

---

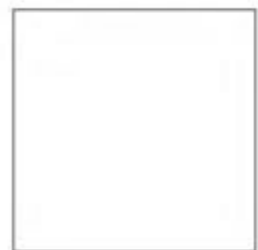
2017 Environmental  
**Social and Governance Report**

Shanghai Electric Group Company Limited

---

**SHANGHAI  
ELECTRIC**

---



扫码获取电子版

# CONTENTS

Shanghai Electric

# CREATE

Our Future Together

## CONTENTS

Notes to Readers	- 02
Chairman's Statement	- 04
Responsibility Model	- 06
About Us	- 07

### Chapter I **16**

▶ Creating better value for shareholders	page	
1.1 Improving corporate governance to ensure scientific decision-making	- 17	
1.2 Focusing on principal businesses to improve efficiency	- 20	
1.3 Upgrading strategies to drive extensional development	- 22	
1.4 Reinforcing internal controls to prevent risks	- 24	
1.5 Ensuring accurate compliance disclosures to safeguard interests	- 26	

### Chapter II **28**

▶ Providing satisfactory products and services for customers	page	
2.1 Safeguarding customers' interests to set customers at ease	- 28	
2.2 Providing quality services to win trust from customers	- 34	
2.3 Emphasizing innovation-driven development to better satisfy customers	- 36	

### Chapter III **44**

▶ Creating a caring family atmosphere for employees	page	
3.1 Maintaining law-based employment practices and sharing achievements with employees	- 45	
3.2 Stressing occupational health and protecting employees' interests	- 48	
3.3 Increasing vocational training investment and relying on talents to grow stronger	- 51	
3.4 Showing care for employees and pulling together to drive development	- 55	

### Chapter IV **58**

▶ Seeking win-win outcomes with partners	page	
4.1 Carrying out strategic cooperation to achieve mutual benefit and all-win results	- 58	
4.2 Supporting fair competition to facilitate industrial development	- 64	
4.3 Fighting against commercial bribery to achieve healthy development	- 68	
4.4 Strengthening supply chain management to build responsible suppliers	- 72	
4.5 Enhancing brand value by leveraging on media dissemination	- 76	

### Chapter V **80**

▶ Walking the talk of going green to protect the environment	page	
5.1 Establishing a long-acting mechanism for green management	- 80	
5.2 Building eco-friendly enterprises through persistent environmental efforts	- 84	
5.3 Enhancing environmental awareness to promote green operation	- 101	

### Chapter VI **106**

▶ Creating a better and harmonious life with the public	page	
6.1 Fulfilling responsibilities advocated by governments and supporting government administration	- 106	
6.2 Ensuring production safety and guaranteeing employees' wellbeing	- 108	
6.3 Contributing to philanthropic initiatives and building a harmonious community	- 112	

## Notes to Readers

### Notes to Readers

Shanghai Electric Group Company Limited began to prepare and disclose its 2009 annual social responsibility report in 2010 and issued the report on an annual basis. This is the ninth corporate social responsibility report, also the second environmental, social and governance report in compliance with the Listing Rules of The Stock Exchange of Hong Kong Limited, aiming to truthfully reflect the development and performance of corporate social responsibility of the Company for the year 2017, to report the operation of the Company to stakeholders including shareholders, employees, customers, government, partners and community, to help stakeholders to gain an in-depth understanding of the corporate social responsibility activities of the Company.

### Source of Data

Certain financial figures contained in this report were derived from the financial report of Shanghai Electric Group Company Limited for the year 2017 which has been audited independently by PricewaterhouseCoopers Zhong Tian LLP. Further details about our financial results are set out in the 2017 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 reference 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 proposal of the Sustainable Development Reporting Guidelines (G4 Version) of Global Reporting Initiative ( "GRI" )
- ▶ 3 Guidelines on Preparing 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" 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 the report from the website of Hong Kong Stock Exchange ([www.hkex-news.hk](http://www.hkex-news.hk)) or the website of Shanghai Electric Group Company Limited ([www.shanghai-electric.com](http://www.shanghai-electric.com)).

### Reporting Period

This report covers the period from 1 January 2017 to 31 December 2017 and is disclosed within 3 months after the publication of the annual report of the Company. The reporting period has been extended for some of the information.

### 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!

Address: No.212 Qinjiang Road, Shanghai

Postcode: 200233

Tel: +86 (0) 21 33261888

Fax: +86 (0) 21 34695780

Email: [service@shanghai-electric.com](mailto:service@shanghai-electric.com)

# Chairman's Statement



**Zheng Jianhua** | Secretary of the Party Committee  
Chairman and CEO

## Always stay true to our original aspiration

Equipment manufacturers should undertake the mission and responsibility to propel China's industrial development and strive to increase our national strength. As a representative of domestic industry brands, Shanghai Electric has been persistently struggling for a century and has gained many achievements and honors including China's first set of 6,000KW coal-fired power generation unit, the world's first dual internal water cooled generator, China's largest 12,000-ton hydraulic press, China's first nuclear power generation unit, China's first large scale marine crankshaft and the world's first set of coal-fired second reheat power generation unit. All these honors and dreams have been recorded in history. What makes us more proud is Shanghai Electric's unwavering dedication to its original aspiration and persistent determination to pursue its mission, Shanghai Electric, together with other innovators of the times, has been promoting technological advancement and changes in life.

## Overcome difficulties and obstacles with courage and perseverance

Time is the fairest witness. The past 2017 was an extraordinary year for China. The 19th CPC National Congress has proclaimed and initiated a nationwide drive to secure a decisive victory in building a moderately prosperous society in all respects and strive for the great victory of socialism with Chinese characteristics for a new era. In the new historical stage, Shanghai Electric redesigned its plan for future development driven by ideological emancipation and conceptual change, aiming to speed up its transformation and upgrading with keen determination, courage and sense of urgency.

We continued to promote the growth in shareholders' interests in the future with outstanding results during the year. In 2017, we helped the parent group to deepen the reform of state-owned assets and enterprises and to achieve overall listing through two asset restructuring exercises, with parent group becoming the eighth state-owned enterprise (SOE) achieved overall listing in Shanghai. Our main businesses have become better and grown stronger and bigger, further strengthening their competitiveness. We focused on national strategies and made great effort to develop high-end, intelligent and advanced manufacturing equipment. In addition, new industrial enterprises achieved rapid development, recording a year-on-year growth of 100% in revenue and a year-on-year growth of 50% in net profit.

We continued to facilitate the future business development of customers with systematic services during the year. In 2017, we successfully developed the first dual internal water cooled generator with an installed capacity of 660MW in the world and the biggest full-speed thermal turbine generator in the world with an installed capacity of 1,260MW. The Company's first 6MW offshore wind turbine was successfully installed in Xinghua Bay, Fujian. We actively responded to the "One Belt, One Road" initiative, conducted innovation in the development of "engineering + service", "engineering + investment" new business models and expanded full set engineering business in power stations, power transmission and distribution, environmental protection and other industries to promote the equipment of Shanghai Electric to "go global". The Group's EPC orders on hand from power plant engineering amounted to RMB61,700 million, nearly 90% of which are overseas orders. We actively synergized with the national strategy of "building a beautiful China" and vigorously developed distributed sewage treatment products in rural areas. In 2017, we successfully won the bidding for domestic sewage treatment facilities for 38,000 households in rural areas in Chongming District, Shanghai. We continue to inject more "intelligence", "brainpower" and "wisdom" into products and services. Shanghai Mitsubishi Elevator Co., Ltd ("SMEC") has over 60,000 intelligent elevators under operation in 2017. "Feng Yun 1.0", the intelligent cloud maintenance platform of Shanghai Electric, has successfully completed the remote access for more than 60 wind farms.

## Promote global industries with energy and create beautiful life with intelligence

We continued to broaden the future career development of our staff with flexible mechanisms during the year. In 2017, we actively advanced innovation in systems and mechanisms to bring staff with motivation, pressure as well as vitality. Shanghai Electric Guoxuan New Energy Technology Co., Ltd. explored the pilot on core staff shareholding. We attach importance to the fostering and introduction of high-end and urgently-needed talents. 11 staff receive allowances from the State Council and 2 are responsible persons of programs for national science and technology prizes. We strengthened the construction of the staff skills training system and promoted the construction of chief technician studios and labor model and innovation studios to give play to the roles of highly-skilled talents in production and manufacturing as well as foster outstanding staff and carry forward the craftsman spirit in inheritance and innovation. We continuously advanced the establishment of a multi-level staff representative meeting system and the democratic management of staff and guaranteed the rights to know, participate, suggest and supervise as well as other legitimate rights of the staff.

We continued to deepen the future win-win cooperation with partners with value creation during the year. In 2017, we sped up in advancing a new round of cooperation and win-win development with local governments. We became a key contributor to the tax revenue of Shanghai with an annual tax payment of nearly RMB5,000 million. Many subsidiaries are among top 100 industrial taxpayers in Shanghai. We have over 500 procurement supporting enterprises in Jiangsu Province as well as offshore wind power manufacturing bases, offshore wind power research and development and training centers. We have entered into strategic cooperation agreements with the municipal governments of Wuxi and Nantong. We vigorously encouraged strong enterprises to join hands and expand the market together. We conducted overall strategic cooperation with GCL Group, Wison Group, Shanghai Municipal Investment, ACAE, Huayu Automotive, Guang Xi Liuzhou Iron and Steel Group Company Limited and other enterprises. We conducted common quality management on the supply chain and improved and established the access system for manufacturers and service providers. We transferred our non-core manufacturing processes to suppliers and, by way of being a non-controlling equity interest holder in the suppliers, worked closely together with our suppliers to jointly guarantee the product quality under the supply chain environment and to share common destiny and interests.

## Get prepared for a new journey

2018 is the first year for implementing the guiding principles from the 19th CPC National Congress and the 40th anniversary of reform and opening-up as well as the first year for Shanghai Electric to initiate a new round of strategies. Following our "Electric Dream", we will persist in our pursuit of excellence in this new journey. We will continue to deepen reform and transformation, speed up in developing our global presence, focus on improving industrial structure and strive to build our Company into an international high-end equipment and system services provider integrating green operations, environmental protection, intelligence and interconnection. We will also strive to contribute Chinese wisdom in reducing environmental burdens and create value for customers by offering "Chinese Proposals".

Shanghai Electric is dedicated to driving creation for today and innovation for tomorrow with relentless efforts. We firmly believe that there will be a more brilliant "Chinese dream" and a brighter prospect for our "Electric Dream".

Secretary of the Party Committee  
Chairman and CEO

## Responsibility Model



## About Us

### Corporate Profile

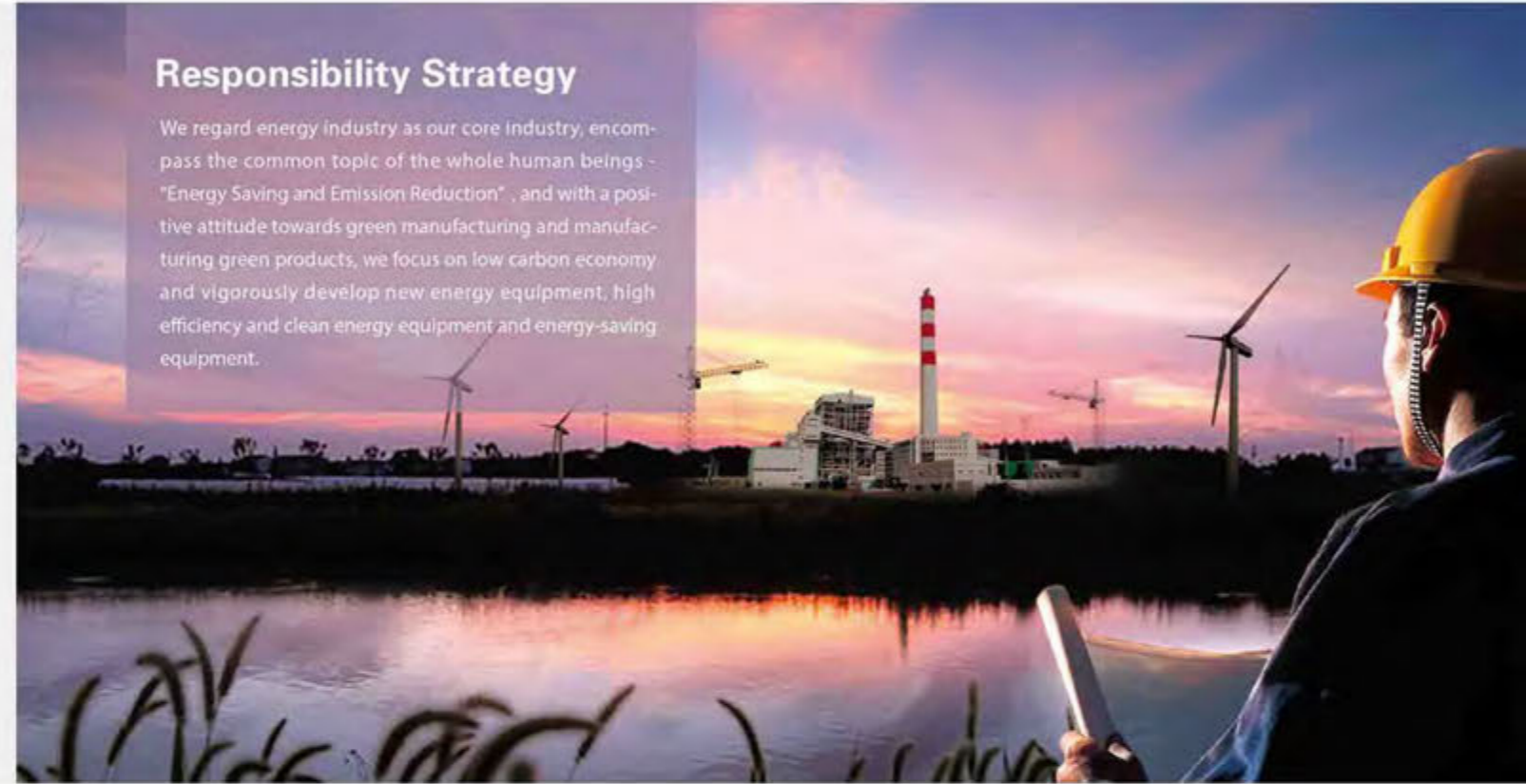
Legal name of the Company in Chinese	上海电气集团股份有限公司
Abbreviated legal name of the Company in Chinese	上海电气
Legal name of the Company in English	Shanghai Electric Group Company Limited
Abbreviated legal name of the Company in English	Shanghai Electric
A share stock code	601727
H share stock code	02727
Registered address of the Company	30/F, Maxdo Center, No.8 Xingyi Road, Shanghai
Business address of the Company	No. 212 Qinjiang Road, Shanghai
Company website	www.shanghai-electric.com
Company email	service@shanghai-electric.com
Company telephone	+86 (0) 21 33261888
Company fax	+86 (0) 21 34695780

