers within the prescribed time frame and properly resolve the matter. To ensure high satisfaction of our customers, remedial and prevention measures are implemented at the same time. We promise that all customer complaints will be responded to and handled properly.

Number of complaints received by key business groups in 2018

Business groups	Number of complaints received	Number of complaints handled	Complaint response rate
Power Generation Group	1	1	100%
Nuclear Power Group	0	0	100%
Wind Power Group	0	0	100%

📌 Satisfaction survey

The results of customer sampling survey on 300MW, 600MW and 1,000MW upgraded coal-fired generating units of the Power Generation Group showed that: the products of the Power Generation Group can basically satisfy the current needs of customers in terms of functionality and performance adaptability, safety and quality stability; the Power Generation Group has established a good brand reputation to the satisfaction of customers, with customers' high loyalty reaching 48.6% and general loyalty reaching 48.6% and customer satisfaction index reaching 91.51, making its products the first choice for domestic customers.

In 2018, the overall customer satisfaction evaluation of the Wind Power Group was 84.56, the customers' expectation for the Wind Power Group was 92.28 and the customers' perceptual evaluation of its product and service quality was 85.67. The primary reason that the interviewees choose the products of Shanghai Electric Wind Power Group is “price competitiveness”, followed by “product technology capability”, “speed of research and development of new products”, “timeliness of service response” and “product quality”.

Shanghai Mitsubishi Elevator emphasizes on integrity-based and lawful operation, and regards integrity-based operation as the most basic form of fulfilling social responsibilities. As at 2018, the company has been honored among “Contract Abiding & Trustworthy Enterprises (守合同重信用企業)” for 15 consecutive years. Meanwhile, the company respects the property rights of the customers and relevant parties, as evidenced by the non-occurrence of any cases involving damages to the property rights of customers and relevant parties by the Company in 2018. Shanghai Mitsubishi Elevator has been engaging third party to carry out an annual customer satisfaction evaluation since 1997. The satisfaction evaluation result for 2018 was 84.27, up by 2.07.

📌 Improving various mechanisms to raise customer satisfaction

Customer file management

Automation D&R Institute Co., Ltd makes “high-quality services” a reality by creating customer management files and improving customer feedback mechanism, complaint handling mechanism and rapid response mechanism. In handling the after-sales problem, the company, in adherence to the principle of customer first, continues to improve the aforesaid three mechanisms while establishing the customer file management system, thus making rapid response.

Customer information protection

Service and spare part cooperation agreements have been entered into with various domestic customers after negotiation. The company provides services to customers through a variety of new and flexible approaches including direct supply and service cooperation. The customer information protection system has been established, which enables the company to reinforce its relationship with customers.

➔ 2.2 Providing high-quality services to gain more trust from customers

Attitude determines altitude and service creates value. Shanghai Electric is working to facilitate the effective integration between the manufacturing sector and the service sector, and the development of these two sectors has showed a trend of integration, interaction and interdependency. Service-oriented manufacturing, a key driver for industrial upgrading of Shanghai Electric, is also a crucial means for Shanghai Electric to enhance its core competitiveness.

➔ Gaining trust from customers through provision of high-quality services

On 28 October, SEPG Service Co., Ltd received a letter of appreciation from Huaneng Shandong Ruyi (Pakistan) Energy Limited, in which gratitude was extended to our service staff in Pakistan for rapidly solving the problem of abrupt shaft vibration of power generating units in Sahiwal, providing strong support for the safe and efficient operation of the units.

On 13 October (local time in Pakistan), after receiving the emergency information of malfunction of the units in Sahiwal, the overseas sales personnel of SEPG Service Co., Ltd stationed in Pakistan arrived at the site immediately and found that this was the first overhaul (Level C) for the units of this project. Abnormal vibration of bearing liners of generators was found in both No. 1 and No. 2 units due to multiple factors and the vibration of No. 7 bearing of the No. 1 unit exceeded the threshold value for manual trip, posing substantial risks to the safe operation and the service life of the units. In view of this, our service staff promptly contacted our domestic staff. By overcoming difficulties such as time difference, the repair team only spent 303 hours (including collecting information on the site units, drafting materials overnight, discussing repair plan and dispatching domestic experts to participate in the repair) in successfully handling this emergency case, which was approximately 50% less than the time required for normal repair cycle and was highly appreciated by the owner.

➔ Overcoming difficulties through collaboration

The No. 2 unit of the 660MW ultra-supercritical power generation units at the first phase project of Huadian Jiangling Power Generation Company (華電江陵電廠) was successfully put into commercial operation. The project owner sent a letter of appreciation to Shanghai Turbine Works Co., Ltd and Shanghai Generator Works to extend its gratitude to site worker representatives of Power Generation Group for their high-quality services. The letter read that the worker representatives from Shanghai Turbine Works Co., Ltd and Shanghai Generator Works overcame various difficulties such as tight project schedule, arduous tasks and heavy workload, resolved various technological problems in a timely and effective manner and successfully completed the installation and commissioning of turbine and generator equipment with exquisite technologies and strong sense of responsibility since the commencement of construction, making contributions to the accomplishment of the goal of high standard and high quality operation of the two facilities during the year.

➔ Shanghai Mitsubishi becoming excellent partner of Evergrande

At the 2018 Strategic Partner-Management Summit of Evergrande, Shanghai Mitsubishi Elevator received the Excellent Strategic Partner Award (“卓越戰略合作夥伴”), the only elevator supplier being awarded this award.

Shanghai Mitsubishi Elevator is one of the most important elevator suppliers of Evergrande Real Estate. Both parties commenced strategic cooperation in 2010, which evolved into large-scale supply in 2011. Since then, the annual business volume between the two parties has steadily increased. Currently, Shanghai Mitsubishi Elevator has become a major elevator supplier of Evergrande across the country.

➔ Wuxi Turbine Blades becoming preferred supplier of Siemens

On 19 April, Wuxi Turbine Blades entered into the framework procurement agreement with Siemens China in respect of the localization project, which meant Wuxi Turbine Blades would become the preferred supplier of Siemens in China in respect of the localization project during the effective period of the agreement. As Siemens's strategic cooperative partner for many years, Wuxi Turbine Blades became the preferred and only supplier of turbine blades for the localization project of Siemens China by leveraging stable product quality, rapid delivery cycle and good communication. A supplemental agreement was also signed by both parties for the purpose of procurement of square steel blades and hollow stationary blades for turbines from Wuxi Turbine Blades. As the localization project has a relatively short delivery cycle, Wuxi Turbine Blades guaranteed making rapid response and timely delivery with guaranteed quality and quantity.



➔ 2.3 Pursuing innovative development to exceed customers' expectations

We know very well that innovation is the best gift to give back to customers. We insist on innovation and creation, sustainable development, and the social responsibility concept of cooperation and win-win, and maintain sustained R&D investment through technological innovation and domestic and international cooperation as well as introduction and training of high-end talents. We constantly carry out innovation and creation to bring flow of surprises to our customers.

Intellectual property rights

In 2018, the Company applied for 841 patents (including 415 invention patents), of which 435 were awarded. As at the end of 2018, the Company had 4,499 valid patents.

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 Enterprise Intellectual Property Management Regulations, the Guidelines for the Management of Intellectual Property Rights of Industrial Enterprises and related laws and regulations, we have prepared the Intellectual Property Management system of Shanghai Electric Group Company Limited based on the actual conditions and development needs in order to promote the technological progress of the Group, encourage technological innovation, enhance market competitiveness, strengthen intellectual property management, and prevent the loss of intangible assets. We have taken effective intellectual property management measures and means to protect our intellectual property rights from being infringed while avoiding infringement on the intellectual property rights of others.

Publication of the plan on a new round of scientific and technological development

According to the strategic layout of the Group, this round of plan focuses on four technical fields and nine technical directions. On the basis of clarifying the technical development goals and development paths, the Group has proactively built an open technological innovation system with clear internal division of labour and mutual cooperation so as to support industrial development planning and solve the problem of technology source.

The new edition of Science and Technology Development Plan sets out the clear scientific and technological development goal of Shanghai Electric to gradually develop Shanghai Electric into a technology-leading international equipment manufacturing group through three major transformations, i.e. transformation from a technology follower to a technology leader, transformation from focus on introduction to diversification, and transformation from local development to the global layout.



➔ Progress of major science and technology projects in 2018



Energy equipment field

In the field of green coal-fired power generation technology, the world's first ultra-supercritical generating unit equipped with double engine regeneration system designed and manufactured by the Company, passed the 168-hour trial commissioning successfully in Lufeng Jiahuwan Power Plant in Guangdong and officially commenced commercial operation. The thermal economy of such generating unit has met up to the best level of single reheat generating unit and its heat consumption rate approximated to that of the second-reheat generating unit and reached the worldwide advanced level.

In respect of nuclear power equipment technology, Shanghai Electric delivered the reactor vessel internals for the world's first "Hualong One" reactor, the 200MW CRDM and absorption sphere of high temperature gas-cooled reactor, as well as rolling out China's first thorium molten salt reactor product. Meanwhile, we also carried out design and development of the conveyance, elevator and passive control rod of sodium-cooled fast reactor, as well as technology research and development on the transmutation of the world's first accelerator driven system and lead-cooled fast reactor.

In the field of gas turbine technology, the Company's Ansaldo 9E-series gas turbine project, the first one in the PRC, passed the 96-hour trial commissioning successfully and entered into the stage of commercial operation officially. Henceforth, three types of Ansaldo gas turbine products of the Company including the 9F and 6F series were put into operation within the same year.

As for comprehensive energy utilization, the "Internet Plus" smart energy demonstration project system in Sanxing Town of Chongming in Shanghai Municipality undertaken by the Company completed commissioning and was transferred to its owner. The system materialized the idea of "generation, grid, load and energy storage" integration and thereby enabled the reciprocal support among wind and solar power generation and energy storage, uniform management of on-grid and off-grid systems and flexible transaction on the basis of green energy.

Intelligent manufacturing field

In the field of intelligent manufacturing, the Company has completed the project development for the "research and application of the kernel technology concerning intelligent manufacturing of elevator tractor (電梯曳引機智能製造核心技術的研究與應用)", made technological breakthroughs in respect of the technologies regarding heavy-duty robot application, robot high-precision assembly, flexible production and automatic debugging as well as in intelligent warehousing and logistics and simultaneous assembly of multiple robots, resulting in a decrease of 30% in production costs and an increase of 130% in per capita production capacity, and managed to apply such technologies in the elevator tractor production line, which was the first in the industry.

In addition, the Company completed the Three-Year Action Plan on Intelligent Manufacturing of Shanghai Electric, which contains nine application demonstrations in terms of smart factory, intelligent operation and maintenance, and industrial/energy internet and determines the construction of the intelligent manufacturing ecology of Shanghai Electric to form the external output capability in an orderly manner and clarify and promote a group of intelligent manufacturing demonstration projects.



Industrial equipment field

In the field of elevators, the Company continued the R&D of kernel technology and key components of high-speed elevator and completed the R&D work for kernel technologies concerning HP synchronous gearless PM tractor and drive-control system development and vibrating noise control technology for high-speed elevators with 10m/s or higher speed, having laid a solid foundation for the development of the 10m/s high-speed elevator machine to be initiated in 2019. In addition, in order to cater to the new popular targets in the market such as household elevators, elevator installation in existing buildings and retrofit and renovation of elevators in use, the Company completed the corresponding product development and relevant solutions.

High-end medical equipment field

In the field of rehabilitation robots, Shanghai Electric registered and established Shanghai Electric Intelligent Rehabilitation Medical Technology Co., Ltd. (上海電氣智能康復醫療科技有限公司), which launched two rehabilitation robot products, i.e. NaturaGait and FLEXO-Arml, and completed type approval in accordance with the standards of class II medical devices. The products have been issued the registration test reports and officially entered the clinical verification stage. In the field of surgical robots, Shanghai Electric completed the functional development, system integration and prototype development of the orthopedic surgery robot products for joint replacement, carried out model test, and completed CFDA inspection, laying a foundation necessary for the registration test and clinical trial of the products in the next year.