### Social Contribution Value per Share for 2017 (RMB)



### Responsibility Strategy

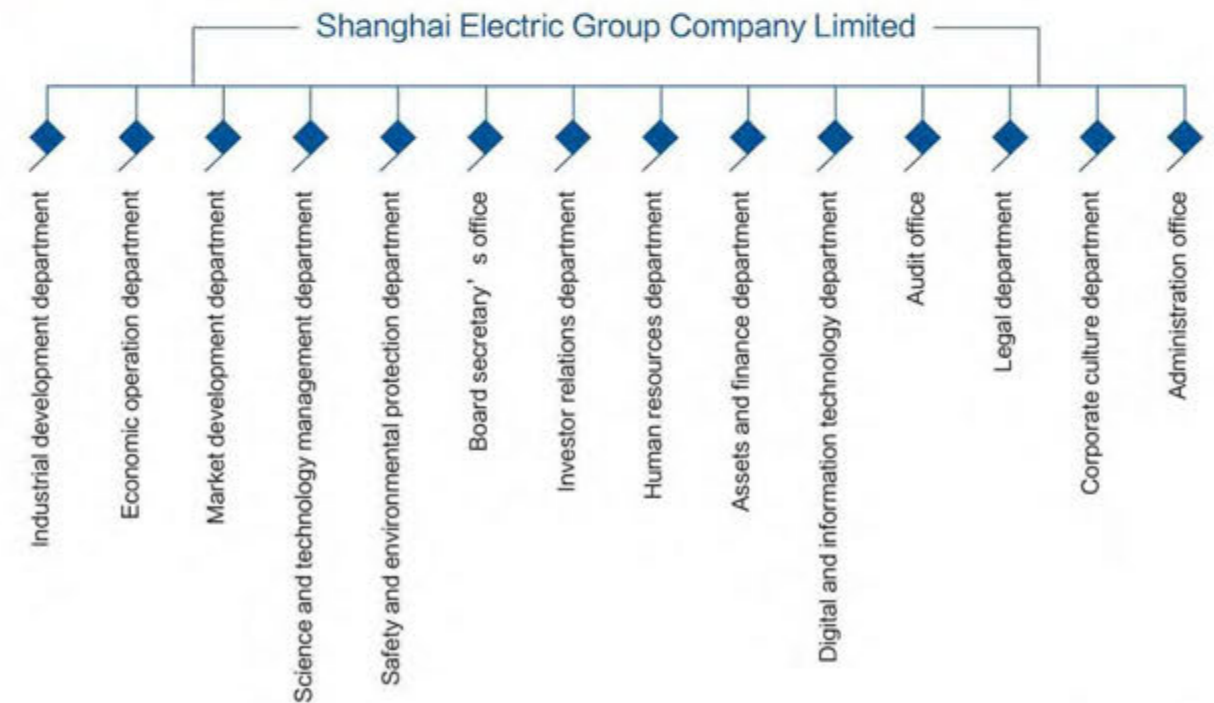
We regard energy industry as our core industry, encompass the common topic of the whole human beings - "Energy Saving and Emission Reduction", and with a positive attitude towards green manufacturing and manufacturing green products, we focus on low carbon economy and vigorously develop new energy equipment, high efficiency and clean energy equipment and energy-saving equipment.



### Key financial indicators for 2017 (Unit: RMB100 million)



### Organization Structure





## Core Businesses

Shanghai Electric is one of the largest integrated equipment manufacturing conglomerate in the PRC, primarily focusing on three areas, namely energy equipment, industrial equipment and integration services. Its products cover coal-fired power generation units, gas turbines, nuclear power equipment, wind power equipment, large and medium-sized electromotors, power transmission and distribution equipment, elevators, environmental protection equipment, machine tools and automation equipment.

## Major Subsidiaries

Shanghai Electric Power Generation Equipment Co., Ltd.	Shanghai Institute of Mechanical & Electrical Engineering Co., Ltd.
Shanghai Mechanical & Electrical Industry Co., Ltd.	Shanghai Electric Leasing Co., Ltd.
Shanghai Mitsubishi Elevator Co., Ltd.	SEC Power Generation Environment Protection Engineering Co., Ltd.
Shanghai Electric Transmission and Distribution Group Co., Ltd.	Shanghai Electric Gas Turbine Co., Ltd.
Shanghai Electric Wind Power Group Co., Ltd.	Shanghai Electric Industrial Co., Ltd.
Shanghai Boiler Works, Ltd.	Liyang Shenling Elevator Co., Ltd.
Shanghai Turbine Works Co., Ltd.	Shanghai Denso Fuel Injection Co., Ltd.
Shanghai Electric Group Shanghai Electric Machinery Co., Ltd.	Shanghai Boiler Works Ltd.
Shanghai Electric Telecommunication Technology Co., Ltd.	Shanghai Electric Group Property Company Limited
Shanghai Electric Power Transmission and Distribution Engineering Co., Ltd.	Shanghai Electric Milling Equipment Co., Ltd.
Shanghai Electric Group Finance Co., Ltd.	Shanghai No.1 Machine Tool Works Co., Ltd.
TEC4AERO GmbH	Shanghai Electric International Economic and Trade Ltd.
Shanghai Electric (Huaibei) Water Resources Development Co., Ltd.	Shanghai Electric Heavy Machinery Casting Forging Co., Ltd.
Thales SEC Transportation System Limited Company	Shanghai Electric KSB Nuclear Pump Co., Ltd.
Shanghai Electric Investment Co., Ltd.	Shanghai Environment Protection Engineering Co., Ltd.
Shanghai Electric SPX Engineering Technology Co., Ltd.	Shanghai Machine Tool Works Ltd.

## Key Performance

### Environmental Performance Indicators:

Environmental Performance Indicators	2015	2016	2017
Total investment in environmental protection (RMB10 thousand)	5,603	5,471	6,748
Energy consumption for unit output value (tons of standard coal equivalent/RMB10 thousand)	0.0287	0.0288	0.0290
Water consumption for unit output value (tons of water/RMB 10 thousand)	0.6975	0.6795	0.7531
Exhaust emission (tons)	99,680	256,283	306,994
Wastewater discharge (tons)	4,126,050	4,847,928	3,473,988
Comprehensive utilization rate of the three wastes	8,424	7,666	3,922
Slag discharge (tons)	71.51	45.51	47.33
Greenhouse gas emission (tons)	152,708	224,079	268,054

• **Note:** Due to changes in the scope of consolidation in 2017, certain figures for 2015 and 2016 were restated.

### Social Performance Indicators:

Social Performance Indicators	2015	2016	2017
Total number of employees	27,310	29,293	29,552
Proportion with labor contract	100%	100%	100%
Proportion with social insurance coverage	100%	100%	100%
Proportion with trade union coverage	100%	100%	100%
Proportion of female management personnel	19.6%	19.6%	20.1%
Proportion of employees with body check coverage	100%	100%	100%
Total investment in employee trainings (RMB10 thousand)	8,769	8,605	8,735
Proportion of employees with training coverage	99.8%	99.8%	99.8%
Training time per capita (days)	3.5	3.5	3.5
Employee satisfaction	97.4%	97.3%	97.5%
Employee turnover rate	2.1%	2.1%	2.9%
Lost days due to work injury	4,797	3,322	2,314
Additional cases of occupational diseases	0	0	0
Charitable donations (RMB10 thousand)	296.3	550.5	347.5

## Science and Technology Honors received in the year

### 2017 National Science and Technology Progress Awards

Name of projects awarded	Name of entity awarded	Grade awarded
Design, Manufacturing and Application of High-Efficiency Cutting Tools	Shanghai Electric Power Generation Equipment Co., Ltd. Shanghai Tool Works Co., Ltd.	Second class prize

### China Machinery Industry Science and Technology Awards in 2017

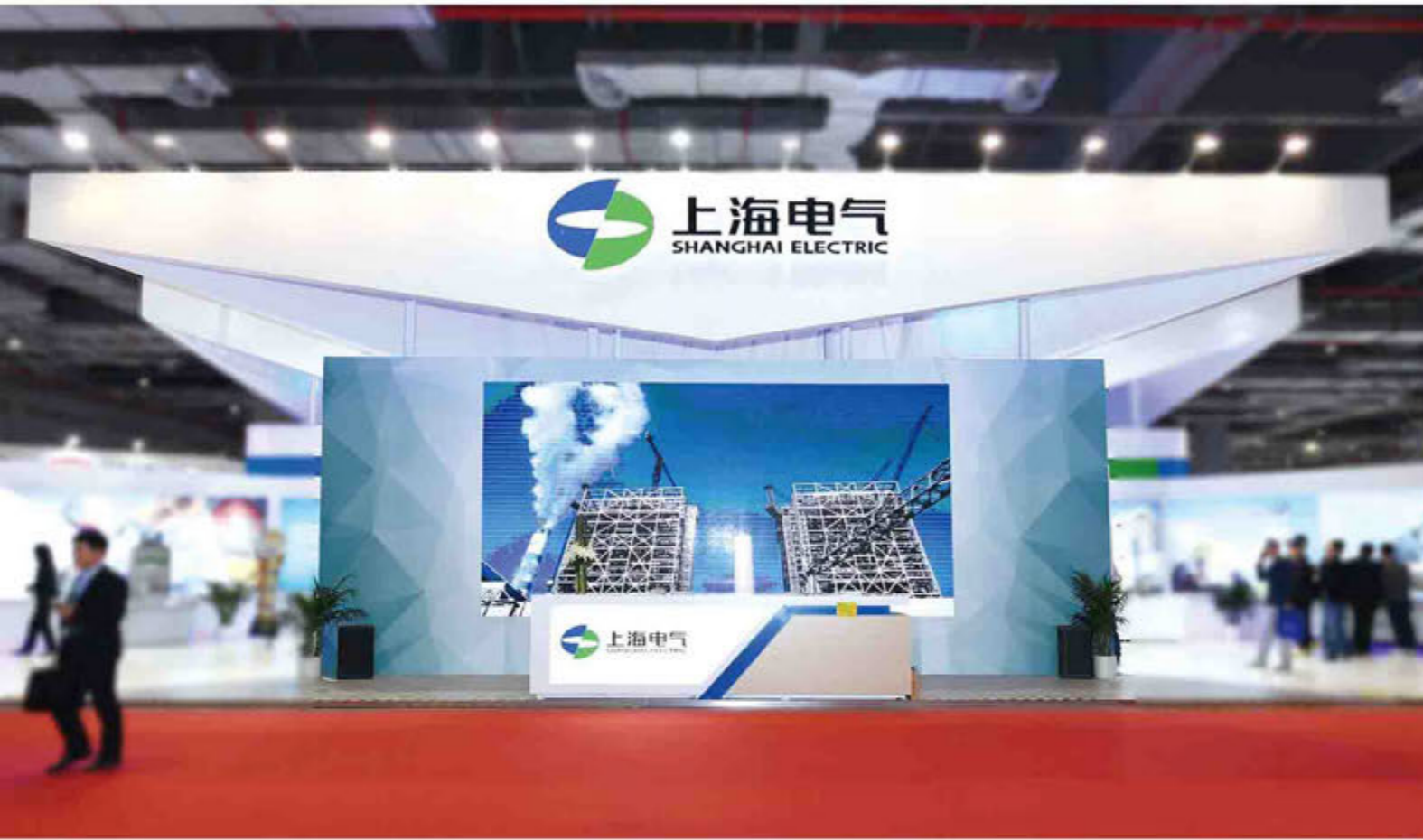
Number	Name of projects awarded	Name of entity awarded	Grade awarded
1	Development of high-efficiency ultra-supercritical boiler with 623°C reheat steam temperature	Shanghai Boiler Works, Ltd.	First class prize
2	Research and development of key technology and products of high voltage frequency converter with three-level vector control	Shanghai Electric Fuji Electric Power Technology Co., Ltd. Central Research Institute of Shanghai Electric Group Company Limited	Second class prize
3	730MW shock-resistant water-hydrogen cooled generator for isolated grid	Shanghai Generator Works under Shanghai Electric Power Generation Equipment Co., Ltd.	Second class prize
4	1GW power generator for inland transportation and internationalization	Shanghai Generator Works under Shanghai Electric Power Generation Equipment Co., Ltd.	Second class prize
5	Study and improvement on standards of key large forging components for thermal power equipment	Shanghai Turbine Works Co., Ltd. under Shanghai Electric Power Generation Equipment Co., Ltd.	Second class prize
6	Manufacturing of green island and equipment with low low-temperature dust removal system	SEC Power Generation Environment Protection Engineering Co., Ltd.	Second class prize
7	Research and application of key quenching technique for heat treatment of high-end equipment	Shanghai Electric Heavy Machinery Casting Forging Co., Ltd.	Second class prize
8	Development of enhanced 660MW subcritical four-cylinder and four-round high and medium-pressure steam turbine	Shanghai Electric Power Generation Equipment Co., Ltd.	Third class prize
9	Development of advanced manufacturing technology of AP1000 nuclear power reactor pressure vessel	Shanghai Electric Nuclear Power Equipment Co., Ltd.	Third class prize