Environmental protection field

In the field of environmental protection, the water treatment project in Chenguang Village, Chenjia Town as undertaken by Shanghai Electric has realized the full collection and full treatment of the domestic sewage of the surrounding 300 rural households through the distributed, modularized and intelligent domestic sewage treatment devices. The project is characterized by high activity, impact resistance, up-to-standard phosphorus content, low energy consumption, self-digestion and long life. At present, the rural domestic sewage treatment facilities in four towns of Chongming district are under intensive construction. Upon completion, there will be more than 200 new rural domestic sewage treatment plants, which will serve nearly 40,000 households.

Delivery of the reactor vessel internals for the world's first "Hualong One" reactor

On 10 April, the reactor vessel internals for Fuqing unit 5 as the main equipment of the nuclear island of the world's first "Hualong One" nuclear power unit as developed and designed by Nuclear Power Institute of China and manufactured by Shanghai No.1 Machine Tool Works Co., Ltd. were delivered from Shanghai No.1 Machine Tool Works Co., Ltd. The successful development of the equipment marks the upgrading of Shanghai Electric's nuclear power equipment manufacturing capability to a new level.

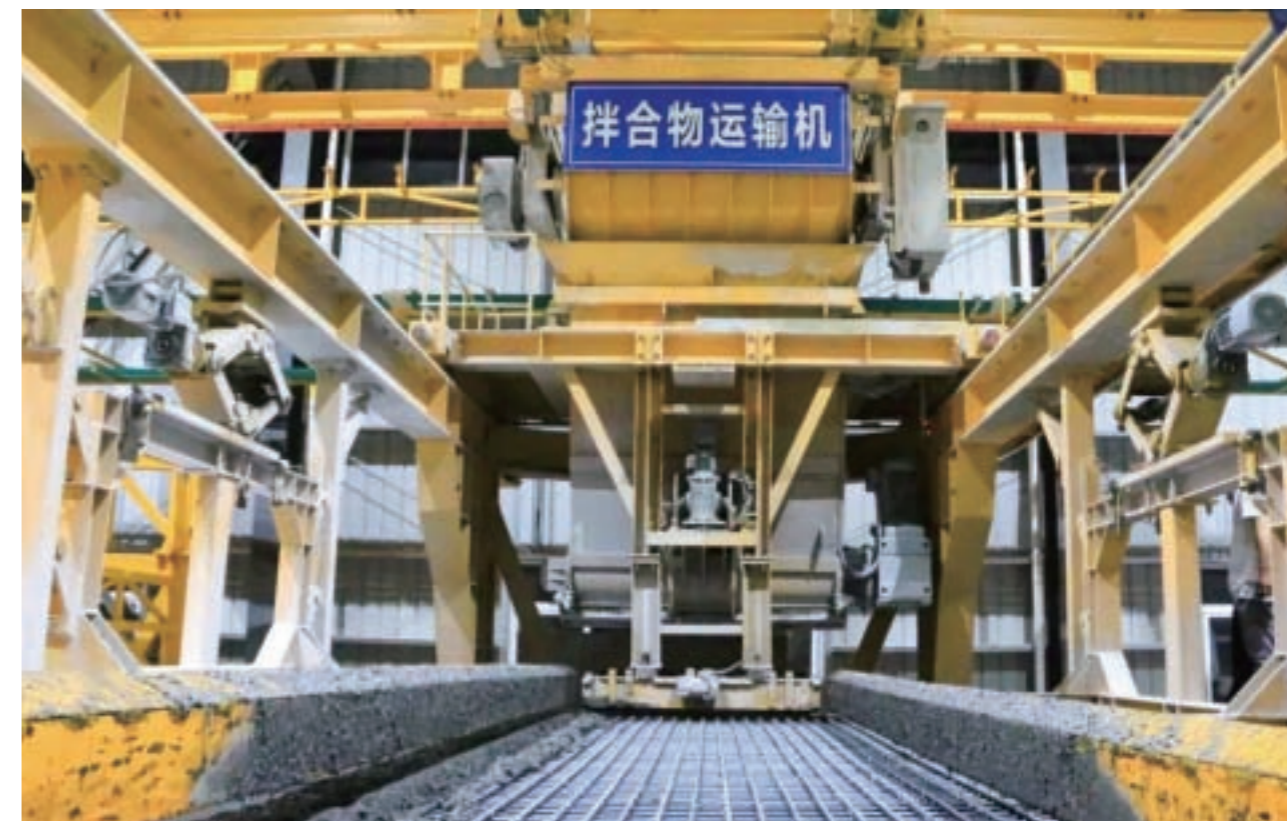
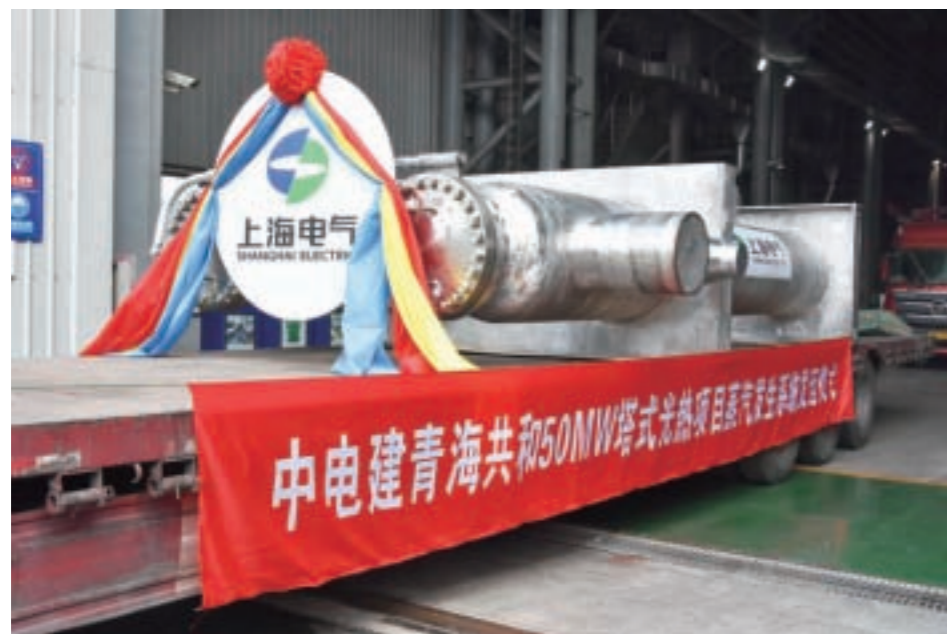
"Hualong One" is the third-generation nuclear power technology with independent intellectual property rights independently developed by China. The reactor vessel internals represent the core "keel" equipment of nuclear reactor and consist of 13,487 parts and components of 236 categories. The reactor vessel internals are up to 11.036m with the largest diameter of 4.148m and a weight of about 160t. They are designed according to the highest standards in the world and the structural accuracy requirements and manufacturing complexity far exceed the modified second generation reactor vessel internals. The key technologies include precision machining, welding, inspection and assembly and represent the highest R&D and manufacturing level of main equipment for nuclear island of China's third-generation nuclear power technology.



Independent research and development of the first master equipment for solar thermal steam generation system

On 30 November, the master equipment for the steam generation system of the 50MW tower solar thermal project in Gonghe, Qinghai as independently developed by Shanghai Electric was delivered to Hainan Prefecture Ecological Solar Power Park. This is the first project of complete set supply contract in relation to the solar thermal steam generation system undertaken by the Group.

The 50MW tower solar thermal project in Gonghe, Qinghai is one of the first 20 solar thermal power generation demonstration projects in China. The Group provides master equipment as well as auxiliary piping, valves and instruments for the steam generation system.



Shanghai Electric Matechstone developing the world's first automatic production line of bridge decks

The first piece of new concrete bridge deck has been successfully prefabricated for Nanjing Yangtze River 5th Bridge. The equipment of the production line producing such bridge decks was developed by Shanghai Electric Matechstone (Xuzhou) Heavy Industry Technology Co., Ltd. (上海電氣研砢(徐州)重工科技有限公司), a company invested by Shanghai Electric. It is the world's first automatic assembly line for coarse aggregate active powder concrete bridge deck. The production line equipment is essentially different from the conventional equipment and can complete the pavement of high strength concrete for 7m x 11m bridge deck in 45 minutes. The concrete used was made with the new generation of cement-based materials, featured by high strength, high ductility and high durability and excellent mechanical properties.

Rolling out the world's longest wind turbine fiberglass blade

The offshore wind turbine blade S84 independently developed by Shanghai Electric passed the full-size static test. The blade is 84 meters long and is the longest wind turbine fiberglass blade in the world. The blade is tailored by the Group for China's offshore low wind speed zone. The blade design is intricate and the unit matching requirements are high. The design team conducted systematic analysis, repeated argumentation and bold innovation, used three-dimensional flow field simulation, multi-objective optimization, integrated machine optimization design and other technologies in the blade design, and overcame a series of technical problems, which successfully promoted technical cooperation in respect of the industry chain of the domestic large-scale offshore blades.



Pingshan project winning a major award, demonstrating strong competitiveness of our power generation equipment

At the opening keynote session of the Power-Gen International held in Orlando, the United States, the Pingshan power plant phase II project was awarded the fifth Peabody Global Clean Coal Leadership Award and was the only Chinese enterprise receiving this award.

Shenergy's Pingshan power plant phase II project, located in Anhui and still under construction, adopts the "new generation technology" that can realize expected standard coal consumption of 251g/kWh for power supply, and the 1,350MW second reheat ultra-supercritical coal-fired power generation unit applies the world's first new technology using high-low arrangement of dual-axis steam turbine generator sets, which greatly reduces investment in pipeline and pressure and heat loss, thereby improving heating up efficiency and cost-benefit ratio. The unit is expected to become the most efficient coal-fired power generation unit in the world.



Providing Decent Work Environment Supporting the Self-fulfillment of Employees

We have always highly valued employee development. We promoted a "people-oriented" modern management system, and created a favorable environment that enables employees to fulfill their potentials and maximize their personal value. We also endeavored to improve the system for personal growth and development of employees, provide protection and create conditions for employees in efforts to unite the Group and all employees and form a community of shared future, undertakings and interests.



➡ 3.1 Complying with employment regulations and sharing development results with employees

From the perspective of strategic development, we are fully aware of the importance of protecting the rights and interests of employees, and strive to protect the rights and interests of employees in an in-depth, meticulous and pragmatic way with a keen sense of responsibility and mission. In line with the national and local laws and regulations including the Labour Contract Law of the People's Republic of China, the Convention concerning Discrimination in respect of Employment and Occupation, the Provision of the State Council on Working Hours of Workers and Staff and the Regulation on Public Holidays for National Annual Festivals and Memorial Days, we have developed and improved our rules, systems and operating procedures such as the Remuneration Management, the Recruitment Management, the Unified Holiday Management and the Employee Handbook. We place much emphasis on equal employment opportunities, diversity of employment and employment discrimination, and respect employees regardless of their gender, age, nationality, race, disability, religious beliefs, etc. We fully respect the personal dignity of our employees, emphasize humanistic care and positive incentives, take into account employees' personal safety, environmental safety, physical and mental health as well as career development when setting up our long term goals, and encourage our employees to uphold the principle of frankness, faithfully perform their duties and act and work with integrity.