## SHANGHAI ELECTRIC

### Shanghai Science and Technology Awards in 2016 (released in April 2017)

Number	Name of projects awarded	Name of entity awarded	Grade awarded
1	Development and application of key technologies of asymmetric axis servo grinding process and equipment	Shanghai Machine Tool Works Ltd.	Technological Invention Award, First class prize
2	Development of high-efficiency ultra-supercritical boiler with 623°C reheat steam temperature	Shanghai Boiler Works, Ltd.	Science and Technology Progress Award, First class prize
3	620°C high-efficiency ultra-supercritical 660MW four-cylinder and four-round exhausting condensing steam turbine	Shanghai Electric Power Generation Equipment Co., Ltd.	Science and Technology Progress Award, First class prize
4	Development of EPR nuclear power steam generator	Shanghai Electric Nuclear Power Equipment Co., Ltd.	Science and Technology Progress Award, Second class prize
5	Development of key technology for design and manufacture of large-capacity dual internal water cooled generator	Development of key technology for design and manufacture of large-capacity dual internal water cooled generator	Science and Technology Progress Award, Second class prize
6	Estimate of reliability of large-capacity power generating unit and development of new technology for secure serving and application	Shanghai Electric Power Generation Equipment Co., Ltd.	Science and Technology Progress Award, Second class prize
7	Development and application of comprehensive elevator monitoring system based on IOT	Shanghai Mitsubishi Elevator Co., Ltd.	Science and Technology Progress Award, Second class prize
8	Development and application of key technologies for large-scale collection and management of heterogeneous data and intelligent service	Shanghai Electric Networks Technology Co., Ltd.	Science and Technology Progress Award, Second class prize
9	Development of advanced supercritical 350MW two-cylinder steam turbine two exhaust pipes	Shanghai Electric Power Generation Equipment Co., Ltd.	Science and Technology Progress Award, Third class prize
10	Development and application of key technologies of grid-connection testing for large-size wind power generating units	Shanghai Electric Wind Power Equipment Co., Ltd.	Science and Technology Progress Award, Third class prize





### Diversified industrial plan shines at China International Industry Fair

AP1000 nuclear island main equipment and the research and engineering application of critical over 600°C second-reheat technology won the gold and silver prizes at the 19th China International Industry Fair, respectively.



### Sole Winner of “Mayor Quality Award of Shanghai”

On 25 May, the General Office of Shanghai Municipal People’s Government issued the Decision of Shanghai Municipal Government on Commending Organizations and Individuals Winning the 2016 Quality Awards of Shanghai Municipal Government, pursuant to which Shanghai Power Generator Factory of Shanghai Electric Power Generation Equipment Co., Ltd. is the only organization winning the Mayor Quality Award.

# 01

## Creating better value for shareholders

We safeguard the legitimate interests of shareholders according to law and enhance shareholders' understanding of the Company through continuous and standard information disclosure. An effective communication platform has been built to promote good interaction between shareholders and the Company. The Company strives to create value for shareholders and maintains a stable dividend distribution policy. In 2016 and 2017, Shanghai Electric underwent two material assets reorganizations. The equity assets acquired through the reorganizations amounted to approximately RMB7.2 billion, which helped optimize the existing business layout and enhance the manufacturing capacity of Shanghai Electric; and the land assets acquired through the reorganizations can be closely integrated with the Company's future business plan to provide powerful support for the business transformation and increase the reserves of premium resources of the listed company. Thus the reorganizations are conducive to enhancement of the profitability and reduction of asset-liability ratio of Shanghai Electric to increase earnings per share.

### Dividends to shareholders (RMB'000)

	2017	2005	Increase
Total revenue	79,543,794	34,556,890	130.18%
Net profit attributable to shareholders of the parent company	2,659,576	1,672,212	59.05%
Total assets	199,345,759	55,165,348	261.36%
Total shareholders' equity	55,537,083	21,186,282	162.14%



### 1.1 Improving corporate governance to ensure scientific decision-making

In accordance with the requirements of Company Law, the Securities Law and the Standards for the Governance of Listed Companies Shanghai Electric insists on improvement of corporate governance structure and compliance with such requirements of 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 in accordance with relevant requirements.

Controlling shareholder exercises its rights strictly according to the requirements of laws and Company regulations while independent non-executive directors have been professionally performing their duties from the view point of independent third parties with due diligence and the board of directors delegates authority to management on the basis of complete trust and keeps an eye on and assessing the progress of significant projects. The minority shareholders' interests are duly considered and protected when connected transactions between the Company and controlling shareholder took place. Directors, supervisors and senior management members of the Company strictly perform their duties on information disclosure to the public with due diligence and fidelity in accordance with the requirements of relevant laws and regulations, company articles of association and administrative measures for information disclosure and make sure the disclosure true, accurate, complete, timely and fair.

Directors, supervisors, senior management members of the Company comply with the disclosure principles of fairness consciously, actively participate in the subsequent trainings organized by supervising department to understand the latest supervisory requirements, act with due diligence and review relevant matters for decision and express opinions clearly, pay close attention to the news on the Company from public media, which provide effective support to the secretary to the Board, keep examining the information disclosure documents published in designated media by the Company, thus offering effective guidance and constructive suggestions and opinions for the Company's daily information disclosure work and providing a guarantee mechanism for fulfillment of duties by the Board secretary. Directors, supervisors, senior management members of the Company are all with strong awareness of honesty and compliance, due diligence and innovation and development.





### ▶ Shareholders' 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 2017, the Company held one annual general meeting and two extraordinary general meetings.

### ▶ Board of Directors

The board of directors of Shanghai Electric ( "Board" ) currently comprises 7 members, including 3 independent non-executive directors, 1 executive director and 3 non-executive directors, among which one being a female director. The members of the Board have extensive working experience in various professional fields. The Board makes decisions on the significant strategies and performs its decision-making function. The Board has made important contributions to the aspects of strategic direction, remuneration evaluation, risks management and so on. Meanwhile, the Board also focuses and oversees the work performance on environmental protection and taking social responsibility. In 2017, a total of 19 Board meetings were held by means of on-site voting and voting by distance communication, at which 88 resolutions were considered.

### ▶ Supervisory Committee

The Supervisory Committee is responsible to shareholders of the Company for overseeing the operation and financial position of the Company how the directors and senior management discharge their duties as well as providing suggestions for improvement. The Supervisory Committee comprises 4 supervisors, including one staff representative supervisor. In 2017, six meetings of the Supervisory Committee were held.

## ▶ Transforming from "management of assets" to "management of capital"

On 14 November, the Resolution Regarding the Plan on Public Issuance of Exchangeable Corporate Bonds (the "Plan" ) was considered and approved by the Board, which was disclosed on the following day.

At present, Shanghai Electric is undergoing strategic upgrading and industrial transformation from the traditional manufacturing to intelligent manufacturing. With the continuous advancement of strategic transformation, Shanghai Electric has fully exploited its access to capital markets and completed several fund raising activities including private offering, issuance of corporate bonds and convertible corporate bonds, and acquisition and reorganization. The Plan is a beneficial attempt to boost the transformation and upgrading through issuance of innovative financial instruments and provides an efficient means for Shanghai Electric to transform from "management of assets" to "management of capital" . In addition, the Plan will help Shanghai Electric revitalize its existing assets and present an overall better image of Shanghai Electric to the capital markets to reflect the achievements of Shanghai Electric in industrial upgrade and financial innovation and reform in a real-time and efficient way to improve the utilization efficiency of state-owned assets. Recently, the issuance of exchangeable corporate bonds of not more than RMB3 billion by Shanghai Electric to qualified investors was approved by China Securities Regulatory Commission( "CSRC" ).



## 1.2 | Focusing on principal businesses to improve efficiency

We take cultivating a multi-national conglomerate with international competitiveness and brand influence as our strategic goal, and thus keep abreast of the times, pursue independent innovation, and constantly promote a new round of transformation breakthrough for the Group. Facing the slowed growth of China's economy, the demand saturation and overcapacity in China's equipment manufacturing industry and the increasingly fierce competition within the industry and other difficult situations, we take the initiative to adapt to changes in the market environment, take positive actions to cope with the difficulties, and meticulously carry out technology accumulation and innovation integration to promote industrialization of high and new technologies and high-end manufacturing in an attempt to achieve the industrial transformation and upgrading and core competitiveness enhancement.

### » Combination of management and power delegation to fully authorize and stimulate industrial development vitality

Based on the strategic goal of rapid development, the head office is positioned as an industrial assets manager under the strategic guidance oriented management and control model. A set of close-loop strategic performance management system is established to ensure realization of overall strategic goal.

In respect of management mode, the head office has determined four principles for management of industrial groups: firstly, strategy oriented, i.e., under the guidance of the Group's strategic plan, all the management efforts start from strategies and serve to achieve objectives; secondly, reciprocity of power and responsibility i.e. industrial groups assume responsibilities over daily business operations and are endowed with corresponding management power over daily business operations; thirdly, stimulation of vitality, i.e., the employment and benefits distribution rights are enlivened to industrial groups to stimulate the front-line vitality; fourthly, strict control of risks, i.e., risk management and control is strengthened along with the delegation of powers, the audit and accountability mechanism is reinforced and the first batch of management adjustment items has been confirmed. In respect of power over daily business operations, the daily business operation matters of the industrial groups are under the responsibilities of industrial groups, which are not subject to approval by the head office. As to the power over employment and distribution of benefits, certain enterprises have been delegated the power to manage staff employment by means of signing contracts with employees for fixed office terms as a pilot scheme. In addition, for industrial groups which tally with strategic plan and have the per capita sales growth of over 10%, budget filing management is implemented for human resources. For investment management, the fixed-asset investment which meets standards within budget shall be subject to management by industrial groups so as to optimize the investment approval process.

### » Financial innovation service model supports industrial development

We develop value added financial services to support industrial development, continually advance the construction of notes pool and have prepared notes pool related management systems. When the conditions mature, the electronic commercial draft will be issued to the enterprises without line of credit through pledge of notes pool. The overseas platform and foreign exchange service functions will be continuously exerted and the financing service for import and export and financial services of free trade zone will be developed centering on power stations, power transmission and distribution, etc.

In respect of perfecting the comprehensive layout of financial businesses, the approval, preparation and establishment of financial leasing companies will be promoted and the governance structure of the leasing company will be improved. The market-oriented operation will be utilized to serve the development of real economy to promote industrial innovation and upgrade of the Group. In connection to consolidating foundational management, further efforts will be made to speed up the construction of a foundation platform, beef up the construction of information based system and complete the relocation of core business system. Exploration will be conducted in terms of establishment of a risk preference management mechanism and promotion of the construction and application of a new credit rating system.

### » Five pilot enterprises implemented standards for integration of informatization and industrialization

In 2015, five enterprises including Shanghai Mitsubishi Elevator Co., Ltd., Shanghai Boiler Works, Ltd., Shanghai Electric Nuclear Power Equipment Co., Ltd. and Shanghai Electric Central Research Institute were listed as pilot enterprises for national integration of informatization and industrialization. Under the uniform deployment of the Group, 5 enterprises have determined to build "new capacity" according to their own industrial characteristics and centering on corporate value chain. At present, the five enterprises have formed an objective system for integration of informatization and industrialization including overall objectives, milestone objectives and objectives of the capacity for integration of informatization and industrialization, which provides good reference for the preparation of corporate KPI (key performance indicators).

Next, the Group will request the standards implementing enterprises to gradually enhance their capacity starting from the self-assessment report on integration of informatization and industrialization. Besides, the Group will guide standards implementing enterprises to make continuous improvement based on the system for management of integration of informatization and industrialization formed in this stage as the standard specification and popularize the experience with the system for management of integration of informatization and industrialization in other enterprises with the standards implementing enterprises as benchmarks to drive up the integration of informatization and industrialization throughout Shanghai Electric.





### 1.3 | Upgrading strategies to drive exten- sional development

We insist on focusing on the advantageous principal businesses, optimizing existing principal businesses and vigorously developing emerging principal businesses. We insist on the guideline of marketization, professionalization and internationalization, advance innovation-driven development and speed up transformation and upgrading to catch up with internationally leading players. Furthermore, we will speed up industrial restructuring, establishment of global presence and multinational operation as well as the reform of and innovation in systems and mechanisms to join the team of globally leading enterprises at the soonest. We will lead a new round of great and leap-forward development of Shanghai Electric.

#### ➤ Shanghai Electric accounts for over 60% of one hundred domestic thermal power generation units of 1000MW or above which have been put into operation

The No. 4 unit of the 2 x 1000MW unit project of SDIC Meizhouwan Second Power Generation Plant passed the 168h full load trial operation and was put into production. Accordingly, the number of ultra-supercritical power generation units of 1000MW or above has reached 100, of which Shanghai Electric is the supplier of 64 units, ranking the first. The units provided by Shanghai Electric enjoy a good reputation in the market due to leading technologies and reliable quality.

#### ➤ A number of incremental industries will be included in the new round of "3+3" plan

According to the "three-step" strategic objective requirements, the Group re-considered the development strategy for the coming 3 to 6 years. The scope of preparation for the strategic plan is enlarged to include existing industries as well as incremental industries; Relevant strategic plans have been gradually formulated for new energy, environmental protection and water treatment, distributed energy and energy storage, high-end medical treatment and healthcare, intelligent manufacturing, artificial intelligence, military equipment, aviation industry, electronic communication, rail traffic, sea water desalination, digitization and comprehensive system solutions. At present, the Group is engaged in preparation of digital strategy, high-end medical treatment and healthcare, artificial intelligence strategy, intelligent manufacturing, gas turbine strategy, etc.



#### ➤ Energy industry fund of RMB3 billion for development of projects in the field of infrastructure

On 30 August, the Board announced that Shanghai Electric Investment Co., Ltd., a wholly-owned subsidiary of the Company, proposed to participate in the establishment of energy infrastructure industry fund with an aim to provide financial support for the projects in which the Company will participate subsequently and increase economic benefits through the operation of energy infrastructure industry fund. The Board considered and approved the proposal on the participation in establishment of energy industry fund with a contribution of RMB1 billion. The size of the energy infrastructure industry fund as initiated by the inferior LP (limited partner) is RMB3 billion.

#### ➤ Focus on improvement of the transformation speed and efficiency of scientific and technological achievements

On 24 August, the Ministry of Industry and Information Technology published the list of pilot and demonstration projects as platforms of "innovation and entrepreneurship" for the manufacturing industry in 2017, which contains the project themed by Open Platform for Transformation of Scientific and Technological Achievements, Share of Resources and Model Innovation of Shanghai Electric as submitted by Central Research Institute of Shanghai Electric. The application of the project was made with the theme of "innovation and entrepreneurship" platform + reform of organization management model" and "enterprise level 'innovation and entrepreneurship' resources gathering platform". The project is for innovation of the organization management model, online resources gather and share model and achievements transformation route model in the field of manufacturing industry and focuses on solution of the problems with achievement yield efficiency, transformation speed and transformation efficiency to build the corporate internal new "innovation and entrepreneurship" model.



## 1.4 Reinforcing internal controls to prevent risks

Through improvement of the internal control system, we supervise corporate standard operations at different levels and thus have formed an internal control mechanism with mutual constraints. We have continued to improve the internal control system and studied the trend of risks to prevent operational risks. A risk management system has been preliminarily built from three aspects, i.e. construction of organization system, construction of standard system and practical operations, to thoroughly advance risk management. Started from preparation of corporate personalized internal control manual and self-evaluation on the effectiveness of internal control, we have propelled the preparation of internal control manual in stages and effectively impelled self-evaluation. We creatively conduct innovation for the internal control idea and means in terms of publicity, implementation and guidance, intervention in advance, cultivation of capacity and online operation.

### » Further advancement of self-evaluation on internal control

In accordance with the Basic Standard for Enterprise Internal Control and the Supporting Guidelines of the Ministry of Finance, National Audit Office, the CSRC, the CIRC and the CBRC as well as the regulatory requirements under the listing rules of the Hong Kong Stock Exchange and the Shanghai Stock Exchange, the Group has issued the notice on evaluation of internal control and on-site evaluation have been conducted by the internal control team on the effectiveness of internal control of 26 enterprises. 14 important processes are included in the scope of evaluation including funds, inventory, accounts receivable, purchase, sales, contracts, fixed assets, project management, research and development, business outsourcing and expenses management covering 391 control points. In 2017, no material or significant defect was identified in the evaluation on internal control.

### » Enhancement of independence and authority of the Group's internal audit

The Company gathers internal audit personnel at the headquarters for intensive management. Professional internal audit personnel are staffed depending on demands to maintain the independence of internal audit to the greatest extent, truly reflect corporate actual operating conditions and existing problems and embody audit authority. In specific implementation, efforts are mainly exerted in five aspects: optimization of organization structuring to streamline manning; optimization of management mode to promote four "unifications"; intensification of audit for thorough implementation of audit; reinforcement of rectification for defects and follow-up of functional lines; enhancement of audit functions to increase accountability suggestions.

### » Taxation risk management and control system sets a "firewall" for taxation management

The official launch of the indicator management and control system with mutual corroboration of financial and tax information as well as the Manual for Management and Control of Tax Risks and Procedures for Management of Taxation Risks with Overseas Investment prepared by the Company marks the basic completion of the taxation risk management and control system.

The Company has designed a complete financial and taxation risk indicators system inclusive of various quantitative indicators and early warning values, aiming at utilizing enterprise's financial data for tracking, comparison and calculation to reveal enterprise's taxation abnormalities and judge whether there is any taxation risk. Meanwhile, the Manual for Management and Control of Taxation Risks has been prepared covering different categories of taxes, with a view to revealing the risks that should be concerned by enterprises falling into different categories of taxes and suggesting the taxation problems that enterprises should proactively pay attention to in daily operations.

In addition, in order to help "going global" enterprises conduct overseas businesses, the taxation risk management and control system also includes the preparation of Procedures for Management of Overseas Investment Risks.

## 1.5 | Ensuring accurate compliance disclosures to safeguard interests

Shanghai Electric earnestly executes the Articles of Association of Shanghai Electric Group Company Limited and Administrative Measures for Information Disclosure of the Company in accordance with the laws, regulations, and the listing rules of Hong Kong and Shanghai to ensure prompt, authentic, accurate, complete and efficient information disclosure. As the promoter of standard operation, the secretariat of the Board of the Company proactively provides consultation and suggestions for major decisions of the Company to ensure formulation and publication of legal and compliant decisions of the Company. The Company published 189 announcements on A shares in 2017 including 4 periodic reports, and 158 announcements on H shares, including 4 periodic reports. In addition, the Company increased voluntary information disclosure and satisfactorily completed information disclosure with 72 announcements on reorganisation and exchangeable bonds in the stock exchanges of both places, which enhanced the Company's operation transparency and prevented the risk caused by information asymmetry.

Good investor relationship management can promote the improvement of corporate governance structure and enhance the value of the listed company to guarantee long-term stable development. We have always advocated the concept of "respecting investors and repaying investors" and insisted on the principle of proactive, sufficient and continuous communication and exchange. The Company has created a good atmosphere of investor relationship management and has a complete management system and procedures in place. Chairman and workshop directors have participated in investor relationship management of varying degrees. The Company has established good investor relationship channels and maintains communication with investors through telephone, SSE e Interactive Platform, information announcement, meet-and-greet, one-on-one, site visit, results conferences and other means. In 2017, the Company held 2 results conferences and 2 teleconferences after results conferences, 3 results roadshows, 56 visits/telephone survey meetings, participated in 11 investors summits, and received 340 calls via the special lines for investors to ensure close communication with domestic and overseas investors; based on the progress of the Company's projects, the information disclosure was made to properly and timely safeguard the Company's value and enhance effective management and maintenance of investor relationship. We have attained achievements in respect of communication with shareholders and the rate of handling shareholders' opinions reached 100%.



### Keep going to build a more beautiful future

On 4 September, the 2017 interim results conference of Shanghai Electric was simultaneously held in Shanghai and Hong Kong. In addition to results for the period, investors were keener to know the newly appointed chairman's ideas about the strategy and industrial layout for future development of Shanghai Electric. Zheng Jianhua expressed that, after two injections of assets, the parent company of Shanghai Electric's asset securitization rate had exceeded 90%, which, however, was not the ultimate goal of the Company. Instead, Shanghai Electric will also seek for appropriate opportunities and premium assets to consolidate the Company's asset quality. In respect of optimisation of industrial layout, Shanghai Electric has never stopped advancement and will keep going to build a more beautiful future.

At the conference, Zheng Jianhua expressed his confidence in Shanghai Electric's development of the gas turbine market in cooperation with Italian firm Ansaldo to the capital market. Although the gas turbine market in the PRC is still at the outset, upon acquisition of certain equity interests in Ansaldo, Shanghai Electric has successfully made significant breakthroughs through obtaining 33 gas turbines orders and 11 long-term service orders.

After the conference, Zheng Jianhua led a team to hold a 3-day results roadshow in Hong Kong for further communication with shareholders regarding the status quo of business and future strategy of Shanghai Electric.



# 02

## Providing satisfactory products and services for customers

We stick to the concept of “quality foremost, customer first, service optimization” and commit to creating value for the customers and realizing the achievement of customers and ourselves on a customer-oriented and service-oriented basis. The popular recognition from the customers and all communities is the original strong drive for our development. We repay customers’ trust with quality, repay society’s expectations with quality and manifest the craftsmanship of every employee of Shanghai Electric with quality.

### 2.1 Safeguarding customer’s interests to set customers at ease

We devote ourselves to research and development of products and honour our quality commitment. We continuously improve the rules and technical specifications of the Group and enterprises which align to laws and regulations in strict accordance with the Product Quality Law of the People’s Republic of China, the Law of the People’s Republic of China on the Quality and Safety of Products, the Regulations on Administration of Production Licenses for Industrial Products and other laws and regulations and accelerate the formation of a systematic and complete, scientific and authoritative quality supervision system which can satisfy needs. We know very well that quality is the core element that determines the stature of equipment manufacturing industry. We improve the quality of products, engineering and service through technical upgrade and practice “green manufacturing, manufacturing green” through adjustment to the technical route, and provide positive power for urban sustainable development through focus on efficiency. We are of the view that quality is originated from awareness, relies on technology, and is based on management and contained in inventiveness. Insisting on cultural guidance and problem oriented, we have carried out work centering on “customers, suppliers and site” and has formed a good working environment and mechanism through years of accumulation. In recent years, Shanghai Electric has gradually formulated a series of quality management systems and specifications of the Group such as Shanghai Electric Regulations on Quality Works 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. Customers are the resources for development of the Company. Shanghai Electric has always adhered to the professional code of ethics and all employees keep customer information confidential to prevent leakage and ensure security of customer information.

In 2017, there was no recall of products sold or delivered due to safety or health issues.



- 1 Establish Quality Management Whole Process of Information Platform**  
Quality problems were recorded and handled quickly through the unqualified incidents reporting and management system in which the cost of handling unqualified incidents was recorded and linked to SAP system. Quality improvement was discovered through statistical analysis and quality problem on the product and quality improvement project was launched in CAPA (Corrective Action and Preventive Action) management system so as to improve corporate quality efficiency and management continuously.
- 2 Promote Risk Management**  
The Company ran through various management and control risks, identified the risk level and developed the corresponding measures. Risk warning list was issued through identifying abnormal corporate quality indicators in big data analysis and according to the actual quality situation to push corporate management to pay attention to corporate quality management risk and take improvement measures.
- 3 Strengthen Supplier Management**  
The Company promoted the application of SRM supplier management system to realize supplier lifecycle management in the application system, including supplier preselection, supplier evaluation, supplier dynamic management and supplier performance evaluation. Supplier management system was improved, functional distribution was further specified and in line with the requirement of SRM system and supplier management was strengthened gradually to improve supplier management level.
- 4 Promote the Visibility of Quality Cost**  
To improve the quality cost statistics, the losses of rework and repair, travelling expenses, the losses of warranty fund and performance test claim were included in the statistics of quality losses to provide support for quality big data statistics so as to discover the weaknesses in corporate quality management and implement improvement measures.
- 5 Carry out Customer Quality Visit**  
According to the feedback from the customers and the operation of the power generation units, the Company carried out quality visit on the key customers of Shanghai Electric, listened to customers' requirement and evaluated the operation of Shanghai Electric power generation units to provide further service and quality improvement so as to improve customers' satisfaction on an ongoing basis.



## » Highly Value the Customer Complaints

We highly value the handling of customer complaints and have assigned a special person to be responsible for treatment of complaints. We keep records for the handling of customer complaints and the details of complaints, give satisfactory reply to complainants in a prompt way and organize investigation, analysis and processing, and recording of the information of relevant batches of products. The treatment of complaints is mainly in the charge of the quality department and relevant functional departments will form a team to give customer a reply and properly solve the problem concerned before the prescribed time. Meanwhile, the corrective and preventive measures are implemented to ensure high customer satisfaction and 100% response to and treatment of all customer complaints.

### Number of complaints against key industrial groups in 2017

Industrial group	Number of complaints	Number of complaints handled	Rate of response to compliant
Shanghai Electric Power Generation Group	5	5	100%
Shanghai Electric Nuclear Power Group	0	0	100%
Shanghai Electric Wind Power Group	0	0	100%

## » “Self-inspection and self-examination” for biomass projects by Environmental Protection Group

The Environmental Protection Group conducted "self-inspection and self-examination" for four biomass incineration projects under construction in Anhui and streamlined its idea and process in the process of finding problem and resolving problem. The essence of the "self-inspection and self-examination" is to reveal and face the actual conditions of the Group and be practical and realistic. The "self-inspection and self-examination" was conducted not only for previous projects, but also as a warning and sublimation for future new projects. It was required to conduct appropriate rectification for the problems identified and implement the measures prepared to finally form the core technical capacity of the Environmental Protection Group.

## » SETD conducted spot check for the quality of 3 enterprises

As a response to the special action of "two screenings and one rectification" of the State Grid Corporation and to practically enhance the quality management and physical product quality, the SETD conducted spot check for three enterprises including Shanghai Dahua Electrical Equipment Co., Ltd., Shanghai Nanhua-Lanling Electric Co., Ltd. and Shanghai Najie Electrical Complete Sets Co., Ltd. and sampled and sealed the switch cabinet products of three projects for general examination, insulation test, mechanical operation, main circuit resistance measurement and temperature rise test by a third party testing organization in accordance with the testing requirements of the State Grid Corporation. In the end, the product quality was highly recognized by State Grid Shanghai Municipal Electric Power Company.

## » Indian user visited our power station due to perfection

On 13 March, Vinod, New Project Development Director of Calcutta Power Company of India, came to Shanghai only for expressing his gratitude to Shanghai Electric for the "perfect" performance of Shanghai Electric in two projects in Chandrapur and Haldia. Vinod spoke highly of the performance and quality of the major equipment provided by Shanghai Electric and expressed his sincere thanks to Shanghai Electric for its help to Calcutta Power Company in project implementation and for the excellent performance of the project team. He said that the perfect completion of the projects in Chandrapur and Haldia was the result of the sincere cooperation of Shanghai Electric and Calcutta Power Company. He hoped that there would also be opportunities for cooperation in the field of new energy in the future.



» **A team composed of members from a number of industries paid a return inspection to the rail traffic in Nanchang**

A team composed of members from Shanghai Mitsubishi Elevator Co., Ltd., Shanghai Thales Saic Transport Co., Ltd., Rail Transit Group, SETD and Automation Group went to Nanchang, Jiangxi for a return inspection of the operation of Rail Transit Line No. 2 in Nanchang which was opened to traffic on 18 August.

Shanghai Electric is responsible for the 93 elevators, rail transit signal system, part of rail transit equipment and maintenance services of metro line No. 2 in Nanchang. In order to ensure completion of installation and debugging before the Army Day, the project team made elaborate deployment and reasonable arrangements, leading to completion over 1 month ahead of schedule. Nanchang Rail Transit Group fully affirmed the performance of Shanghai Electric's equipment and service in the project and expressed that the quality of Shanghai Electric was spotless. Next, the construction of the latter section of metro line No. 2 and metro lines No. 3, 4 and 5 will be intensively conducted. Based on the previous excellent performance of Shanghai Electric's products and maintenance services in line operation, Nanchang Rail Transit Company wants to engage in closer cooperation with Shanghai Electric in the next projects.