In order to enhance labour protection for female employees and juvenile workers (aged between 16-18 years old) and protect the personal health of such employees, Shanghai Electric formulated the Rules on Labour Protection of Female Employees and Juvenile Employees (女職工勞動保護特別規定) in accordance with the Special Provisions on Labour Protection of Female Employees(女職工勞動保護特別規定), the Labour Protection of Female Employees of Shanghai (上海市女職工勞動保護) and the Provisions on Special Protection of Juvenile Employees (未成年工特殊保護規定), explicitly stipulating that no member enterprise may lay off or dismiss female employees or reduce their wages due to marriage, pregnancy, maternity or breastfeeding; there shall be no discrimination against women in staff grading, promotion and salary adjustment of industrial workers; and member enterprises must comply with the regulations related to labour protection of female employees during their menstruation, pregnancy, maternity and breastfeeding periods and no member enterprise may hire minors under 16 years old. In 2018, the Group had 105 disabled employees in total.

Staff composition by gender

Year	Total employees	Male	Female
2016	29293	23797	5496
2017	29552	23787	5765
2018	30182	24063	6119

Staff composition by age group

Year	Under 20 years old	20-30 years old	30-40 years old	40-50 years old	50-55 years old	55-60 years old
2016	8	7704	8495	6893	3399	2794
2017	8	7774	8570	6955	3430	2815
2018	3	7893	8734	6987	3545	3020

Staff composition by educational background

Year	PhD holders	Master's degree holders	Bachelor's degree holders	College diploma holders	Secondary school graduates and below
2016	147	2249	10400	6546	9951
2017	119	2646	10853	6520	9414
2018	125	2765	11356	6534	9402

Staff composition by function

Year	Management	Production	Sales	R&D	Finance and audit	Administrative & logistics
2016	2036	13768	2636	8495	879	1479
2017	2055	13866	2659	8580	887	1505
2018	2083	13895	2782	9056	903	1463

Employee turnover (% of staff)

Gender		Age				Region	
Male	Female	Under 30 years old	30 to 40 years old	40 to 50 years old	Above 50 years old	Shanghai	Other places
2.2%	0.3%	1.2%	1.0%	0.3%	0	2.5%	0

➔ Promoting Harmonious Labour Relations

Promoting collective wage negotiation

At the collective negotiation meeting, the mechanical and electrical trade union and the administration reached a consensus on the formulation of the 2018 special collective wage contract (draft). We will set up a supervision and inspection mechanism for collective wage negotiations, formulate the Measures for Supervision and Inspection of Collective Wage Negotiations, and jointly supervise some key subsidiaries in carrying out collective negotiations, standardizing procedures for performance, and implementing the terms of collective contracts.

Enhancing democratic management of staff congress

The third session of the 12th staff congress voted and passed documents such as the 2018 Collective Wage Contract and the Reward and Punishment Management Rules, elected a staff representative supervisor, established a joint meeting system for staff congress, provided training for some staff representatives from foreign-controlled joint ventures, and promoted the development of a multi-level staff congress system. In addition, it carried out research on democratic management of factory affairs and democratic review on the performance of duties by cadre.



Improving legal aid services

We expanded and optimized our team of legal volunteers and introduced a "menu" legal service program. A total of 88 non-litigation matters were accepted throughout the year, of which 53 were legal consultations, 3 were inquiry letters, 30 were requests for drafting legal documents, and 2 were non-litigation mediations. We have been prepared for providing legal aid services through our WeChat account, and participated in the review of the reform plans of 22 enterprises giving suggestions according to laws and regulations on matters mainly involving the vital interests of employees and whether the plans had fulfilled democratic procedures. Further, we visited certain subordinate enterprises and provided legal advisory services, guiding them on proper handling of labour relations. We also launched legal publicity activities for migrant workers, and organized the legal publicity team of Shanghai Electric and teachers from the Law School of East China University of Science and Technology to hold legal publicity and consultation activities for 60 migrant workers to enhancing their legal awareness, which was welcomed by migrant workers.

Increasing tangible benefits for all employees

In order to enhance employees' sense of fulfillment and happiness, the Group decided to take practical actions to increase the benefits for employees, including: additional distribution of shared achievement bonus; raising the standard of health food allowances for employees on special posts to not less than twice the standard of Shanghai; raising the standards of allowances for middle and night shifts to not less than twice those of Shanghai; raising the standards for one-off financial subsidy for employees suffering from serious illnesses, whereby employees who participate in the Guarantee Scheme of Shanghai Trade Union Membership Service Card (上海市工會會員服務卡保障計劃) and suffer from any serious illness covered by the guarantee scheme, after receiving a security fund payment from Shanghai Workers' Mutual Insurance Association, will be given aid subsidy by the Mechanical and Electrical Trade Union of Shanghai in a one-to-one proportion; and caring about the health of employees, providing regular health checkups once a year for on-the-job employees.

Promoting the sense of belonging of employees at "going out" enterprises

With the need of industrial transformation and development, Shanghai Electric's subordinate enterprises located in other regions are showing trends of accelerated development. Since 2013, the Group has actively explored how to serve and guide the work of trade unions of enterprises located outside Shanghai, and have built "bridges" among trade unions of enterprises located outside Shanghai, trade union of the parent enterprise and local higher-level trade unions, thereby establishing good communication mechanisms. The Opinions on Strengthening Guidance on Services of Trade Unions of Enterprises Located Outside Shanghai released by the Group clearly defined the mutual relations, responsibilities and work scope of all parties, which helps enhancing non-Shanghai-based employees' sense of recognition and belonging towards Shanghai Electric, as well as their sense of fulfillment.

➔ 3.2 Keeping a close eye on occupational health and employees' wellbeing

We adhere to the principle of "prevention in the first place and integrating prevention with control", strictly abide by the PRC laws and regulations on occupational health, earnestly implement the requirements of the supervisory authorities, and make solid efforts in occupational health management, aiming to provide a safe and healthy working environment for our employees.

➔ Taking multiple measures to cope with occupational health

- ◆ The "Manual of Shanghai Electric on Occupational Health and Safety and Environmental Management" was compiled and completed for the Group and its business groups and production and business units.
- ◆ According to the changes and developments of the laws and regulations on workplace safety, occupational health and environmental protection, we sorted out the existing major laws and regulations on workplace safety, occupational health and environmental protection, and compiled and released the "Guide on Enterprises' Workplace Safety, Occupational Disease Prevention and Environmental Responsibility".
- ◆ At the beginning of 2018, the responsibility system adopted by the Group specifies that there shall be zero occurrence of new occupational disease cases, performance of relevant duties shall be reviewed and assessed at the end of the year, and follow-up inspection shall be made in the process.
- ◆ We developed the standards of occupational safety and made efforts to identify hazard sources, assess risks and take remedial actions, and to implement ABC classification management.
- ◆ We sorted out and classified the occupational hazard factors of each production unit, and urged each production unit to implement the measures for controlling occupational hazards and risks.



➔ Showing genuine care for frontline employees

The management of the Group visited factory workshops to pay respect to the frontline employees working in the high temperature and made arrangements for preventing heatstroke and guarding against floods and typhoons. Zheng Jianhua, Secretary of the Party Committee and Chairman of the Board, pointed out that 100 percent efforts must be made to ensure workplace safety, without any slackness or negligence, and all rules and regulations and safety precautions must be strictly implemented. Especially in high temperature and typhoon seasons, effective measures should be implemented to prevent heatstroke and guard against floods and typhoons to ensure the safety of employees and protect corporate property. He stressed that Party committees, administrative departments/offices and trade unions at all levels should make concerted efforts to put the safety and health of employees in the first place, and create a good working and living environment for employees while pursuing sound development of the enterprises.

➔ 3.3 Enhancing staff trainings to bolster our development capability

Training by gender and levels of employees

	Female			Male		
	Senior-level	Mid-level	Primary-level	Senior-level	Mid-level	Primary-level
Coverage ratio	100%	100%	99.6%	100%	100%	99.6%
Average time (days)	5	6	3.5	5	6	3.5

➔ Adopting special training programs for young employees with high potentials

The Group has launched the "Young Talent Pool" project targeted young employees who have been serving the Group for more than 5 years, aiming to discover and develop talented employees through continuous trainings. The project opens every two years and, through the "GPS" young talent training model, has developed so far more than 200 outstanding young employees who possess professional skills and high potentials. With well-planned, targeted customized training programs, the project serves as the "reserve army" and "reservoir" for developing high-caliber cadre and business elite for the Group.

➔ "Finance Lecture Room" facilitating industrial transformation

By way of inviting experts to give a series of lectures, Shanghai Electric Finance Group helped its employees to gain a better understanding of the internal mechanism of industry development, effectuated the function of finance in promoting industry development, demonstrated the value and contribution of the finance group in centering around, supporting, serving and developing industries, and sorted out and developed financial courses that can be shared with industrial enterprises. With reference to the Group's development needs and in line with the overall strategic objective of promoting the integration of industry and finance, Shanghai Electric Finance Group has developed more than 10 key training courses in finance, leasing, investment, insurance and other sectors, and trained a team of internal trainers.

➔ Launching "Breakthrough & Improvement" program Providing intensive training program for young cadres

The Group organized a 5-day full-time intensive training program for more than 200 young cadres and management personnel. Further, the Group improved its management system for identifying, screening and training young cadres through such measures as establishing competency models, developing competency evaluation standards, designing a training evaluation system, setting up an evaluation team comprised of internal and external individuals, and preparing team/individual evaluation reports.

➔ Optimizing career development channels and qualification evaluation systems for different kinds of talented employees

The Group kept improving the professional development and evaluation systems for technical personnel and skilled personnel, and has defined the following six-level development paths in respect of promotion channels: from top to bottom, technical personnel are graded as senior experts, experts, team leaders, talented cadres, core personnel and reserve officers; and skilled personnel are graded as skill masters, senior craftsmen, craftsmen, reserve craftsmen, senior technicians and skilled workers. Further, for qualifications, key performance indicators are developed as the fundamental basis for professional level evaluation; for evaluation, competency, professionalism and performance are taken into account; and for training, training certification programs are adopted for different levels and channels.

➔ A new army of fresh graduates joining Shanghai Electric Family

The 2018 new employee induction and training opening ceremony of Shanghai Electric themed "Setting sail on a NEW journey with Shanghai Electric" was held at the Lingang campus of Shanghai Dianji University. In 2018, Shanghai Electric hired 667 new employees, of whom 51.3% were born post-1995, representing a majority of the new employees; 72% graduated from "985 Project" or "211 Project" universities; and 38% held master's or higher degrees.



➔ 3.4 Holding activities for employees and their families to enhance our ability to unite

It is impossible to have development without employees' contribution and participation, their exploration and creation, their passion and wisdom, as well as their concerted efforts. Together with our employees, we will create a bright future.

➔ Adopting special training programs for young employees with high potentials

The Group has launched the "Young Talent Pool" project targeted young employees who have been serving the Group for more than 5 years, aiming to discover and develop talented employees through continuous trainings. The project opens every two years and, through the "GPS" young talent training model, has developed so far more than 200 outstanding young employees who possess professional skills and high potentials. With well-planned, targeted customized training programs, the project serves as the "reserve army" and "reservoir" for developing high-caliber cadre and business elite for the Group.



➔ Families of technologists exploring equipment manufacturing sites

In order to show respect for craftsmen and express gratitude to technologists' family members who shoulder their family burden, the families of 13 chief technologists were invited to explore the advanced equipment of significance to the country, and visit the working environment of their family members at the "Family Day of Chief Technologists" event. For most of the families, this was their first visit to the factory. They visited the orderly and spectacular modern production sites, such as steam turbine, gas turbine and blade workshops, and listened to the commentator's introduction of the 65-year long glorious history of the factory, which made them feel proud and honored.



➔ Learning how to make moon-shaped fans

For the purpose of creating the warm atmosphere of traditional Chinese festivals for employees, Shanghai Generator Works specially invited a flower artist to teach employees how to make moon-shaped fans. Under the guidance of the artist, everyone made a beautiful "artwork" and couldn't wait to show off on their Wechat Moments.



➔ Holding team building activities for young employees

The team building activities held for young employees themed "Chasing the Dream of Youth, Building Electric Dream Together" not only strengthened the communication between young employees working at different enterprises and created a good interactive atmosphere, but also enhance their execution, cohesion and sense of responsibility.



IV Collaborating with partners to seek win-win outcomes

In the face of the fierce market environment, we joined hands with business partners, competitors, suppliers and media agencies to carry out all-round communication, exchanges and cooperation between governments and enterprises, among enterprises, and among enterprises, universities and research institutes, and establish a shared mechanism platform to leverage each other's advantages and realize mutual benefits and common development.

➔ 4.1 Pursuing strategic cooperation to achieve mutual benefits and win-win results

We further strengthened exchange and sharing of resources with external enterprises and scientific research institutes in efforts to integrate innovative elements such as global talent, capital, information and technology, and draw on the wisdom of various parties, so as to enhance the Group's technological advantages and core competitiveness and share technological advancement and industry development achievements.

➔ Xi Jinping and Pedro Sanchez witnessing four big corporations joined hands to develop Dubai mega project

In the presence of Chinese President Xi Jinping and Spanish Prime Minister Pedro Sanchez, Shanghai Electric, Industrial and Commercial Bank of China, Saudi ACWA Power and Spanish energy company Abengoa entered into a quadripartite cooperation agreement. Pursuant to the agreement, the four parties will work together on the 950MW CSP+PV solar power project in Dubai, and to collectively pursue future opportunities in third-party power generation markets including the Middle East. The project is an expansion built on the 700MW CSP power plant EPC project undertaken by Shanghai Electric in April 2018 by adding 250MW PV installed capacity, and is the first project that integrates CSP and PV power generation to provide 24-hour uninterrupted power generation at low cost. The project marks the first successful cooperation of four parties under the "Belt and Road" initiative. Shanghai Electric is the general contractor of the project.

➔ Li Keqiang and Edouard Philippe witnessing the signing ceremony of China-France cooperation agreement on key components of nuclear power equipment

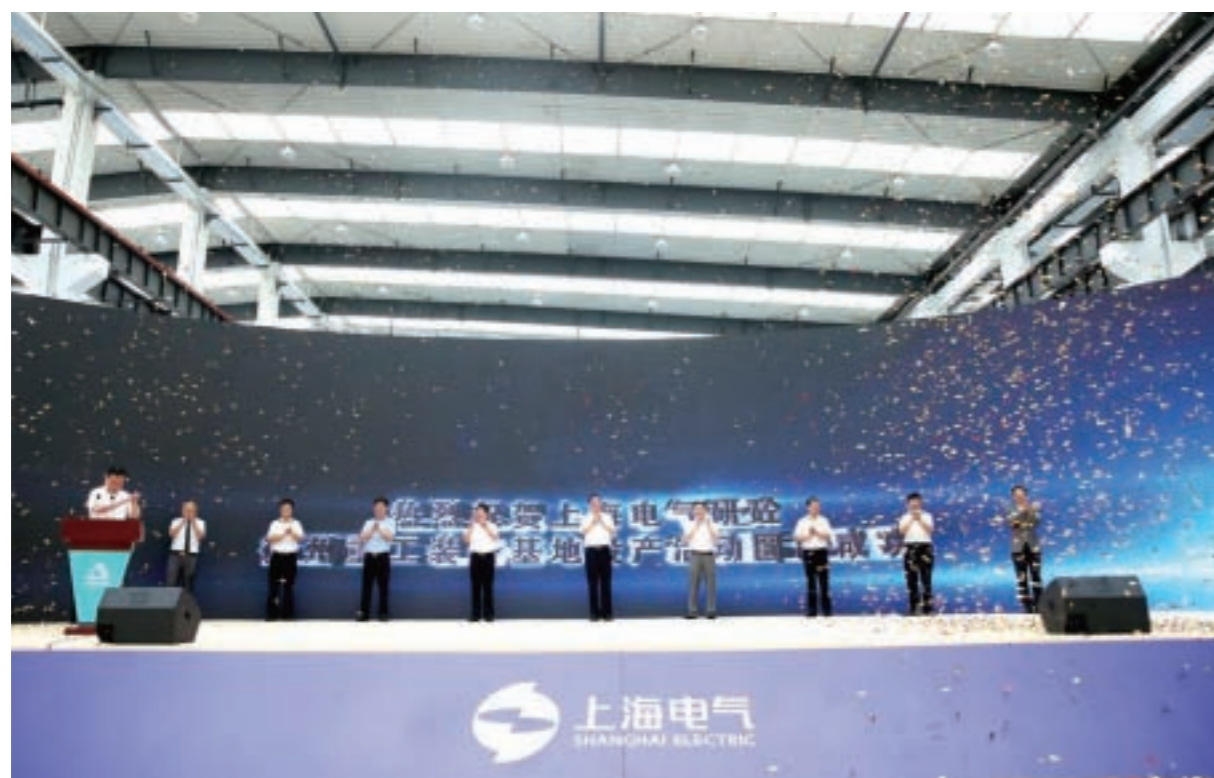
In the presence of Chinese Premier Li Keqiang and French Prime Minister Edouard Philippe, Shanghai Electric and French Vallourec Group entered into a cooperation agreement on heat exchanger tubes of "Hualong One" nuclear steam generator in Beijing. The signing of the agreement marks a new stage for the economic and trade cooperation between China and France in the field of nuclear energy. In recent years, nuclear energy has been an important area of Sino-French economic and trade cooperation. In order to better develop China's nuclear power market, Vallourec Group has established a highly modernized heat exchanger tube manufacturing plant in Guangzhou. According to the agreement, the Guangzhou plant of Vallourec Group will be, for the first time, supplying heat exchanger tubes used in "Hualong One" nuclear steam generators.

➡ The consortium formed with Dongfang Electric awarded the contract for the world's largest clean coal-fired power plant project

On 2 September, in the presence of Egyptian President Abdel Fattah el-Sisi, the Ministry of Electricity of Egypt, on behalf of Egyptian government, and the consortium formed by Shanghai Electric and Dongfang Electric entered into an EPC contract for the Hamrawein 6600MW clean coal-fired power plant project in Beijing. This is the largest clean coal power project in the world, and it marks the first time that Chinese enterprises introduced proprietary ultra-supercritical clean coal-fired technology to the world. The Hamrawein coal-fired power plant will be the largest clean coal-fired power plant in the world and the first coal-fired power plant in Egypt, and thus has received high attention from the senior leaders of China and Egypt. The consortium will form a best executive team to build the project into a benchmark advanced power plant project in the Middle East and even in the world.

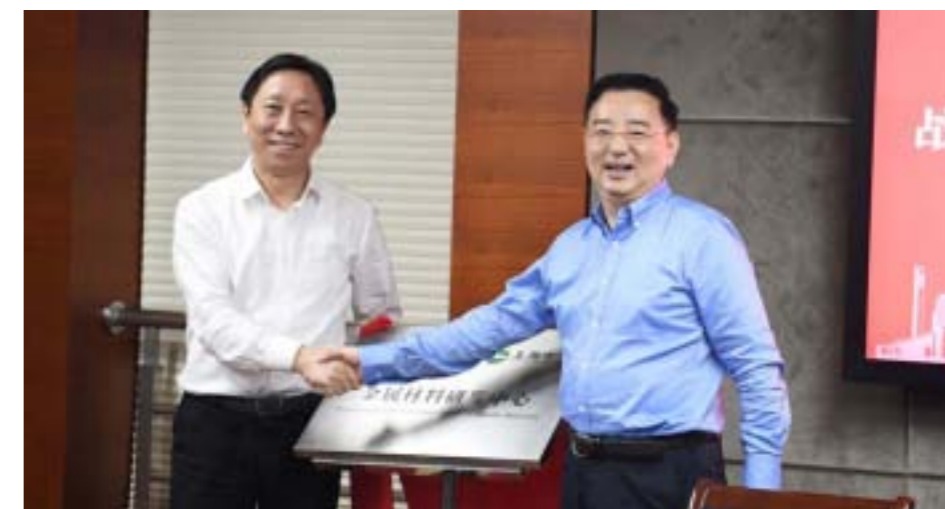
➡ Joining hands with top players to tap into the matechstone industry

On 3 July, the Shanghai Electric Matechstone (Xuzhou) Heavy Industry equipment base jointly established by Shanghai Electric and a number of top players in the industry was officially put into operation. The project was sited in Xuzhou Economic Development Zone in August 2017 and Shanghai Electric Matechstone (Xuzhou) Heavy Industry Technology Co., Ltd. (上海电气研研徐州重工装备基地) was established to engage in the research and development, design, production and installation of modern construction equipment and machinery. According to the plan, the production base will cover a site area of about 150-300 mu, located close to the equipment base. Upon reaching designed capacity of production, the project will have a production capacity of 100,000-200,000 cubic meters for prefab buildings with GFA of 1.2-2 million square meters. Shanghai Electric Matechstone (上海电气研研) possesses professional research and development capability, advanced lean production capability and an outstanding management team in the industry. The establishment and improvement of the base will give full play to Shanghai Electric's advantages in equipment manufacturing and the professional and technical advantages of its partners, helping Shanghai Electric to gain a solid business foundation and establish its position as an industry leader during the upgrading of China's construction industry.



➡ Entering into strategic cooperation with Hebei Iron & Steel Group

On 5 June, Shanghai Electric entered into a strategic cooperation framework agreement with Hebei Iron & Steel Group, pursuant to which, the two parties will focus on the high-end equipment manufacturing industry to jointly establish R&D center for steel materials used in high-end equipment. The parties will leverage their technological achievements and their respective advantages in logistics resources in the Yangtze River Delta region and Beijing-Tianjin-Hebei region to jointly carry out research on key technologies and applications of materials for equipment manufacturing, and strive to achieve major breakthroughs in scientific and technological development, personnel training, commercialization of achievements, cooperation and exchange, and realize seamless linking of business chains. Meanwhile, the parties will deepen their collaboration in the supply chain and provide customized steel products, advanced equipment products and full lifecycle solution services to each other.



➡ Entering into a package of cooperation agreements with Shenzhen Energy

On 6 July, Shanghai Electric and Shenzhen Energy held a signing ceremony for a package of cooperation agreements, including deepening innovative strategic cooperation, a supply contract for supplying equipment for F-class gas turbine combined cycle plant of Zhangyang Phase II, and a financing lease agreement. According to the strategic cooperation agreement, Shanghai Electric Power Generation Group, a subsidiary of Shanghai Electric, and Dongguan Shenzhen Energy Zhangyang Power Co., Ltd., a subsidiary of Shenzhen Energy, will jointly build a Shenzhen Energy-Shanghai Electric clean energy power generation innovation platform, combining the engineering experience of Shenzhen Energy in gas turbine project with the technical edges of Shanghai Electric in developing gas turbines to develop, commercialize, promote and apply new technologies in the field of energy conservation and emission reduction, and finally apply such technologies to build new generating units and to renovate those that have been put into operation. Further, in order to improve the operational safety and reliability of the power plants of Shenzhen Energy throughout their lifecycle and effectively reduce the operation and maintenance costs, the two parties will establish a joint training center and a joint maintenance team for the operation, maintenance and overhaul of coal-fired and gas-fired power equipment manufactured by Shanghai Electric and installed at the power plants of Shenzhen Energy.