The return inspection was conducted in the principle of mutual support, mutual assistance and optimised configuration of resources among industries. In addition, Shanghai Electric also highly recommended SETD and Automation Group which introduced their core business segments and products. In the previous project cooperation, Nanchang Rail Transit Company saw the technical capacity, product quality and service level of Shanghai Electric and is willing to cooperate with SETD and Automation Group in terms of relevant product and equipment.

» **Follow-up phone calls to monitor the quality of engine repair services**

A few days before the Spring Festival, Shanghai Power Generation Plant of Shanghai Electric Power Generation Equipment Co., Ltd. called Jiangsu Jianbi Power Plant to understand the usage of insulation braided tube for the rotor after replacement due to water leakage. The call represented the "4S store service model" first launched by Shanghai Power Generation Plant and Jianbi Power Plant was the first experience.

In the call, the power plant gave a score to Shanghai Power Generation Plant in terms of response speed, skills of maintenance personnel and attitude. The score of satisfaction as reflected by the first "questionnaire" was close to full mark. The power plant expressed strong interest in the whole-life cycle service system and 3G goods shelf service product currently propelled by Shanghai Power Generation Plant. Such a follow-up phone call strengthened their confidence.

After the implementation of the follow-up phone call system, in addition to prompt understanding of users' satisfaction towards the on-site services provided by the personnel dispatched by the enterprise, the focus will also be placed on recommendation of the whole-life cycle service idea and the individualized, professional and life-line service mode and service products to users.



## 2.2 Providing quality services to win trust from customers

Attitude determines the altitude, and service creates value. Shanghai Electric is realizing the effective integration between manufacturing and service industries and showing a coexisting tendency of integration, interaction and interdependence. The servitization of manufacturing industry has become a major driver for the industry upgrading of Shanghai Electric and a key measure to enhance the core competitiveness of Shanghai Electric.

### High efficiency services won appreciation from customer

SEPG Service Co., Ltd received a letter of appreciation from Phase-II power plant of Jiangxi Ganneng Co.,Ltd in Fengcheng, which expressed its gratitude for the outstanding performance of Shanghai Electric's team on Fengcheng project during the project implementation. The No. 5 and 6 power generation units of Fengcheng power plant are the first and third 700MW supercritical through-flow reconstructed units accepted by SEPG Service in China with a short delivery period and heavy design and manufacturing tasks. During the middle and later periods of equipment reassembly for No. 5 unit and in the face of axial dimensions out of tolerance provided by other suppliers, the project department of SEPG Service returned that very night for emergency repairing. The attitude and efficiency of the department in solving problems were highly appreciated by the customer.

### Quality services in return for "Tree of Life"

The general manager of Zheneng Taizhou Second Power Plant came to Shanghai Turbine Works under Shanghai Electric Power Generation Equipment Co., Ltd. with a medal engraved with "Tree of Life" to thank the plant for its great support in successfully putting into operation of two units of Taizhou Power Plant. Zheneng Taizhou Second Power Plant totally has two 1,000MW gas turbine units, which passed the 168-hour trial operation on 14 September and 14 December 2015 with outstanding performance. During the infrastructure construction of the power plant, Shanghai Turbine Works delivered equipment on time and arranged skilled service experts on the field, which guaranteed that the power plant can be put into operation for power generation as scheduled. During the operation, the two units passed strict performance tests and all indicators recorded outstanding performance. The "Tree of Life" with profound implication shows the intention of both parties on further and deep cooperation.

### Quality services moved customer in Yunnan

Shanghai Electric Group Shanghai Electric Machinery Co., Ltd. received a letter of appreciation from Petro China Yunnan Petrochemical Co., Ltd., which expressed the gratitude to after-sale staff for their quality services in ensuring the completion of project milestones on time by the customer. It highly appreciated the working attitude of the service staff.

In October 2016, the main wind turbine with three units produced by Petro China Yunnan Petrochemical Co., Ltd. started trial operation. In order to ensure the smooth progress of the trial operation, Shanghai Electric Machinery arranged after-sale staff to provide assistance on the field. During the period, the service staff guided the installment and trial operation twice at the site of the Yunnan project. They actively cooperated with on-site technical and construction staff and solved various technical problems. They also inspected backup turbines and eliminated potential safety hazards, which guaranteed the completion of trial operation of the main wind turbine on time and deeply impressed the customer.



## 2.3 | Emphasizing innovation-driven development to better satisfy customers

We deeply know that innovation is the best gift for returning customers. We adhere to the social notion of responsibility on innovation and creativity, sustainable development and win-win cooperation. We will maintain continuous investment in research and development through science and technology innovation, domestic and international cooperation as well as introduction and fostering high-end talents. We will consistently conduct innovation and creativity to bring more surprises to customers.



## Intellectual Property Rights

In 2017, we applied for 766 patents, among which entitled 540, and we were in possession of 4,043 effective patents as at the end of 2017, including a total of 146 overseas patents entitled, 227 software copyrights, held or participated in formulating 346 various industrial and national standards.

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 Rights Management Norm, the Industrial Enterprise Intellectual Property Rights Management Guideline and other relevant laws and regulations and based on the actual conditions and development demands, we formulated the Intellectual Property Rights Management system of Shanghai Electric Group Company Limited to promote the technology progress and technology innovation of the Group, improve the market competitiveness, strengthen the management of intellectual property rights and prevent the loss of intangible assets. We adopted effective measures and means on the intellectual property rights to guarantee the management of intellectual property rights in its possession from being infringed and avoid the infringement of others' intellectual property rights in the management.

## Rolling preparation of "Fifteen-Year Science and Technology Plan"

The Fifteen-year Science and Technology Plan (Revised Edition in 2017) of Shanghai Electric was officially released on 7 August. We made significant adjustments and changes to the 18 key fields of the original four main domains. The traditional energy equipment and power transmission and distribution equipment in four main domains were adjusted into traditional energy equipment and new energy domain corresponding to three main businesses of the Group and newly added the integrated services domain. For the 18 development fields, we newly added environmental protection, the Internet of Things, engineering services and other fields to support the upgrading of the strategies of the Group and achieve technical development in advance. We plan to strengthen the analysis on technology investments to ensure that they are centralized in key domains and fields. Through the constant communication between the three levels of the Group, the concentration of the Group's technology investments was maintained over 90%, which guaranteed that the investment on technology and innovation of the Group lean to key industries and supported the development of key industries.

## New: Four major technology development directions & 18 key technical domains

### Traditional energy equipment

- High efficiency and clean coal-fired power
- Gas turbines
- Nuclear power
- Primary equipment for power transmission and distribution
- Secondary equipment for power transmission and distribution

### New energy equipment

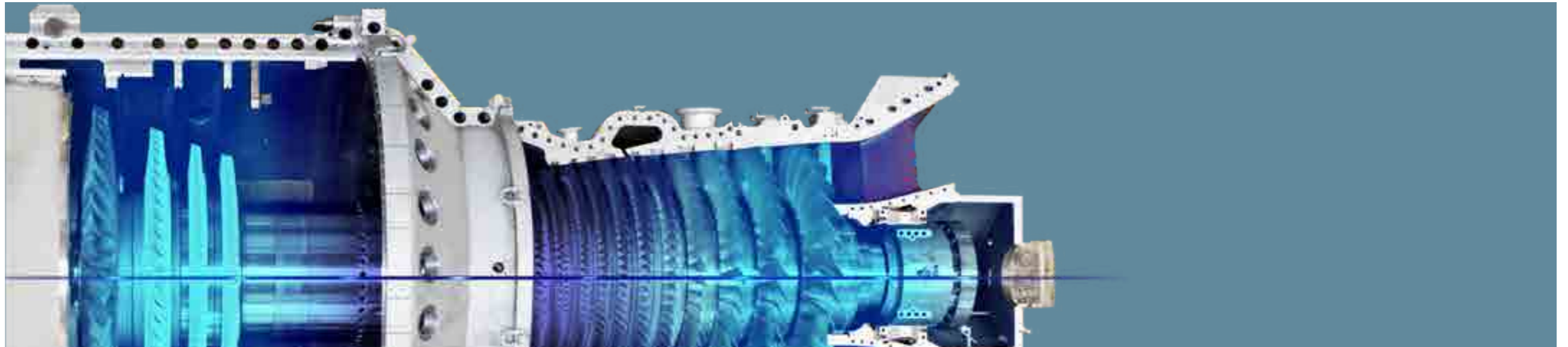
- Distributed energy
- Energy storage
- Wind power
- Solar thermal power

### Industrial equipment

- Industrial fundamental parts
- Industrial equipment
- Intelligent system
- New equipment technology

### Integration services

- Environmental integration technology and equipment
- Engineering, service technology
- Advanced design, simulation
- Internet of Things technology
- Intelligent plant technology



## Progress of Key Science and Technology Projects in 2017

### High efficiency and clean coal-fired power

In the coal-fired power market, we actively promoted the development of new products and shortened the research and development period of products. Over ten representative new products were launched, including the second-generation 350MW supercritical CFB boiler, the 600MW supercritical boiler with the target of fully combusting of Xinjiang high-alkali coals, the new type of high efficiency supercritical 350MW two-cylinder two-exhaust gas turbine, the first 660MW dual internal water cooled generator with and the 500MW water-hydrogen cooled gas turbine generator in the world and the biggest 1,260MW full-speed thermal turbine generator in the world. For the development of complete sets, facing the huge demand for generators with an installed capacity of less than 300MW in overseas markets, we improved the standardized, and modularized and optimized development of small units with an installed capacity of less than 300MW, which improved the product efficiency, reduced the manufacturing cost of units and effectively improved the competitiveness of small units in overseas markets.

### Nuclear power

We sped up in the intelligent manufacturing of nuclear power and conducted innovation and improvement in the manufacturing technology of main equipment and products for nuclear island to actively promote the integration of informatization and industrialization. We conducted the "study on the application of 3D holography-based equipment model in manufacturing enterprises" and the "intelligent plant for the manufacturing of main equipment for nuclear

island in the Lingang Area", which laid solid foundation for the promotion of intelligent manufacturing in nuclear power programs in the future. In addition, for the fourth-generation nuclear power, we actively conducted cooperation with Shanghai Institute of Applied Physics, Chinese Academy of Sciences and participated in the research and development of thorium-based molten salt.

### Wind power

We consistently improved the independent development capacity to promote innovation in key technologies and achieve significant results and breakthroughs in offshore wind turbines with huge installed capacity in particular. In the end of 2017, the first offshore wind turbine with an installed capacity of 6MW and a blade length of 154m was successfully installed. The first wind farm for the experiment of sample high-powered offshore wind power turbines saw the offshore wind turbine with the biggest power in China. We successfully won the bidding for orders for 10 units of 7MW equipment and the first order on 7MW offshore wind power was implemented. "Feng Yun 1.0", the intelligent cloud maintenance platform of Shanghai Electric, conducts all-around monitoring, maintenance and improvement on wind turbines with big data and cloud computing. It has successfully completed the remote access for more than 60 wind farms in 2017. We completed the establishment of the new operation maintenance center and the data enter and achieved a new operation and maintenance management model to provide intelligent and digitalized operation and maintenance services covering all dimensions and cycles for all wind farms under Shanghai Electric.

### Energy storage

Shanghai Electric Central Research Institute has initiated the research and development on the technology of lithium titanate batteries since 2012 and has developed proprietary intellectual property rights in battery materials, cells, battery management system, system integration and other technologies covering the whole industry chain. On 15 May, Shanghai Electric and Guoxuan High-Tech entered into a joint venture contract on the joint establishment of an energy storage battery joint venture with a registered capital of RMB300 million. After the transformation of research results in lithium battery, it completed the finalizing of the energy storage system for 250kW container vanadium batteries and the demonstration on the commercial application of 2 sets of energy storage systems in the vanadium battery industry in 2017.

### Medical equipment

For rehabilitation robot business, the arms and legs rehabilitation robot has passed the risks analysis. We conducted optimized design on machinery, electric and control. The legs rehabilitation robot has passed the EMC inspection by third parties. We also completed the expanded inspection (with GB24436 and YY0900 standards) on legs rehabilitation robot conducted by Shanghai Testing & Inspection Institute for Medical Devices and will conduct clinical test and study on projects of Science and Technology Committees.

### Intelligent transportation

Focusing on "green, environmentally friendly, intelligent, interconnected and comprehensive system solutions" and under this background of strategic development, we completed the construction of the demonstration project on the intelligent and electronic rail transportation system in the Lingang Area in December after more than 3 years of research and development and hard-working, and it has been officially released. The intelligent and electronic rail transportation system of Shanghai Electric adopts advanced vehicle-mounted sensor and control technology and achieves road informatization and vehicle intelligentization. It is characterized by precise driving, fewer space, huge and flexible marshalling capacity, safe and stable coordination between vehicles and roads as well as strong adaptation to road environment. It can finally achieve upgraded control over transportation with high efficiency and low cost.

## Shanghai Mitsubishi boosts the speed of Shanghai Tower

On 26 April, Top of Shanghai on the 118th floor of Shanghai Tower, the world's second tallest building, the tallest building in China and a landmark building in Shanghai, officially opened to the public. The super high-speed elevators directly to the observation deck with Guinness World Records are installed and maintained by Shanghai Mitsubishi. It takes only 55 seconds for the super high-speed elevators to travel from the second floor underground to the 118th floor. It is learnt that 11 elevators at the Shanghai Tower have set three Guinness World Records and all of the elevators are installed and maintained by Shanghai Mitsubishi.

## » Pioneering equipment in the world

### ► 660MW dual internal water cooled generator

After 9 years of elaborate development, the 660MW dual internal water cooled generator, which is currently the "water-water-air" cooled generator with the biggest capacity in the world, was successfully delivered on 3 June and they would be transported to Inner Mongolia Jingneng Wujianfang Power Plant. We made 9 major technological innovation achievements and obtained 7 patents during the development, which effectively guaranteed the development quality of the product. Statistics show that its efficiency reaches 98.95%, which is comparable with hydrogen cooled products and significantly higher than the national standard of 98.8%. It also means that our technology on the first dual internal water cooled generator in the world has reached a new level.



### ► 300Mvar new-generation phase modifier

On 28 September, the summing-up meeting on the successful development of the first 300Mvar new-generation phase modifier in the world was convened. The 300Mvar new-generation phase modifier is a reactive power compensation device with the biggest capacity and two-way fast adjustment ability in the world. It is characterized by outstanding dynamic performance, high safety and reliability and convenient operation and maintenance. The progressiveness of the product technology lies in no selective rotator overhauls between two overhaul periods, high integration and automation of auxiliary systems as well as the one-key start-stop function, which can meet the requirement on unattended operation and in some other aspects.



### ► 500MW water-hydrogen cooled gas turbine generator

On 14 December, the first 500MW water-hydrogen cooled gas turbine generator in the world was successfully developed. The product adopts technologies on the third-generation generator and covers the "electric island" of gas turbines, mainly including the body of the generator, the hydrogen oil water system, the electric system and other parts. It is applicable to F-class single-shaft gas-steam combined cycle units, H-class multi-shaft gas-steam combined cycle units and coal-fired units.



### ➤ First 7.0 “offshore wind power units” to be installed in Pinghai Bay

Shanghai Electric’s 10 sets of 7.0 generation units won the bidding for the offshore wind power project of Fujian Sanchuan Company. It is the offshore wind power generation unit with the biggest capacity in commercial operation in China. The 7.0 offshore wind power units introduced by Shanghai Electric are fully upgraded and transformed on the basis of the 6.0 version. The units adopt the permanent magnet direct drive technology without gearbox and the unibody blade technology. The coordinated and optimized design on key components makes it have a larger capacity with higher performance and is easier to be controlled. Compared with 6.0 units, the 7.0 version can improve the power generation efficiency by 10%.

The project will be located at Pinghai Bay offshore wind farm in Putian City, Fujian Province, the largest offshore wind power farm in China. It is expected that the project can reduce the emissions of carbon dioxide by 2.1 million tons and provide clean power of about 2.2 billion kWh every year after the project is completed and put into operation.



### ➤ Yangjiang No.4 generator officially put into commercial operation at the highest speed in the world

On 15 March, No. 4 generator of Yangjiang Nuclear Power Station was officially put into commercial operation after passing the 168-hour appraisal on demonstration operation. It took 51.9 months from the commencement of construction to the completion and putting into operation, setting the shortest construction period for domestic CPR1000—the “second generation plus” nuclear power generation units and representing the highest level in the world. Yangjiang Nuclear Power Station has 6 units of 1GW power generation units. Some main equipment for nuclear island and conventional island equipment are supplied by Shanghai Electric. Previously, No. 1, 2 and 3 generators have been put into commercial operation and all of the units have recorded stable operation and outstanding performance in many operation cycles without any unscheduled suspension. It created substantial results for the owner and won a good reputation for Shanghai Electric in the industry. It is learnt that it generally takes 60 months for the construction of each 1GW nuclear power generation unit in the world and the construction period of Yangjiang No. 4 generator can be called “the quickest in history”. The high efficiency is based on the experience of Shanghai Electric in the manufacturing of various nuclear power units and is closely related to the establishment of the internal experience feedback mechanism, which implemented various improvement measures on design, technology, plans and arrangements, quality control, supplier management and on-site services into the implementation of projects.



## Creating a caring family atmosphere for employees

Employee development has always been a fundamental focus of the Group. The Group promotes a "people-oriented" modern management style, and created a favorable environment that enables employees to fulfil their full potential and maximize their personal value. The Group also endeavored to improve its system for employee growth and development, provide protection and create conditions, thereby promoting joint growth and development of the Group and its employees.

### 3.1 | Maintaining law-based employment practices and sharing achievements with employees

#### Protection of Employee Rights and Interests

From the perspective of strategic development, the Group is well aware of the importance of protecting the rights and interests of employees, and will strive to protect the rights and interests of employees in an in-depth, detailed and pragmatic way with the 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, the Company establishes and improves the Group's relevant system and operating procedures such as the Remuneration Management, the Recruitment Management, the Unified Holiday Management and the Employee Handbook, etc. The Group has and will continue to focus on equal employment opportunities, diversification of employment and anti-discrimination of employment as important issues, and will be committed to respect employee's gender, age, nationality, race, disability and religious beliefs, etc. The Group fully respects the personal dignity of individual employees, humanistic care and positive incentive, takes into account employees' personal safety, environmental safety, physical and mental health as well as career development when setting up our long term goals, and encourages the employees to uphold the principle of frankness, faithfully perform their duties and treat people and work with integrity.

In order to enhance the labour protection of female and juvenile employees and protect the personal health of such employees, the Group formulated the Regulations on Labour Protection of Female and Juvenile Employees in accordance with the Special Rules on the Labour Protection of Female Employees, the Labour Protection of Female Employees in Shanghai and the Special Rules on the Protection of Juvenile Employees. The Regulations explicitly provides that no member enterprise may lay off or dismiss female employees or reduce their wages due to marriage, pregnancy, maternity and breastfeeding reasons; no discrimination against women in staff grading, promotion and salary adjustment of industrial workers was allowed; and member enterprises must comply with the regulations related to labour protection of female employees during menstruation, pregnancy, maternity and breastfeeding and no member enterprise may hire minors under 16 years old. In 2017, the number of disabled employees was 82.







SHANGHAI ELECTRIC

Staff Structure

Year	Total number	Male	Female
2015	27310	21998	5312
2016	29293	23797	5496
2017	29552	23787	5765

Staff Structure by Age

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
2015	7	7197	7936	6428	3176	2566
2016	8	7704	8495	6893	3399	2794
2017	8	7774	8570	6955	3430	2815

Education background

Year	Doctorate	Master's degree	Bachelor's degree	College's degree	Below college's degree
2015	108	1676	9312	5884	10330
2016	147	2249	10400	6546	9951
2017	119	2646	10853	6520	9414

Classification by job functions

Year	Management	Production	Sales	Technical research	Finance & audit	Administrative and logistics
2015	1869	12814	2523	7803	720	1581
2016	2036	13768	2636	8495	879	1479
2017	2055	13866	2659	8580	887	1505

Staff Turnover (total number of employees)

Gender		Age				Region	
Male	Female	Under 30 years old	30-40 years old	40-50 years old	Over 50 years old	Shanghai	Non-Shanghai
2.4%	0.5%	1.4%	1.1%	0.36%	0.04%	2.9%	0



Promote harmonious labor relations

In-depth promotion of collective negotiation on wages

At the collective negotiation meeting, the Electromechanical Trade Union and administrative department reached a consensus on preparation of the Special Collective Contract on Wages of 2017 (Draft). In addition to establishing the mechanism for collective negotiation, supervision and inspection of wages and the Measures for Supervision and Inspection of Collective Negotiation on Wages, joint supervision and inspection were conducted for 10 enterprises including collective negotiation, standardization of performance procedures and execution of collective contract terms.

Enhancement of democratic management of employees' congress

At the second session of the Second Employees' Congress, the Special Collective Contract on Wages of 2017, the Rewards and Punishments Management System and other documents were approved, employee supervisors were elected and the joint meeting system for employees' congress was established. In addition, training was provided for the employees' representatives of certain joint ventures controlled by foreign investors and efforts were exerted to promote the establishment of a multi-level employees' congress system. Meanwhile, the Company also conducted survey on democratic management of making factory affairs public and democratic evaluation of cadres at the employees' congress.

Improvement of legal aid services

The legal volunteer team was beefed up and a "menu type" legal aid plan was launched. Throughout the year, a total of 137 cases related to non-contentious affairs were resolved, including 103 cases of legal advice, 6 cases of complaint by letters, 23 cases of legal document drafting, 1 collective consultation, and 4 non-litigious mediations and 1 litigation case. The Company participated in the review of the restructuring plan of 26 enterprises and proposed suggestions on the main issues in review plan that involve employees' vital interests and whether the democratic procedures are performed for the restructuring plan.

Meanwhile, legal consultancy services were provided to enterprises on site to guide the standard treatment of labor relationship. Moreover, the Company conducted publicity on rule of law for migrant workers and organized the legal publicity team and teachers from the Law School of East China University of Science and Technology to provide three legal publicity and consultancy campaigns themed by "Adherence to Law in the Pursuit of Dreams" for, and was well received by, over 250 migrant workers to enhance their Legal awareness. These campaigns were welcomed by migrant workers.

### 3.2 | Stressing occupational health and protecting employees' interests

Insisting on the guideline of "focusing on prevention and combining prevention with control", we strictly comply with relevant national laws and regulations on occupational health, earnestly implement the requirements of superior competent departments and solidly proceed with occupational health management, striving to provide a safe and healthy work and production environment for our employees.

#### ➤ Care for employees' health and safety



In the summer of 2017, a continuation of hot weather Shanghai triggered red alerts for high temperatures. In order to cope with extremely high temperature and guarantee the health and safety of front-line employees, the subsidiaries of Shanghai Electric took heatstroke prevention measures based on the actual conditions and offered considerate care for front-line employees in high temperature.



#### ◎ Casting and forging operations: leadership on-duty and pair work arrangements

The forging products for nuclear power plants demand very high requirements on quality. However, in the "sauna-like" weather, air temperature in ingot moulds could be up to about 50°C even at night and the workers beside the electric or refining furnaces had to work in face of molten steel with the temperature of over 1600°C.

In order to ensure heatstroke prevention, leadership on-duty and pair work arrangements were adopted at our plants. For night shifts, leaders were required to take turn for night shifts to provide on-site coordination and direction. No employee was allowed to enter enclosed and muggy environment including ingot moulds and alloy warehouses alone unless he/she was accompanied by another colleague so as to ensure immediate reporting in case of any incident. Duty and dispatching rooms at our plant were also equipped with medicine chests storing heatstroke medicine which were subject to inspection by specially assigned persons to ensure medicine chests stored all necessary medicines. In 2017, there was no heatstroke occurred at any of our plants.

#### ◎ On-site construction: taking rest when temperature was high

In Tianchang, Anhui, the 1x30MW Tianchang biomass power generation project was scheduled to be put into production at the end of the year. Therefore, the project schedule was pretty tight. In order to ensure health and life safety of construction personnel, Tianchang Project Team improved various heatstroke prevention measures and emergency response plan and monitored the temperature at construction area in a real-time manner. Once the temperature exceeded 35°C, the aloft work would be stopped, outdoor construction would be reduced, and safety inspection would be conducted daily for the food and drinks supplied at the construction site. The

tableware and cleaning products were required to be stored in dedicated cabinets and measures were taken to ensure sufficient supply of heatstroke prevention drinks including mung bean soup and tea.

As most of the construction works for the project were conducted outdoor, the staggered working hour system that allowed workers to take rest when temperature was high was adopted on the project site since June. The time to start work in the morning was brought forward to 06:00 a.m., the time to take a break at noon was moved up to 11:00a.m. and the time to resume work in the afternoon was postponed to 3:00p.m., so as to prevent outdoor operations in high temperature.

#### ◎ Logistics: optimization of transportation routes to avoid high temperature

After completing the transportation of a finished nacelle, the workers' clothes are often soaked wet from sweat. Shanghai Electric Wind Power Group strictly complied with the 5S management approach in precision management for large, medium and small components and low value consumables required for all workstations to facilitate scapemen to find the materials required rapidly, and kanban management was utilized to enhance the linkage between production and assembly. In addition, it has also prepared new transportation rules and delivered the required components to the assembly workstations regularly according to the production demands of each workstation to avoid the period of high temperature. The transportation of finished nacelles is arranged to be conducted at night to prevent haul in the sunshine. Regular transportation to the designated sites reduced the workers' outdoor work time and realized seamless connection between production and logistics transportation, which greatly reduced the time for waiting materials and transportation.



### 3.3 | Increasing vocational training investment and relying on talents to grow stronger

We hold that talent resources are the primary resources. Therefore, we continue to increase investment in various talent development programs and service programs in favor of the employees, with an aim to provide "people-oriented" service for employees and to promote the joint growth and development of both our employees and our Group.

Training by gender and employee category

	Female			Male		
	senior management	Mid-level management	Employees	senior management	Mid-level management	Employees
Coverage rate	100%	100%	99.7%	100%	100%	99.7%
Average time (day)	5	6	3.4	5	6	3.4

#### » Enhancement of occupational health management

On the basis of identification of occupational hazard risks and assessment of occupational health management in 2016, in 2017, the Group developed the Measures for Management and Control of Occupational Disease Hazards of Shanghai Electric covering 9 categories consisting of 24 important risk points based on the 37 occupational hazard factors of the Group, which provided a management and control model of the management and control of occupational disease risks and promote the effective implementation of the three-year action plan on occupational health of the Group.

#### » Launch of the three-year action for prevention and control of occupational diseases

The Three-year Action Plan on Overall Enhancement of Prevention and Control of Occupational Diseases of Shanghai Electric for 2017-2019 specifies that enterprises shall prepare the Plan on Rectification of Non-Conformities in Respect of Corporate Occupational Health and Implementation Scheme Thereof covering the tasks, time and requirements based on the non-conformities as set out in their respective reports on assessment of corporate occupation health. Previously, the Group had assessed the status quo of management of occupational health of certain production enterprises and identified 86 hazardous factors that could cause occupational diseases, including 14 arising from dusts, 64 arising from chemical poisons and 8 physical factors. Meanwhile, the Group also stresses that enterprises should strengthen their responsibility awareness for prevention and control of occupational diseases, consolidate the construction of basic capacity for prevention and control of occupational diseases, and enhance the management of, and technical measures for, prevention and control of occupational health while setting up and maintain a proper record system on prevention and control of occupational diseases.