➡ Technical exchange between Shanghai Electric and AECC CAE

On 26 September, the first Shanghai Electric- AECC CAE academic forum themed "innovation-driven integration of gas turbine & aero-engine industries" was held. The two industries play important roles in the global manufacturing sector, and are major national science and technology projects. Under the guidance of the principles of promoting interaction and exchange between gas turbine manufacturers and aero-engine manufacturers proposed by the Shanghai Municipal Government, Shanghai Electric and AECC CAE jointly organized an academic forum to further promote the technical exchange in respect of gas turbines and aero-engines, create stronger academic atmosphere, and facilitate the accumulation and application of the scientific research achievements in gas turbines and aero-engines, thereby strengthening knowledge dissemination and sharing between the two companies and laying a solid foundation for broader strategic cooperation in the future.



4.2 Upholding fair competition and promoting industry development

We abide by competition laws and regulations, uphold fair competition, and oppose any attempt to gain competitive advantage through unfair means. We urge our subordinate enterprises to participate in industry organizations to develop industry cooperation platforms and thereby contribute to promoting the overall development and progress of the industries they operate in. Over the years, we have actively participated in the formulation, revision and review of national and industry standards, which not only kept us informed of the latest developments of the industries, but also enhanced our influence in the industries.

➔ Nuclear power

On 25 October, the 317th Eastern Forum of Science and Technology - Seminar on Key Scientific Issues and Applied Technologies of Nuclear Reactor Materials jointly organized by Shanghai Electric Nuclear Power Group and Shanghai University was held. The forum gave a special report on "Localization of Key Nuclear Power Equipment and Materials" and "Setting up Collaborative Innovation Platform for Collaboration among Enterprises, Universities and Research institutes on Nuclear Materials", and had in-depth detailed discussions on the progress of localization of key nuclear power equipment and materials, key issues affecting subsequent stable development and future development trends.



➔ Wind power

Shanghai Electric signed a strategic cooperation agreement with the National Technical Committee for Standardization of Wind Machinery, pursuant to which both parties will cooperate in industry standards, technology exchanges and internationalization to jointly promote the development of China's wind power industry. Industry standards are essential for guiding the advancement of the wind power industry, and will play an important role in the sound development and "going global" efforts of China's wind power industry. As one of China's leading wind power equipment manufacturers, Shanghai Electric possesses a complete testing system, accurate testing classification and rich testing experience, and will continue to promote the development of a system of standards for China's wind power industry.

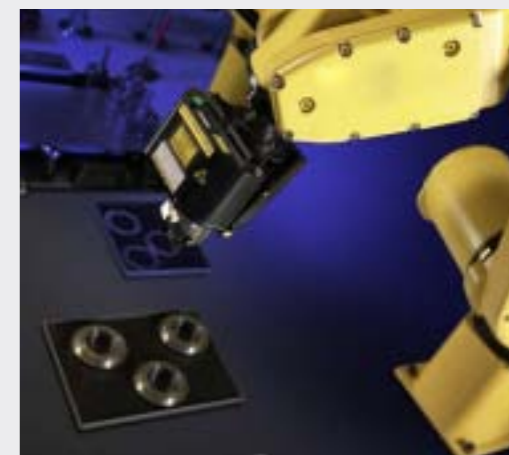


➔ Elevators

As a deputy director member of National Technical Committee 196 on Elevators of Standardization Administration of China (SAC/TC 196), head of the escalators working group, deputy head of the elevators working group, deputy head of the energy efficiency working group and deputy-director member of Shanghai Technical Committee for Standardization of Elevators, Shanghai Mitsubishi Elevator actively participates in the formulation of national standards, industry standards and local standards and undertakes the standardization of the elevator industry, demonstrating its efforts in undertaking social responsibility.

➔ Robotics

The first national professional skills competition on industrial robotics in the machinery industry was held at Shanghai Fanuc. Sixty players from all over the country competed in the installation, debugging and maintenance of industrial robots. Market demand has driven the demand for equipment and labour force with relevant skills. With the rapid growth of China's robotics industry, there is a huge shortage of labour force for the front-end design and operation and maintenance of robotics. Shanghai Fanuc has been committed to the training of industrial robotic technicians. As the organizer of the event, it was responsible for the pre-competition training and the venue, equipment and technical support for the final-round competition. In the future, it will continue to develop training bases for robotic application through providing training courses, cooperating with universities and other means to train professionals required by the robotics industry.



➔ 4.3 Resisting commercial corruption and upholding law-abiding development

We earnestly implemented the requirements of ensuring full and strict governance over the Party, imposing strict political discipline and rules and strengthening discipline enforcement. With a focus on the strategic objectives and central tasks of the Group, we ensured that the Party committee shoulder the principal responsibility and the discipline inspection committee performs supervisory responsibility, strictly observed the eight-point frugality code of the CPC Central Committee, strengthened supervision, discipline and accountability, made solid efforts in improving Party conduct and fighting against corruption, and resisted any commercial corruption, thereby providing a strong foundation for future sustained and healthy development.

➔ Enhancing efforts in developing and implementing responsibility systems

We have formulated the "Shanghai Electric Group's Implementation Opinions on Establishing a Mechanism Ensuring Officials Dare not, Cannot and Do not Want to be Corrupted, and Improving Party Conduct and Integrity", providing systematic designs and arrangements for our efforts in fostering honest and upright work style within the Group. We set up a "concrete, intensive, procedures-based, standardized" mechanism for the implementation of responsibilities for Party building and work style improvement to facilitate the effective implementation of the "coordination of four responsibilities" for Party conduct and integrity. We convened a group-wide conference on improving Party conduct and integrity, to incorporate anti-corruption into our work objectives so that it can be arranged, implemented, reviewed and assessed together with other work tasks, thereby ensuring the implementation of anti-corruption work. Further, we established and improved the supervision mechanism of "overseeing the immediate lower level and inspecting two lower levels", performed supervision and inspection on the anti-corruption efforts of subordinate units, strengthened the responsibilities of Party organizations at all levels, and urged leaders and cadres at all levels to earnestly perform their duties and responsibilities.

Enhancing anti-corruption publicity and education

We insist on identifying and correcting problems early, being both strict and caring, and educating our cadres through both positive and negative examples, and keep improving the relevance and effectiveness of our integrity education. We organize symposiums on integrity and legal education, provide comprehensive anti-corruption education for newly-appointed cadres, and interpret discipline and law with cases to enhance the awareness of Party members, leaders and cadres against corruption. In addition, we hand out anti-corruption books and warning education films every year, compile and distribute "Discipline Inspection and Supervision Proposal(纪检监察建议书)" every quarter, compile and distribute the "Party Conduct and Anti-corruption Study Material(党风廉政学习材料)" every month, and issue warnings during the Spring Festival, New Year's Day, Mid-Autumn Festival and other major holidays in a timely manner, urging Party members, leaders and cadres to consolidate the ideological defense line and hold the bottom line of discipline.

➔ Improving risk management system

Insisting on addressing both symptoms and root causes, we incorporated the integrity requirements into our corporate governance, management systems and operational process and continuously promoted institutional innovation to shore up weaknesses in rules and systems, thereby building a "firewall" to guard against corruption risks. We have drawn up a negative list of honest acts and practices for leaders and cadres, setting out what should not be done and the "red line" that should not be crossed. We promoted job rotation for sensitive posts and improved the check and balance mechanisms for the operation of powers. In addition, we introduced the "dual-covenant" policy that an integrity agreement to be signed when entering into a purchase contract, and adopted a supplier "blacklist" system to veto with one vote any supplier who harms the interests of our enterprises and attempts to bribe cadres and relevant officers of our enterprises.

Tightening accountability for overseeing discipline compliance

We further conducted four forms of oversight over discipline compliance and tightened accountability for overseeing discipline compliance. We performed special inspection on subordinate units in respect of their implementation of the system for "decision-making on key issues, appointment and dismissal of key cadres, decision-making on investment in key projects and use of large-sum capital" and the system for duty performance and remuneration of leaders, so as to strengthen the implementation of systems and correct violations of discipline and rules. We strengthened process supervision over major projects such as restructuring, asset disposal, bidding and tendering activities to ensure compliance with standards and procedures. For any violation of the eight-point frugality code of the CPC Central Committee, any flagrant violation of discipline, any attempt to stretch or bend regulations and any breach of laws and regulations, we have measures in place to ensure those who have committed such acts are held accountable and punished in a rigorous way. For typical cases of violation of discipline and regulations, we see to it that every offender is held accountable, every violation is investigated and a notice thereof is circulated to warn others. We were not involved in any corruption lawsuit in 2018.

➔ Cloud video live streaming of symposium on Party conduct and integrity in three places

On 8 June, Shanghai Electric held a report conference on Party conduct and legal education, and cloud video was used for the first time to effectuate interaction among attendees at three venues, i.e. our headquarters, Shanghai Electric Power Generation Group and education center (a Party school). Nearly 700 Party members and cadres listened to the report at the same time. The conference demanded that Party members and cadres at all levels should strengthen their study and raise their awareness, act in accordance with the new requirements and standards of the Party Constitution and the Supervision Law, keep a clear mind at all times, accept supervision consciously, earnestly practise what they advocate, be honest and self-disciplined, exercise their powers properly, never abuse public power for personal gains, and strive to be responsible for the cause of the Party, the development of the Group and themselves. Party committees at all levels should assume the primary responsibility for improving Party conduct and upholding integrity. The secretary of the Party committee is the first responsible person, should ensure proper operation of the leadership and group-wide teamwork, improve various systems for improving Party conduct and upholding integrity, and form an effective mechanism for ensuring "level-by-level supervision and full implementation at all levels". Executive leaders at all levels should perform their duties of "double responsibilities for one post", take the work of improving Party conduct and upholding integrity as part of their duties, and study the systems and measures against corruption risks in key areas and sensitive posts. Discipline inspection commissions at all levels should fulfill their supervisory responsibilities, attach importance to preventive education, identify problems early and correct them while they are nascent and strengthen prevention and control of corruption risks, thereby facilitating new progress in improving Party conduct and upholding integrity.



➔ 4.4 Enhancing supply chain management to build responsible suppliers

We offered guidance to our suppliers for improving their operation systems and sincerely communicated with them to create an atmosphere of all-win cooperation, improve the core value of purchasing, strengthen honest and law-based cooperation and improve quality control on an ongoing basis, thereby creating a "clean, open and all-win" purchase and supply chain system

As for purchase management, we strictly abided by national laws and regulations including the Contract Law of the People's Republic of China, the Law of the People's Republic of China on Tenders and Bids, the Law of the People's Republic of China on Product Quality, the Pricing Law of the People's Republic of China, the Guaranty Law of the People's Republic of China, the Audit Law of the People's Republic of China and the Law of the People's Republic of China Against Unfair Competition and formulated the Purchase Management of Shanghai Electric, the Centralized Purchase Management of Shanghai Electric and other purchase management rules and regulations with reference to the actual situation of the Group to normatively improve the purchasing activities of the member companies of the Group, strengthen risk control and management for purchasing activities and provide a sound foundation for improving purchasing management capability and product quality of the Group. The selection of all suppliers of the Company strictly complies with the supplier selection process..



➔ Supply chain management platform wins first prize of Shanghai Enterprise Innovation Award

On 8 June, the Group's "Cloud Platform-based Whole-Process Management of Supply Chain of Large-Equipment Manufacturing Group" received the first prize of Shanghai Enterprise Management Modernization Innovation Award. The platform, created with in-house proprietary technologies, was built on Shanghai Electric's original internal cloud platform and expanded to connect the upstream and downstream of the supply chain to enable interaction and collaboration with suppliers, improving the operation efficiency of the supply chain. The platform, integrated with ERP, has a three-tier management and control system, provides the connection with suppliers, operates in an Internet environment and supports mobile applications. The platform is designed to include supplier lifecycle management, sourcing management and purchase order coordination management modules, which realizes dynamic real-time management of the whole procurement process and eliminates data breakpoints. Our subordinate enterprises place orders and communicate with suppliers through the platform, and offline communication and record of results are replaced by online interaction and communication making in-transit inventory visible and improving coordination efficiency.