#### » Focus on trainings of young employees with high potentials to build a talent pool for urgently needed professionals

Since 2017, we have launched the "HPT" training program for young employees to develop urgently-needed professionals of various fields. The entire program is based on the strategic idea of consolidating the headquarters and laying a solid foundation for our industrial group and aims at cultivation of a batch of high-potential international talents with global vision and professional background for the Group with the focus placed on outstanding young employees who have worked for us for 5 to 9 years and have excellent performance, strong professional knowledge and development potentials.

#### » Improvement of career development channels and qualification assessment system for all types of talents

We have established career development channels and qualification assessment system for technical and skilled personnel. The channels include 6 clear development routes. Technical personnel include senior experts, experts, leaders, elites, key personnel and reserved personnel; skilled personnel include skill masters, craftsmen with unique skills, craftsmen with exquisite skills, probationary craftsman, senior technicians, and technical workers; in respect of qualification, key performance indicators were established as the basic basis for hierarchical assessment; in terms of assessment, comprehensive measurement is conducted from the perspectives of capacity, speciality and performance; as to cultivation, training and certification programs have been established for channels at different levels.



### » Zheng Jianhua visited Li Bin: You are the worker representative of the manufacturing industry of China

On 8 September, Zheng Jianhua, Party secretary and Chairman of the Company, paid a visit to Li Bin, a National Model Worker, at the Hydraulic Pump Factory of Shanghai Electric Hydraulic & Pneumatics Co., Ltd. to understand the innovation achievements, operation and factory operating conditions of Li Bin CNC Technology Studio and called for further publicity and promotion of Li Bin spirit and giving play to the role of Li Bin Studio.

### » “Foreign examiners” visited talent base

On 17 May, the Presentation Meeting for Consulates in Shanghai in Relation to the Bid for the 46th World Skills Competition was held at Shanghai High-skilled Electrical Talents Cultivation Base. At the 2016 conference of WorldSkills International Organization, the Ministry of Human Resources and Social Security of the PRC announced to apply for holding the 46th WorldSkills Competition in 2021 and Shanghai will be host city. As one of the first batch of the high-skilled talents cultivation bases recognized by the Ministry of Human Resources and Social Security and Shanghai government, Shanghai High-skilled Electrical Talents Cultivation Base enjoys a high reputation and is representative in respect of cultivation of high-skilled talents. After the presentation meeting, the consul generals, heads and consul general representatives of 26 member countries of WorldSkills International Organization visited Shanghai High-skilled Electrical Talents Cultivation Base.



### » Two seminars targeted at young cadres were held

On 11 October, the seminars for young leaders and management personnel of Shanghai Electric were concluded. As one of the important initiatives for implementing the “double optimization” project of the Group’s Party committee, the 2017 seminars for young leaders and management personnel of Shanghai Electric officially kicked off in June. The pre-scheduled training program was completed after over 3 months of study composed of 7 stages. The two seminars with 30 trainees each focused on the actual conditions of Shanghai Electric and senior management were invited to give lectures on business lines. The training program, which required each trainee to give a presentation on what they have learned at the end of the courses, aimed at enhancing trainees’ ability for strategic thinking.





### 3.4 | Showing care for employees and pulling together to drive development

It was not possible to have development without employees' contribution and participation, their exploration and creation, their passion and wisdom, as well as their concerted efforts. We will create a bright future with the creators.

#### » 53 employees of Shanghai Electric engaged in finance and accounting obtained international qualification certificates

On 28 April, 53 employees of Shanghai Electric engaged in finance and accounting obtained the certificates of International Finance Manager. In particular, 48 personnel obtained the certificates of Senior International Finance Manager and 5 obtained the certificates of Intermediate International Finance Manager. In the new period, the financial function of the financial and accounting personnel of Shanghai Electric should achieve the transformation of "financial accounting – process expert – management accounting – value creation". The trainings and examinations of International Finance Manager courses are of great significance to the enhancement of the professional skills of financial and accounting team.

#### » Training on legal knowledge was provided for personnel in charge of signing contracts

In order to practically enhance the capacity of officers of the Group's subsidiaries in charge of signing contracts to address legal risks, the human resources department and legal department of the Group provided the training at the end of last October, with a pass rate of 82.86% achieved for the examination. In addition, training sessions were also provided for the officers of Wind Power Group and Nuclear Power Group in charge of signing contracts and realised good effects. As of now, the training program has been held for 3 years and plays an active role in safeguarding corporate properties and transactions.

#### » Gathering strength to usher in the New Year

A New Year starts with a new step. At the beginning of the New Year, the trade unions of a number of enterprises carried out diversified small cultural and sports activities based on their actual conditions to please and lighten up employees and add joyous atmosphere at the arrival of the New Year. For example, in a friendly tug-of-war match, the workers who had worked hard for a whole year walked out of their workshops and competed with emulative efforts in the sunshine of winter. The cheerleaders were not to be outdone, the slogans of cheering and cheering had risen one after another. The cohesive and centripetal force of the team had been exercised.



#### » Veteran cadres sang ode to the country and the Party

On 20 October, the Group held a vocal concert to celebrate the successful convening of the 19th National Congress of the Communist Party of China. Over 100 retired veteran cadres gathered merrily to eulogize the brilliant achievements attained since the 18th National Congress of the Communist Party of China with their loud and clear songs, beautiful dances and soulful recitation to express their deep love for the Party.



#### » Fitness gurus hiked around Dishui Lake

On 21 October, the municipal Electromechanical Trade Union organized the healthy hike campaign themed "Joint Celebration of the 19th National Congress of the Communist Party of China, Keep Fit through Walking" at Dishui Lake in Lingang. Over 1,300 employees from 57 enterprises participated in the campaign and they hiked for 8km around Dishui Lake in 90 minutes. Interesting challenge matches, corporate culture presentation, cultural and sports performances by employees and other activities were also arranged during the campaign.



➤ **Publication of Guiding Opinions on Use of Welfare Expenses for Employees and Expenditures of Trade Union of Enterprises**

The Party committee of the Group and the municipal Electromechanical Trade Union issued the Guiding Opinions on Use of Welfare Expenses for Employees and Expenditures of Trade Union of Enterprises to further guarantee welfare for employees according to provisions. The document clarifies the use of welfare expenses for employees in five aspects, i.e. convalescence and recreation, physical examination, care for employees, high temperature allowance and heatstroke prevention supplies and also specifies that enterprises shall further establish and improve the work system and mechanism to explicitly illustrate detailed operation rules and operation procedures and ensure orderly execution thereof in accordance with relevant laws, regulations and policies.

➤ **Care for Mothers Huts, the warm homes for mom employees of Shanghai Electric**



According to the requirements of the municipal Trade Union, the Group proactively launched the program of setting up "Care for Mothers Huts" since 2013. As of now, the Group has built 15 "Care for Mothers Huts", of which one got 4-star rating and the rest got 3-star rating. In 2017, 4 enterprises applied for setting up their own "Care for Mothers Huts".

➤ **One hour after getting off work: doing yoga**

The trade union of Shanghai Generator Works of Shanghai Electric Power Generation Equipment Co., Ltd. invited professional teachers from yoga club to set up yoga training class. The class is offered after work on every Monday and lasts for one hour. The "one hour after work" activity for employees is rich in contents including yoga, jazziness, chess, and various ball games, making employees' spare time life more colourful.



➤ **Making glutinous rice dumplings to celebrate folk culture**

At the eve of each Dragon Boat Festival, many subsidiaries of the Group would organize the activity of making glutinous rice dumplings for employees to carry forward the traditional folk culture of China.



➤ **Presentation of delicate flower arrangements to masters as gratitude**

On the "8 March" Women's Day, young female workers presented creatively-arranged bouquets of well-trimmed flowers including rose, lily and carnation adorned with babysbreath and green branches to their master workers. In addition, the female workers' committee under the trade union of each enterprise organized a variety of small activities on the Women's Day to let female employees have a pleasant and meaningful festival.



# 04

## Seeking win-win outcomes with partners

In face of fierce market environment, we worked together with cooperative partner, competitive partners, supplier partners and media partners to carry out communication, exchange and cooperation in all access including government-enterprise, enterprise-enterprise and production-study-research and establish share mechanism platform to make good the weaknesses of each other and realize mutual benefit and development.

### 4.1 Carrying out strategic cooperation to achieve mutual benefit and all-win results

We further strengthened the resources matching with external enterprises and scientific research institutes, consolidated global talents, capitals, information, technology and other innovative factors and absorbed wisdom from various parties to improve the technical advantages and core competitiveness of the Group and share the results in technical progress and industry development.

#### Quicken the pace in developing global presence by capitalizing on financial institutes

On 4 December, Zheng Jianhua, Secretary of the Party Committee and Chairman of Shanghai Electric, visited leaders of China Development Bank, the Export-Import Bank of China and China Export & Credit Insurance Corporation in Beijing. They had deep exchanges on how to strengthen strategic cooperation under the "One Belt, One Road" initiative, support the equipment manufacturing industry to "go abroad" and enhance cooperation in risk management and prevention under the guiding principles from the 19th CPC National Congress.



#### Shanghai Electric and Wison Group signed strategic cooperation memorandum

On 16 November, Shanghai Electric and Wison Group entered into a strategic cooperation memorandum. Both parties were optimistic about the potential demand for power and particularly for clean power from the economic growth in the world, developing countries in particular. Through the strategic cooperation, both parties intended to work together in developing integrated large and medium floating LNG power stations and gas-fired power generation equipment and on global market expansion and technical services by leveraging on their respective advantages, and jointly promote the commercialization of new power generation solutions.



## ▶ Shanghai Electric and Guoxuan High-Tech join hands in energy storage lithium battery field



On 15 May, the signing ceremony for the joint establishment of a joint venture for energy storage batteries by Shanghai Electric and Guoxuan High-Tech was held. The signing of the joint venture agreement depicted the blueprint on promoting the development of energy storage battery sector by both parties.

Shanghai Electric Central Research Institute has been conducting the research and development on lithium titanate battery technology since 2012. It has proprietary intellectual property rights on battery materials, battery cells, battery management system, system integration and other technology on the whole industrial chain, which laid foundation for the cooperation. Driven by national policies on the Energy Internet and the "One Belt, One Road" initiative,

the energy storage battery industry will become another industry with rapid growth after power battery and is likely to bring an industry with RMB100 billion. The development target of joint venture is to become No. 1 and world-class energy storage lithium battery industrial group in China. The business scope of the joint venture covers the research and development, manufacturing and sale of energy storage battery with lithium titanate materials as the negative pole and materials, battery management system, system integration and comprehensive power management system and its main products are batteries for special vehicles and distributed energy storage products.



## ▶ Chongqing Solar Battery Phase I Project commences construction

On 21 December, Chongqing Shenhua CIGS (Copper, Indium, Gallium & Selenium) Solar Battery Module Project (Phase I Project) commenced construction. The project is jointly invested by the National Energy Investment Group, Shanghai Electric and other three enterprises and adopts the advanced technology of Manz AG, a German company, in the CIGS production line. It will have an annual capacity of 306MWp thin-film batteries with an annual output value of RMB1 billion after the completion of Phase I project. CIGS thin-film solar batteries are considered as a new type of next-generation thin-film solar batteries with brilliant prospects. Thanks to the low energy consumption in production, stable power generation performance, no attenuation, excellent weak light performance, long service life and wide application, CIGS thin-film batteries have become the key development orientation of solar photovoltaic power generation with bright market prospects.





## ➤ Set foot in 3D printing industry

On 11 April, Shanghai Techgine Laser Technology Co., Ltd. specializing in the research and development, manufacturing and sale of metal laser 3D printing equipment and technical services was officially opened. With the releasing of the strategy of Made in China 2025 and the National Plan on Advancing the Development of Additive Manufacturing Industry, the additive manufacturing industry was lifted as a national strategy for the first time. The application of 3D printing covers aerospace, automobiles manufacturing, production factories and modules study. It can help designers streamline the design process to the highest extent and shorten the research and development and production cycle with the function-first concept to achieve customized industrial production with low cost and high efficiency. The opening of the company is based on the market demand and the advantages of Shanghai Electric and it adopts the cooperation model with the integration of production, study, research and application with Huazhong University of Science and Technology, making a key step in the exploration of the 3D printing industry.

## ➤ Venture into automobile engineering industry

On 26 June, Nedscheroef, a wholly-owned subsidiary of Shanghai Electric, signed an acquisition agreement with CP Tech GmbH Company, a German automobile subassembly manufacturer and engineering services provider. Nedscheroef will transform from a specialized auto fasteners manufacturer into a high-end engineering company participating in the automobile programs at an early stage through the acquisition of 90% equity interests in CP Tech GmbH Company.