➔ Shanghai Mitsubishi Elevator keeps optimizing supplier management and reducing cost

In light of China further tightening property market regulation, the differentiation of elevator market demand intensifying, prices of raw materials lingering at high levels and competitors competing at all costs, Shanghai Mitsubishi Elevator kept optimizing its procurement and supplier management to reduce costs and enhance profitability.

Focusing the development strategy of "transforming from production and operation to operation and service, from market expansion to quality and efficiency enhancement", Shanghai Mitsubishi Elevator has always taken sound supply chain management as an essential element to its sustainable development. Shanghai Mitsubishi Elevator regards suppliers as part of its production and manufacturing system, and manages suppliers to help them grow and thus improves the overall efficiency of the supply chain. Given suppliers' learning ability and willingness to practice varying from each other, Shanghai Mitsubishi Elevator adopted the approach of "reporting at year beginning, training in mid-year and awarding at year-end" to motivate suppliers to carry out project improvement activities. Suppliers who perform well will strive for excellence and win awards, while those who lag behind are afraid of being eliminated and will strive to catch up, pushing their lean production standard to improve year by year.

➔ 4.5 Keeping an eye on social hot issues and responding to public appeal

We keep a close eye on social hot issues, respond to public appeal as soon as practicable, take a responsible approach to public's right to information, accurately grasp the trends of public opinions and share media resources from all sectors of society, thereby playing a positive role in promoting the Group's brand. A total of 64 pieces of news about Shanghai Electric were published or broadcast in mainstream media such as Jiefang Daily, Wen Wei Po and Dragon TV in 2018, more than double as compared with 2017.

➔ Zheng Jianhua appears on interview program of Xinhua News Agency

On 2 August, Zheng Jianhua, Secretary of the Party Committee and Chairman of the Board, was invited to appear as a guest on "Dialogue with Senior Executives of Shanghai-based SOEs", an interview program of Xinhua News Agency, where he talked about under the overarching goal of building "four major brands" of Shanghai, how Shanghai Electric would focus on and serve our national strategies by anchoring itself in principal business, speeding up technological innovation and integrating resources and elements around the world in efforts to build a leading Chinese brand of high-end equipment. On the eve of his state visit to the United Arab Emirates, Xi Jinping, General Secretary of the CPC Central Committee, mentioned the Dubai solar thermal project undertaken by Shanghai Electric in a signed article published in several local media. Zheng Jianhua said that Dubai project is the largest single-location solar thermal power plant project in the world and represents the world's most advanced solar thermal power technology today as well as an innovation and milestone in the transformation of the energy sector towards greener development in the future. The successful implementation of the project will mark a major achievement of Shanghai Electric in implementing the "Belt & Road" initiative, and help Chinese brands and Shanghai's brands to win greater and more unique influence in overseas high-end markets.



➔ Shanghai Electric appears in CIIF's 20th anniversary film

2018 marked the 20th anniversary of China International Industry Fair (CIIF). Shanghai Electric, as a representative of the enterprises that have been regular exhibitors since the inception of the CIIF, was recommended by the Economic and Information Commission of Shanghai to be included in the special promotional film for the 20th anniversary of the CIIF. In an exclusive interview with Shanghai media, Zheng Jianhua, Secretary of Party Committee and Chairman of the Board, said that the CIIF, which serves as an important window for China's industrial sector to the world, reflects and witnesses the development and evolution of China's equipment manufacturing industry in the past 20 years. With the increasing international influence of the CIIF, this platform has greatly enhanced the public awareness and social dissemination of the "Shanghai Electric" brand.



➔ Media interview on the brand building efforts of Shanghai Electric

On 27 April, a joint interview group composed of reporters from Xinhua News Agency, China National Radio, Shanghai TV, Jiefang Daily, Wen Wei Po, Youth Daily, The Paper, East Finance and China Business Network conducted an interview on the brand building efforts of Shanghai Electric. At the interview, senior executives of the Group gave an introduction on Shanghai Electric's business layout in the three major fields of energy equipment, industrial equipment and integrated services, and on Shanghai Electric's efforts in following national strategies, implementing the "Belt & Road" initiative and accelerating industrial transformation to build a "Made in Shanghai" brand. As a "name card" of Shanghai's industrial enterprises, Shanghai Electric should represent China's image and strength and demonstrate the capabilities and strengths of Chinese enterprises on the world stage. Shanghai Electric should support the national strategies and make the "Shanghai Electric" brand a symbol of "Made in Shanghai" products.

➡ Shanghai Electric appears on first Exposition on China's Indigenous Brands

On 10 May, the first "China Brand Day" event themed "Chinese brands, worldwide sharing" took place in Shanghai. Shanghai Electric was one of the enterprises invited to participate in the first Exposition on China's Indigenous Brands. In line with the theme of "Brand, City & Life", Shanghai Electric's exhibition focused on 1000MW ultra-supercritical second reheat coal-fired generating units, heavy-duty gas turbines and 3.6MW offshore wind turbines, demonstrating Shanghai Electric's comprehensive strength to bring about changes to urban life in a more technological and innovative way.



➡ CCTV Programs report on Shanghai Electric's achievements in offshore wind power field

"These young men in their 20s and 30s 'brave the waves' at sea; they ensure the smooth operation of offshore wind turbines with their superb skills and write a splendid chapter on operation and maintenance of China's offshore wind turbines with their passion for work". This is quoted from "Da Feng Ge", a five-episode documentary of the "Across China" program, which was aired on CCTV from 5 November to 9 November. Each of the five episodes had some shots of Shanghai Electric, and one episode particularly spent over ten minutes telling the outstanding performance of Shanghai Electric in offshore wind power generation.

➡ Shanghai Electric named as one of the "Top 10 Contributors" to China urban energy revolution

On 20 September, the 2nd Annual Conference on China's Energy Industry Development with the theme of "Act towards a Beautiful China" was held at the People's Daily office, which was covered by dozens of well-known media including CCTV, People's Daily, Xinhua News Agency and HKSTV. By virtue of its outstanding achievements in green development, energy conservation and environmental protection in the past year, Shanghai Electric was honored as one of the "Top Ten Outstanding Corporate Contributors" to China's urban energy revolution.

In the new era, Shanghai Electric, guided by the "Made in Shanghai" three-year action plan and pursuing its mission to "Empower Global Industry and Make Life Smarter", benchmarks itself against highest international standards and best levels, adheres to innovation-driven and transformational development, vigorously develops high-end, intelligent and advanced equipment manufacturing, and transforms towards the development of green, environment-friendly, intelligent, interconnected technology integration and total system solutions. Meanwhile, it provides customers with one-stop environmental services and full-package solutions focusing on environmental protection, pollution abatement, comprehensive utilization of resources and green energy.

V Pursuing Green and Low-Carbon Development Protecting the Environment

We adhere to the operation strategy of green and sustainable development in accordance with the requirements of environmental management system. Based on our policies on environment and occupational health and safety, we have established an environmental management system featured by mutual cooperation among departments, which plays an important role in promoting environmental responsibility related strategy, operation, product improvement and policy initiative.

➔ 5.1 Establishing a long-acting mechanism for green management

We always adhere to green development, continuously improve our environmental protection and energy saving and emission reduction management systems and increase energy saving and environmental protection investment, achieving consecutive drops in pollutant emissions and resource consumption and setting an example in terms of green development for the industry.

➔ We strictly comply with

Production Safety Law of the People's Republic of China
Law of the People's Republic of China on Environmental Protection
Law of the People's Republic of China on the Prevention and Control of Environmental Pollution by Solid Waste
Regulation on the Safety Management of Radioactive Waste
Management Measures on Major Pollutants Discharge Permit in Shanghai
Regulations on Hazardous Waste Pollution Prevention and Control in Shanghai
Regulations of Shanghai Municipality on the Administration of City Appearance and Environmental Sanitation

➔ Strengthening the requirements on treatment and disposal of waste gas, solid waste, and wastewater ("Three Wastes")

In order to prevent environmental pollution risks during the disposal process of the Three Wastes, we have formulated the Implementation Regulations of the Solid Waste Management, the Implementation Regulations of the Production Safety and Environmental Protection and other systems.

Shanghai Electric attaches importance to the disposal and discharge of the Three Wastes, and proper disposal and consistent up-to-standard discharge of the Three Wastes are basic requirements for each manufacturing member enterprise. Waste water after treatment shall meet with the discharge standards, and waste gas that met standards after collection and treatment can be discharged into the upper air. The treatment of hazardous wastes generated by member enterprises in the production process has been entrusted to qualified environmental protection companies with which treatment entrustment agreements have been signed and the relevant treatment processes are in line with the relevant regulations for hazardous waste disposal. In addition, we are actively promoting the replacement of products generating hazardous waste, such as using specialized cleaning fluid instead of gasoline, acetone and others to clean machine surface so as to minimize the production of hazardous waste.

We have striven to reduce the resource consumption during the process of production and operation so as to eliminate and reduce environmental pollution. We have developed the Group's green competitiveness based on low carbon and high-efficiency operating model while achieving outstanding performance.

As to energy conservation management, we have strictly abided by relevant laws and regulations and government rules such as Energy Conservation Law of the People's Republic of China; Measures for the Administration of Industrial Energy Conservation and Measures for Cleaner Production Review. Members of the Group have formulated management systems and requirements on energy conservation to further strengthen the energy conservation management of the industrial enterprises within the Group, promote energy-saving technological advancement, improve energy efficiency of energy-consumed products as well as promoting energy efficient products; reasonably adjusted industry structure, enterprise composition, product portfolio, and reduced energy consumption per output value and per unit product, thereby ensuring more efficient and reasonable use of resources.

➔ 5.2 Creating eco-friendly enterprises through green operations

Following the strategy of sustainable development, we insist on reduction of energy consumption and improvement of energy utilisation efficiency in the process of operation, and pursue continuous improvement of energy conservation and consumption reduction with an aim to build an environment friendly enterprise under the idea of “low consumption and high efficiency, clean and low-carbon, scientific management, and continuous improvement”. In 2018, the total amount and emission intensity of greenhouse gases were 245,493.5 tons and 242.7 tons/RMB100 million turnover; the total amount of hazardous wastes was 3,442.2 tons with the intensity of 3.4 tons/RMB100 million turnover; the total energy consumption reached 248,000 tons of standard coal including electricity of 706,230,000 KWh (equivalent to 203,394 tons of standard coal), natural gases of 29.40 million cubic meters (equivalent to 38,191 tons of standard coal), and oil of 3,768 tons (equivalent to 5,518 tons of standard coal); and the water consumption totaled 7,331,000 tons.



➔ Environmental Performance Indicators

Environmental Performance Indicators	2016	2017	2018
Total investment in environmental protection (RMB 0,000)	5,471	6,748	7,590
Energy consumption per unit output value (tons of standard coal/RMB 10,000)	0.0288	0.0290	0.02474
Water consumption per unit output value (tons of water/RMB 10,000)	0.6795	0.7531	0.6199
Exhaust emissions (0,000 m ³)	256,283	306,994	446,111
Wastewater discharge (tons)	4,847,928	3,473,988	3,860,931
Slag discharge (tons)	7,666	3,922	22,573
Comprehensive utilization rate of the Three Wastes	45.51	47.33	75.16
Greenhouse gas emissions (tons)	224,079	268,054	245,494

Note: 1. Wastewater discharge only includes discharge of industrial wastewater.
2. Slag discharge includes general industrial solid waste and hazardous wastes.

Including:	2018
Nox (tons)	56.07
Sox (tons)	8.87
Particulate matters (tons)	20.14
Volatile organic compound (tons)	212.60
COD (tons)	276.24
Ammonia nitrogen (tons)	28.56
Amount of hazardous wastes entrusted for treatment (tons)	3,362.07



➔ 5.3 Enhancing environmental awareness through green office practices

We advance environmental protection management and strengthen environmental governance to promote the coordinated development of enterprise, economy and environment. While providing clean energy, we also strive to reduce energy consumption. We adhere to “focusing on national strategies, promoting high-tech industrialization and vigorously developing low-carbon economy” with the goal to establish a “resource conservation and environment-friendly” enterprise to provide China and the world with more efficient, greener and more economical energy and industrial equipment and complete solutions. We believe that bringing green into the formula of world energy will effect a future in store for bright prospects.

➔ Consumption of packaging materials in 2018:

Packaging material	Consumption (tons)	DensityTons RMB'00 million output valu
Wood	18,660.32	18.45
Iron trestle	9,169.21	9.06
Iron box	1,200	1.19
Cardboard box	513.09	0.51
Plastics	288.20	0.28
Others	348.35	0.34

➔ The solid waste warehouse at the harbor-adjacent base was put into use

With over one year of planning and construction, the solid industrial waste warehouse at the harbor-adjacent base of Shanghai Electric passed the completion acceptance and has so far been put into use comprehensively. Since the comprehensive utilization of the harbor-adjacent base after being constructed, the production capacity of major enterprises stationed thereat has been scaling up. Therefore, the yard previously set aside and designed for provisional stacking of solid wastes saw a far cry from meeting the actual demands. The solid waste warehouse is capable of concentrated storage and eco-friendly treatment for solid industrial wastes including scrap profiling iron generated by all enterprises at the base, and is accessible for supervision and control over the operations of the warehouse round the clock through remote video system. With the capacity for collection and storage of 3.5 tons of scrap profiling iron, it is able to meet up with the demands of all enterprises at the base for concentrated storage and eco-friendly treatment of solid wastes completely.

➔ The training base was furnished with a “green cafeteria” at municipal level

The dining hall at the training base of Shanghai Electric was rated as a “green cafeteria” in the catering business and the “5A (6T in terms of practical operation) standardized enterprise for on-site management in the catering business”. The dining hall at the training base of Shanghai Electric adopts strict standards from each of the aspects including purchase, acceptance, preliminary processing, kitchen operating, cooking, temporary conservation, etc., and follow closely to the processing sequence for operation of raw materials, semi-finished products and finished products to avoid cross contamination, thus ensuring safety of food. What is noteworthy is that real-time video surveillances are available in different areas of the dining hall for the diners to see the actual practice of the cooks in the kitchen through the screen. Such a transparent kitchen with open space and clean kitchenware enable the diners at the base to be rest assured of what they eat.



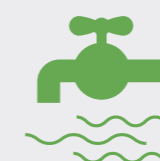
➔ Green office practices

We prefer to procure and use green and environmentally friendly products to reduce emissions from pollution sources. We advocate our staff to drive less and take public transportation and ride bicycles etc. instead, and arrange shuttle buses for staff as appropriate to solve staff’s problems in the last kilometer of travelling and in turn to reduce the emission of waste gas. We strengthen the management on effluents. For example, the emission from the main bilge well is discharged into the municipal pipeline after meeting the standards; qualified companies professionally engaged in the recycling of solid waste will recycle waste batteries, waste plastics, waste tubes and waste glass. We promote paperless office and use emails and conduct double-sided printing in working processes to save paper consumption and reduce timber cutting, and prevent the use of disposable chopsticks to reduce the overuse of earth resources.



➔ Improving power utilization efficiency

We conduct reasonable transformation and updating and regular maintenance on equipment to ensure normal operation. In terms of the use of the central air-conditioner, we require the staff to develop the habit of keeping the door closed. Meanwhile, we technically control the water temperature to reduce energy consumption. We appropriately reduce the indoor temperature control level in winter or increase it in summer to reduce energy consumption. We encourage the staff to exercise more by taking the stairs more and elevators less. Through the multichannel publicity and popularization of environmental protection knowledge and with effective measures taken, the power consumption efficiency improved significantly by virtue of our joint efforts.



➔ Improving water utilization efficiency

We strictly abide by state regulations in acquiring water resources, and have not had any problems in this aspect. Meanwhile, we pay attention to water-saving management, consistently improve the statistics, analysis and appraisal on energy measurement and promote the application of new water-saving technologies and crafts. With a series of measures, the Group’s water-saving attempts have obviously paid off and the water utilization efficiency has been effectively enhanced.

- ◆ Arrange special staff to take charge of water saving management and ensure the implementation of various work.
- ◆ Enhance the system building to ensure the implementation of annual work plans and conduct inspection on the completion of all work to accumulate management experience.
- ◆ Collect relevant laws, regulations and standards and reinforce learning about laws and regulations on water saving to ensure strict compliance of plan in water utilization .
- ◆ Strengthen publicity, education and training. We actively arrange water management personnel of all units to attend trainings on water-saving business and encourage them to strengthen learning and enrich knowledge through online platforms. We encourage all units to conduct different forms of water-saving publicity and education activities based on their own characteristics in water saving.

WT Pursuing Harmony and Kindness Paying Back to the Society

We firmly believe that it would not be possible to maintain sustainable development without the support and participation of the stakeholders. Therefore, we follow through production safety, protection of rights and philanthropic causes to show our attentive cares to our employees, investors and the public and strive to share the development achievements with the stakeholders concerned with the operation and the society.

➔ 6.1 Fulfilling responsibilities advocated by governments and supporting government administration

Adhering to the principle of law-abiding operation, we carry out research and development, production, operation and management activities with integrity, honestly and scrupulously according to laws and proactively participate in various tasks the government advocates in strict compliance with relevant regulations and rules. Meanwhile, we have established relevant tax paying systems and business processes based on the "honest tax paying according to laws" tenets so as to foster the sense of ownership which stresses that one should be proud of tax payment. In addition, we promote employment through multiple channels and shoulder our responsibilities and undertakings as a SOE with practical actions.

➔ Nantong regional headquarters serving the national strategy on the integration of the Yangtze River Delta region

On 25 December, Shanghai Electric entered into an agreement in relation to the project of Nantong Regional Headquarters. According to the agreement, the Group proposed to build the Shanghai Electric Regional Headquarters (Nantong) Base for Technological Innovation and Development of New Industries in the Nantong Central Innovation District. With the four functions of "corporate headquarters, research and development center, information center and service center", the base mainly focuses on four industries, i.e. "new energy and environmental protection equipment industry, building assembly industry, new energy battery industry and heavy equipment industry". It will be implemented in steps to finally form four core functional segments of "sales, R&D, informatization, and service" to maximize the integration of Shanghai Electric Group's enterprises and project resources in Nantong and its surrounding cities, forming the three spillover effects of an industrial park, i.e. "industrial agglomeration effects, industry linkage effects and capital amplification effects". With the further promotion of the national strategy of integration of the Yangtze River Delta Region, Shanghai Electric will seize the opportunity to expand its presence to the surrounding areas with the base in Nantong to serve the national strategy of integration of the Yangtze River Delta Region. It will place the Group's strategic layout on Nantong and takes Nantong as the main base for industrial upgrading and technology transfer. The solid promotion of the project has produced results and Shanghai Electric will boost the construction of Nantong into a "city of innovation" to achieve mutual benefit and a win-win situation and jointly build the future with the Nantong Municipal Government.





➔ Achieving comprehensive strategic cooperation with Mianyang

On 19 December, Shanghai Electric and Mianyang Municipal Government of Sichuan Province entered into a framework agreement on comprehensive strategic cooperation, pursuant to which both parties would establish long-term cooperation in terms of industrial cooperation, technological innovation, and exploration of new areas of cooperation and cooperation models. In respect of industrial cooperation and capacity transfer, both parties have clarified the specific cooperation aspects such as environmental protection, urban intelligent public transport system, energy equipment parts and components, military-civilian integration, business trade, and relevant policies. In respect of strategic emerging industries, both parties have proposed cooperation in terms of enterprise transformation and upgrading, transfer of equipment manufacturing industry, automation upgrading and transformation, 3D printing, cooperative construction, technology research and innovation platform. In respect of innovative cooperation model, both parties will carry out innovative cooperation in terms of urban renewal and transformation, healthcare and medical treatment, tourism industry and industrial development.

➔ Boosting the construction of Yancheng into a “smart city”

On 5 November, Shanghai Electric and Yancheng City of Jiangsu Province entered into a strategic cooperation agreement, aiming at deepening the comprehensive strategic partnership between Shanghai Electrical Group and Yancheng City, which laid a foundation for follow-up joint industrial cooperation. According to the strategic development agreement, both parties will carry out cooperation in terms of offshore wind power development, cultivation of environmental protection industries, energy Internet construction, high-tech research, high-end equipment manufacturing, etc., with a view to promoting the construction of ecological civilization and smart city of Yancheng City through the application of the high technologies of Shanghai Electric.

Shanghai Electric is currently in a critical period of industrial restructuring, transformation and upgrading. In the future, its businesses will develop digitally and intelligently, focusing on energy, environmental protection, intelligent manufacturing and other fields, which are highly consistent with the development strategy of Yancheng City, and both parties will further clarify the cooperation areas and contents and formulate a road map for cooperation and development, which will be implemented step by step for common development.

➔ Building a government-enterprise bridge to optimize the business environment

On 22 June, at the 4th General Meeting of the Shanghai Entrepreneurs Association, Zheng Jianhua, the Party Secretary and Chairman of the Company, was elected as the President of the 4th Council of the Shanghai Entrepreneur Association with an overwhelming majority of votes. Zheng Jianhua expressed that he would lead the new session of the council to proactively implement the spirit of the 19th National Congress of the Communist Party of China and the Opinions on Building a Healthy Growth Environment for Entrepreneurs, Carrying Forward Excellent Entrepreneurship, and Giving Full Play to the Role of Entrepreneurs of the CCP Central Committee and State Council and the strategic deployment of the municipal committee and government in relation to expansion of the influence of “four major brands”. It is necessary to cooperate with the Shanghai Municipal Party committee and government in large-scale survey and go to the front line of enterprises to listen to the voices of entrepreneurs, understand the needs of enterprises and proactively offer ideas and suggestions, to serve as a bridge between government and enterprises. The council will proactively implement the various reform requirements of Shanghai regarding optimization of the business environment, and assist enterprises to study and apply policies based on the various policies and measures of the municipal Party committee and government, to ensure implementation of various policies. Various effective activities will be organized to play an active role in establishing a new type of relationship between government and enterprises. In the process of expanding the influence of “four major brands” of Shanghai, a group of outstanding entrepreneurs in Shanghai will be identified.

➔ Facilitating the construction of a world-class ecological island in Chongming District

On 27 April, Shanghai Electric Power Generation Group and the Sanxing Town Government of Chongming District entered into a strategic cooperation agreement on smart energy project, pursuant to which Shanghai Electric Power Generation Group shall build the Sanxing Tianyuan Smart Energy Demonstration Project so as to contribute technology and strength of Shanghai Electric to promote the construction of a world-class ecological island in Chongming District.

The project is a smart micro-grid project centering on clean renewable energy and energy storage and integrates many achievements made by Shanghai Electric in the field of new energy in recent years. Upon completion, the project can not only produce clean renewable energy, but also greatly reduce the electricity cost of villagers and village collectives by way of intelligent and optimized operation mode. The project aims to reduce urban energy consumption and meet the needs of eco-environmental protection. Through technological advancement and model innovation, the project will realize the comprehensive application of clean energy represented by thin-film solar energy and energy storage and form a package of comprehensive solutions in terms of green building, smart park, green transportation, water ecology and smart city infrastructure.



➔ Paying taxes according to laws with integrity

Paying taxes according to laws plays an important role in conducting tax risk management. For this reason, we have taken the following measures: carrying out self-inspection, strengthening daily supervision over all indexes of high-tech companies of the Group, exploring a new model for corporate tax management following the change from business tax to VAT; amending the Group's administrative measures to manage VAT and intensifying authentication management of VAT invoice and input VAT. By 2018, as assessed by the tax management system, over 95% consolidated companies of Shanghai Electric obtained Class B or better in tax-paying credit rating.

➔ 6.2 Ensuring production safety and guaranteeing employees' wellbeing

The Group fully practiced the core values of "People's Life above All Else" and implemented the concept of "Enjoying Safety, Green Manufacturing and Creating Future Together". By focusing on the concept of "People's Life above All Else, Enjoying Safety, Green Manufacturing, and Creating Future Together", the Group has built up the management system characterized by standardized approach, the accountability system based on the safe and environmental protection responsibilities check list, and the function system focused on vertical allocation of safety and environmental protection related responsibilities, and formed a multilateral and multi-dimensional ecological management and supervision work pattern for the Group's safety and environmental protection work. In 2018, the Group fully accomplished the safety production indicators assigned by the superiors and no fatal accident happened.



➔ Deeply promoting the construction of the Group's safety and environment systems

The construction of the safety and environment system is the core of Shanghai Electric's safety and environmental management and is a long-term, scientific and correct decision for the current new situation of safety production and environmental protection. The construction of the safety and environment system of Shanghai Electric has been implemented for nearly eight years. At the group level, a series of work has been completed, including top-level design, systems and regulations, mechanism establishment, and scientific evaluation. By learning lessons from accidents, the Group has found deficiencies in management, conducted analysis and improvement in respect of the pattern and formed a safety and environment system with good practice summary and reference, in line with the political development concepts of the Party and country and the requirements on scientific development of modern enterprises. The construction of the safety and environment system by business groups will be included in the responsibility statement as the main content of the assessment of the Group's safety production and environmental protection for 2019 to 2021, and will be used as the key and guidance subject for the Group's annual process inspection.

➔ The "Safety Month" event in full swing and with fruitful achievements

In the "Safety Month" event of Shanghai Electric in 2018, the "Six One" production safety and environmental protection activity themed by "worship life, pursue safe development" was carried out, creating a favorable atmosphere of production safety and environmental protection for the realization of the first step of the "three-step" strategic goal.

In order to thoroughly implement the concept of "establishing the safe development concept and carrying forward the idea of life foremost and safety first", the Group will further enhance the safety and environmental protection awareness of employees and strengthen their skills in this regard. All units of the Group organized the practice of "joint accountability of the CPC system and enterprise system" and "safety classroom" for enterprises, workshops and shifts. The Group prepared and issued the Learning Materials on Safety Production for Shifts of Shanghai Electric and the Guidelines on Enterprise Safety Production, Occupational Disease Prevention, and Environmental Protection Responsibilities, to convey laws and regulations, the new safety and environment system of Shanghai Electric, the Group's safety and culture rainbow model and the guidelines on safety and cultural construction of Shanghai Electric to shifts. The "special training on 'a post with double responsibilities' in relation to safety and environmental protection for leaders and cadres of enterprises" was organized to enhance the risk prevention awareness and ability of the functional departments and employees engaged in risk management and control. Various units organized various publicity and education activities on the safety and environment culture and laws and regulations. During the "Safety Month", the training and study on safety and environmental protection was organized for a total of 25,020 person-times, and various warning education activities were held for 16,309 person-times. In order to strengthen risk management and control in respect of production safety, the units also organized a variety of activities themed by risk control and hidden danger investigation, in which a total of 8,219 risks were identified, 3,017 operation instructions and operating procedures were re-confirmed, 1,311 hidden dangers were screened out, and rectification was conducted for 817 hidden dangers. In addition, through the reasonable proposal collection activity of "safety and environmental protection - I have and assume responsibility", the Group collected 1,857 reasonable proposals, of which 622 proposals were adopted and implemented. In addition to comprehensively sorting out the safety risks, all units organized different types of emergency drills in a targeted manner, and held 49 emergency drills in total, including 12 comprehensive drills, 24 separate drills, and 13 other drills. 1,828 employees participated in the drills. Thanks to such drills, the employees' emergency awareness and disaster prevention and avoidance capabilities were enhanced.

➔ Desktop fire response drill organized by the Group

According to the prescribed scenario for the desktop contingency drill on "fire accident at No. 5 oil groove for heat treatment", in the elevating quench process for the big gear ring of a workpiece in the tempering furnace for heat treatment, a bad fire broke out at the oil groove due to the sudden breakdown of oil groove circulating pump, and employees on duty were trapped in the workshop. Upon enablement of the contingency plan, the firefighting crew, the medical aid team, security team and the logistics support team, through joint efforts, finally put out the fire at the oil groove, rescued the trapped employees and coped with the fire accident promptly and effectively. The entire drill progressed in an intense and orderly manner, and was in line with the reality. On the drill site, the prescribed scenarios such as oil groove on fire, escalated reporting, the involvement of firefighters, medical aid, etc., were acted out stepwise by way of field circumstance presenting, sound simulation and video display. In addition, each directive and action made by the participants was accurate and constituted orderly cooperation with one another, which created an immersive atmosphere for the personnel on the scene.

➔ Contingency rescue drill on the solar-thermal construction site of Dubai

On 19 November, a worker was injured in the leg in an accident on the solar-thermal construction site of Dubai. On receiving the report, the foreman pulled the safety alarm to send the on-site personnel for emergency rescue and call for an ambulance, which turned out to be the first HSE drill carried out on the construction site. After the drill, the landlord, the general contractor, i.e., Shanghai Electric and the principal with the construction company conducted summary thereon together with the participants of the on-site drill. The workload of the solar-thermal project equaled to the construction tasks for four power plants and therefore involved a huge amount of construction work. As the project was located in a subtropical desert zone, where climate and environment are hostile with temperature as high as 50 degrees and almost saturated humidity in summer, and sand storms plagued throughout the autumn and winter, higher requirements for HSE of the project were put forward in view of the project duration, climate, local regulations and other factors.



➔ Safety training center covering all aspects of wind power industry established in Rudong

On 2 August, Nantong training center Project Phase I of Shanghai Electric Wind Power Group opened for business in Rudong coastal economic development zone of Jiangsu. The training center plans to develop into a safety training institution recognized by global wind energy organizations by the end of 2019, and its courses will cover all safety trainings in wind power industry. Upon renovation of the existing plant and facilities, Nantong training center Project Phase I has so far been equipped with facilities for practical operation training of 8 projects including safe escape, gear box, generator sets, system debugging, component test and maintenance, etc. The training center plans to develop into a full module GWO by the end of 2019 with its courses covering safety trainings for a number of fields concerning urgent rescue and aid, high-altitude operation, salvage and sea escape, etc.

➔ 6.3 Contributing to philanthropic initiatives and building a harmonious community

Upholding the concept of "making progress together and promoting the harmonious development of society", we actively repaid the society and sought for harmonious intergrowth with the society with gratitude. We have been proactively experimenting on approaches for fulfilment of public services advocated by the government to promote the socialized development of public services. We also encouraged our corporate volunteers to conduct public benefit services, thus carrying forward the specialized development of social services. At the same time, we paid attention to hot-spot issues arising in the course of social development and capitalized on our professional advantages to undertake poverty alleviation and boost the betterment of people's livelihood, with a view to pursuing the harmonious development of the enterprises and the society and benefiting the neighborhood, the mankind and the nature. The Group had 558 volunteers in 2018.

➔ Paired support in full swing

According to the Requirements on the New Round of Comprehensive Rural Support Work issued by Shanghai Committee of C.P.C. and Shanghai municipal government, the Company undertook the glorious political task of initiating the new round of comprehensive rural support work. In addition to pairing with Zhuanghang Town, the Party committees of 16 grassroots enterprises directly under the Group were organized to conduct one-on-one paired support for all villages in poor economic conditions in Zhuanghang Town. During the reporting period, the Group organized a number of joint meetings, at which, relevant leadership with the Group reached out to the principals of the Party committee and the government of the town, the specific departments of the Group contacted the competent authorities of the town, and the Party committee of the subordinate enterprises communicated with the village committees to improve the communicating and coordinating effectiveness of the support work at different levels, which carried forward the progress of the support work effectively. In active response to the emergency relief requirements of Fengxian Support Office, the Group provided timely support to solve problems concerning the overstocked fruits of farmers at Zhuanghang Town based on the actualities of the subordinate enterprises. In 2018, the 16 subsidiaries helped market a total of 149,348 kilos of pears in Zhuanghang Town with an income of RMB1,126,165, which brought along favorable conditions for the farmers to increase their income, and in turn rendered the solicitude and warmth of enterprises to the underprivileged people of Zhuanghang Town, thereby striving for a prosperous future with joint efforts.



➔ Balingian project department becoming an excellent camp for China's overseas construction projects

In the selection and appraisal of "showing the glamour of China's overseas construction camps", the project department of Balingian coal-fired power station in Malaysia of Shanghai Electric stood out among 78 Chinese overseas construction camps and was honored with the award of "excellent camp for China's overseas construction projects".

When constructing the Balingian project in Malaysia, in addition to high-standard construction of camp quarters, office, kitchen, clinic, staff learning and entertainment center, basketball court and other infrastructure, the Group also promoted the construction of "staff home" and "international community", all of which embodiments of the people-oriented management concept of the Group. In particular, the "international community" was mainly engaged in contributing to local schools, hosting harvest festival charity donations and organizing relief activities for surrounding residents suffering from flood disaster, etc., so as to enhance the harmonious relationship between Shanghai Electric and local residents and highlight the positive image of Chinese enterprises.

➔ Three enterprises of the Group paired with three villages in Yunnan

On 27 December, Power Generation Group, Wind Power Group and Shanghai Mitsubishi Elevator paired with three impoverished villages of Fuyuan County, Qujing, Yunnan Province, respectively and brought rice, edible oil and money to the households in extreme hardship in the villages. According to the deployment of the municipal geared support and cooperative communication work group, Shanghai carried out a three-year "double-hundred" village-enterprise paired targeted poverty alleviation initiative, which meant to organize 100 municipal state-owned enterprises and 100 private corporations in Shanghai to pair with 100 impoverished villages for the purpose of poverty alleviation. State-owned enterprises were required to formulate targeted support schemes featuring "one strategy for one village", and help the impoverished villages to cast off obsolete ideas and update the outlook of village from the perspective of people, material needs and industries. According to the deployment, Shanghai Electric was responsible for the geared support of Tuotian Village of Fucun Town, and Fatu Village and Lumuke Village of Mohong Town, Fuyuan County, Qujing, Yunnan Province.

➔ Caring for children at welfare home

On 22 November, volunteers of the Group went to the Shanghai children's welfare home to visit the children there. The day happened to be the western Thanksgiving Day, a day for people to express their gratitude. On the day, the volunteers taught the children to say "thanks" to their teachers while playing with them. Meanwhile, the innocent and kind-hearted children and respectable teachers at welfare home also enabled the volunteers to have a better understanding of love and in turn to pass on love.



➔ The Lingang base forming part of the tourist itinerary of "Made in Shanghai"

On 20 September, Shanghai Municipal Administration of Tourism held the "one book, one picture" Shanghai industrial tourism conference and the inauguration ceremony for the industrial tourist itinerary, and officially published five "Reaching out to Shanghai Made" theme classic Shanghai industrial tourist itineraries. Upon appraisal and selection, the Lingang heavy-duty equipment manufacturing base of Shanghai Electric was elected as a window to demonstrate the outstanding glamour of "made in Shanghai" and has thus become one of the destinations on the routes of "splendid journey on heavy industrial manufacturing". Visitors will be able to gain a thorough insight into the history and development of Shanghai Electric by visiting exhibition halls where the history, equipment industry and future development trends of Shanghai Electric are presented, as well as the steam turbine plant furnished with sophisticated, large-scale and rare facilities.