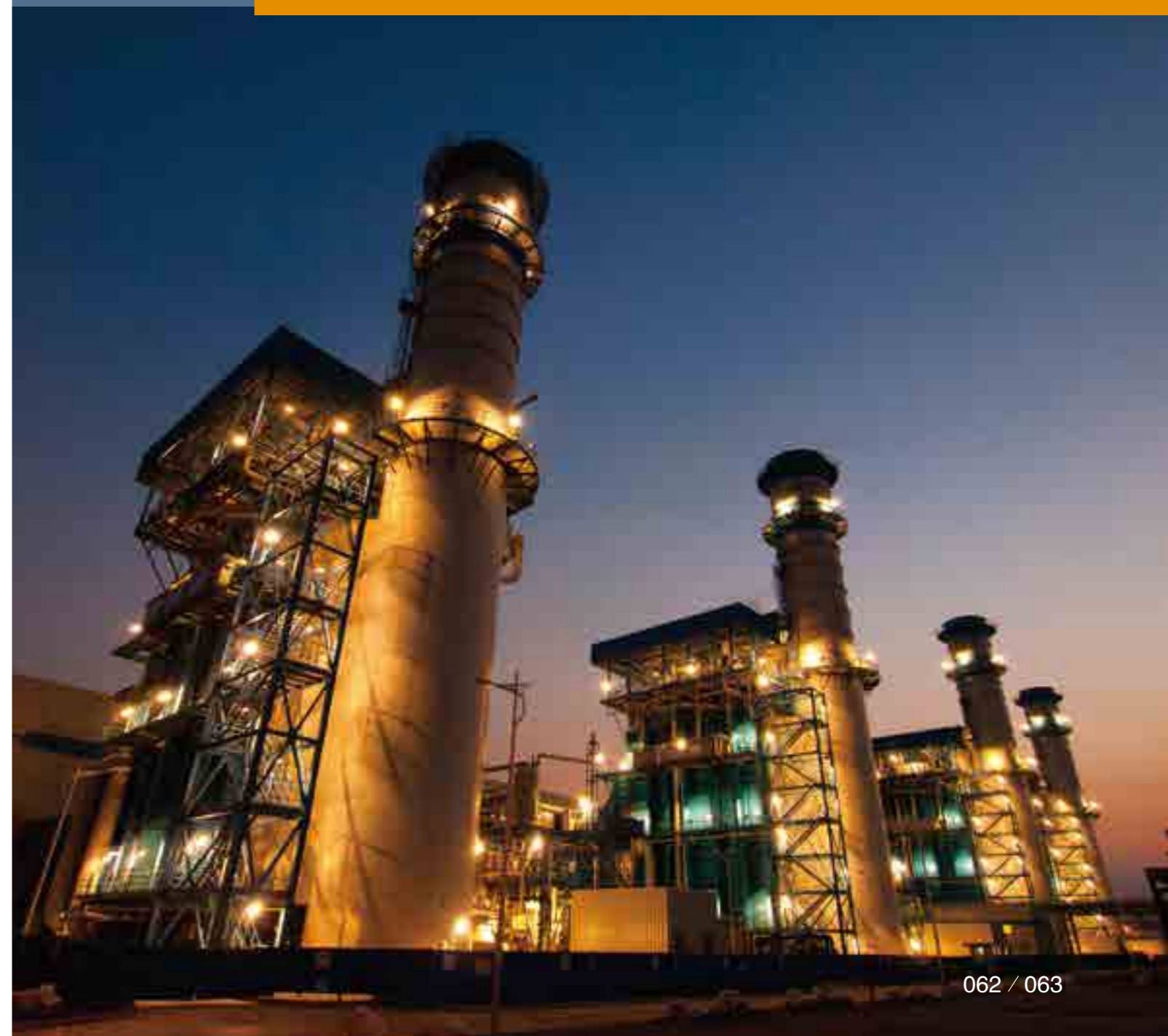
The acquisition will expand the professional scope of Nedscheroef from fasteners to the function of fully identifying various components, including integration components. Nedscheroef will obtain the first-mover advantages in serving clients in automobile development industry and it will highlight its leading position in the Chinese automobile consumption market.

## ➤ Shanghai Electric and Zhejiang University jointly establish research and development center

On 26 June, Shanghai Electric Zhejiang University Wind Power Research and Development Center was inaugurated. Shanghai Electric and Zhejiang University signed the cooperation agreement in January 2017 to consolidate the advantageous resources of both parties and jointly build a world-leading research and development institute for large-capacity wind power generators with permanent magnet direct drive technology through the participation of high-end talents of Shanghai Electric in wind power industry and senior professors of Zhejiang University with reference to the joint building of research and development centers by European universities and enterprises. The establishment of the research and development center will promote the development of courses and the fostering of talents of Zhejiang University on wind power generation, improve the wind power technology development and competitiveness of Shanghai Electric and boost the improvement of national technology innovation capacity on high-end offshore wind power equipment.

## ➤ Shanghai Electric and Huaneng Group jointly promote construction of Shanghai Technology Innovation Center

On 21 June, the promotion and matching event on "deep participation of central enterprises in the construction of Shanghai Technology Innovation Center" was held in Beijing. Shanghai Electric as a Shanghai-based SOE and Huaneng Group as a central enterprise conducted matching exchanges. Through the deep cooperation between central enterprises and Shanghai-based SOEs, it strengthened the coordination between ministries and municipalities, governments and enterprises as well as central and local enterprises to gather forces and jointly promote the construction of Shanghai Technology Innovation Center. At the meeting, Shanghai Electric and Huaneng Group conducted extensive exchanges on joint development of combustion technology on Zhundong coal and 700°C technology, improving the IGCC efficiency, long-term services on gas turbines and the cooperation in backup turbine components supply. Both parties believe that they can establish a regular communication mechanism and seek new growth drivers including talents fostering as well as cooperation in technology innovation.





## 4.2 Supporting fair competition to facilitate industrial development

We comply with the regulations on competition, participated in fair competition and oppose obtaining competitive advantage by illegal methods. We proactively promote our enterprises to participate in cooperation of the industry organizations and establish industrial cooperation platforms to make contributions to the overall development and progress of the industry. We have been actively participating in the formulation, revision and review of national and industrial standards for years, which enables us to keep abreast of the latest developments in the industry and enhances our influence in the industry.

### Establish benchmark in global treasury industry

At the invitation of China National Association of Finance Companies, Shanghai Electric Group Finance Co., Ltd. ("Finance Company") introduced the construction of global treasury to 150 finance companies in the industry on 4 May. It showed the benchmarking status of Shanghai Electric in the construction of global treasury. Under the background with various Chinese enterprises going global in recent years, its strategic status in the construction and management of global treasury has been increasingly highlighted. Finance Company is one of the first companies with cross-border foreign exchange capital pools and the first finance company established FTZ accounting units in China. It has made remarkable achievements in the establishment of global treasury through providing supporting financing, foreign exchange settlement and sale and other services to Shanghai Electric Hong Kong Company, Shanghai Prime Hong Kong Company, biomass power generation in Cuba and other projects, which provided effective supports to the Group in "going global", reduced the capital and finance cost and avoided risks on foreign exchange and interest rates.

### Participate in formulation of standards on urban rail transit informatization

On 27 July, the kick-off meeting for the formulation of the Standards on IT Structure and Information Security of the Information Technology System on New-generation Urban Rail Transit System and the first meeting of the formulation group was held in Beijing. SEC Thales Transportation System Limited Company was invited to attend the meeting as a member of the expert group. The standards will fill in domestic void in standard systems on the construction of urban rail transit informatization and will greatly promote the deep integration of industrialization and informatization and the intelligent development of rail transit with the Internet plus strategies. With its strong technical advantage in urban rail transit in China and as a representative in the urban rail signal industry, SEC Thales participates in the preparation of the regulations on informatization as a member of each of the expert group and the signal group.





## Participate in standardized construction of "Hualong One" as team leader

On 13 April, the National Energy Administration and other authorities released the Implementation Plan on Standardized Demonstration of National Key Project "Hualong One", marking the official initiation of the standardization demonstration work on "Hualong One". As the leader of the equipment manufacturing team responsible for the formulation for relevant fields, Shanghai Electric will be responsible for the formulation of technical standards on nuclear island main equipment. Currently, reactor vessel internals, bridge cranes, supporting cranes, charging pumps and other equipment are provided by Shanghai Electric. Among all current "Hualong One" projects in China, Shanghai Electric is able to provide all nuclear island equipment, including reactor vessel internals, driving mechanisms, pressure vessels, steam generators, main pumps, grade-II and grade-III nuclear pressure vessels, as well as steam turbines, generators, condensers, high- and low-pressure heaters, oxygen extractors and other conventional island equipment.

## Wind Power Group and Transmission and Distribution Group participate in formulation of industry technical speculations

On 16 and 17 May, the wind power and electric equipment branch of the Wind Power Standardization Technical Committee on the Energy Industry determined the contents of 3 standards on the energy industry for revision and formulation in Chengdu and designated the members of the working group for the revision and formulation of industry standards. Shanghai Electric Wind Power Group and Shanghai Electric Transmission and Distribution Group are among the members. The 3 industry standards to be revised and formulated are the Technical Specifications on the Main Control System of Doubly-fed Wind Power Units, the Technical Specifications on the Electric Pitch Control System of Wind Power Generation Units and the Technical Specifications on Supercapacitor for the Electric Pitch System of Wind Power Generation Units. Shanghai Electric Wind Power Group participated in the revision and formulation of all three standards while Shanghai Electric Transmission and Distribution Group participated in the revision of the Technical Specifications on the Electric Pitch Control System of Wind Power Generation Units. They selected experts in relevant industries and provided feasible suggestions to the formulation of the standards.

## Nabtesco leads formulation of "National Standard" on industry

The working group on the formulation of the Precision Planetary Cycloid Reducer for Robots led by Nabtesco Motion Machinery (Shanghai) Co., Ltd. was established. Compared with overseas reducer enterprises, domestic enterprises have fewer experience in relevant products with different quality, which is a result of no unified standards for reference. After the releasing of the standard, robot enterprises can choose reducers for their products based on the standard and improve the quality of robot products, which is of significance in the standardized development of the domestic robot industry. For Nabtesco, the participation in the formulation of the national standard as a leader established its leading position in the robot industry.



## 4.3 | Fighting against commercial bribery to achieve healthy development

We rigidly follow the requirements on full and strict governance over the Party, tighten political discipline and rules and enforced Party discipline. Focusing on the strategic development goals and central tasks of the Group, our Party committee has earnestly fulfilled its primary responsibility and our discipline inspection commission has earnestly performed its supervision responsibility. Furthermore, we have fully implemented the central Party leadership's eight-point decision on improving Party conduct, tightened accountability for overseeing discipline compliance, solidly advanced the improvement of Party conduct and integrity, and resolutely opposed commercial corruption. All these efforts have provided strong guarantee for the sustainable and healthy development of the Group.

### ▶ Party committee fully fulfilled its primary responsibility

We held meetings on the improvement of Party conduct and integrity and closely integrated the economic development with the improvement of Party conduct and integrity in our work arrangement, plan implementation, inspection and performance appraisal, ensuring the roles responsibilities of relevant officers in improving of Party conduct and integrity were clearly defined. Legal education and trainings in relation to Party conduct and integrity were held for leaders, middle-aged and young cadres, newly-appointed cadres and personnel in key positions, such as carrying out legal education of Party conduct and integrity, and organizing learning activities for the central group of the Party committee, centralized training sessions for cadres, seminars and symposiums on integrity and legal education. In addition, we sent reminders and prompts before major festivals and holidays and compiled and distributed learning materials on the improvement of Party conduct and integrity every month, including "Political Reminders - 150 Prohibitions on Party Members and Cadres" and other books and the educational film titled "Always on the Way" to promote leaders and cadres at all levels to learn Party policies, rules and discipline, deepen their sense of Party consciousness, rules, responsibility, action and discipline, consolidate the ideological defense line and hold the bottom line of discipline.

### ▶ Discipline inspection commission duly performed its supervision responsibility

Based on the requirements on "managing the next level and inspecting the next two levels", we conducted supervision and inspection on the performance of "two responsibilities" by subsidiaries, urged the Party committee to perform its primary responsibility, the Secretary of the Party committee to fulfill his duties as the "first responsible person", the discipline inspection commission to perform supervision responsibility and all members of the management to perform "double responsibilities for one post". We conducted self-inspection in respect of compliance with the central Party leadership's eight-point decision on improving Party conduct through checking ten aspects, including business entertainment, use of vehicles for public affairs and travelling, to effectively implement the eight-point decision as key contents for the improvement of Party conduct and integrity in detailed aspects. Focusing on key matters, aspects and positions, we conducted special inspections on performance of duties and remuneration of leaders, business expenditures and prevention of benefit transfer, put forward specific improvement suggestions for problems identified and urged for timely rectification. Furthermore, we have improved the conversation system on improvement of Party conduct and integrity, conducted investigation on issues reflected in complaint letters and had conversations with relevant persons. For any bad sign or tendency for possible disciplinary violation, we would have warning talks with relevant officers in time; for slight disciplinary offences, we would have admonishing talks with relevant offenders according to relevant rules, and for entities involving most complaints or serious cases, we would summon major Party and political leaders of the entities and urged them to procure the fulfilment of responsibilities on the improvement of Party conduct and integrity.

### ▶ Tightened accountability for disciplinary violations

We consistently strengthened our discipline inspection team and improved its working ability. We earnestly processed complaints and strictly conducted verification based on procedures to ensure complete materials, right judgment and proper handling. For any violation of the central Party leadership's eight-point decision, violation of the Party discipline, making improper alternatives, "crossing red lines" and other violations of discipline and laws, we have measures in place to ensure those who have committed such violations are held accountable and punished in a rigorous way. Those who failed to fulfil their primary responsibilities, supervision responsibility and "double responsibilities for one post" are held accountable. For typical violations of Party and political disciplines, we ensure 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 or case in 2017.

### ▶ Improved internal control system

We addressed both symptoms and root causes and incorporated integrity requirements into our internal control system and operation procedures. We improved the decision-making system on "the decision-making on key issues, the appointment and dismissal of key cadres, the decision-making on investment in key projects and the use of large-sum capitals", standardized the decision-making procedures on key issues and established the supervision and constraint mechanism on the operation of powers to promote the open and transparent exercise of rights. We improved the Standards on Communication Fees Control, the Allocation and Use of Official Vehicles and other rules and set up clear control standards and standard operation procedures. For the defects in internal control found in routine supervision, special inspections, the process of handling complaints, promote measures would be taken to address such defects, thereby consistently addressing weaknesses in our systems and procedures to promote transparent operation and standardized management.

### ▶ Established a mechanism ensuring officials dare not, cannot and do not want to be corrupted



On 13 November, the Group held a work conference on the discipline inspection work and the improvement of Party conduct and integrity and raised requirements on implementing the guiding principles from the 19th CPC National Congress, further improving the pertinence and effectiveness of efforts in improving Party conducted and integrity under new situations and striving to establish a mechanism that ensures officials dare not, cannot and do not want to be corrupted. The conference emphasized that equal importance should be attached to socialist material wellbeing and socialist cultural-ethical standards and the improvement of Party conduct and integrity should be strengthened and cannot be relaxed. To establish a mechanism that ensures officials dare not, cannot and do not want to be corrupted is the starting point and objective for discipline inspection. We shall further implement responsibilities on the improvement of Party conduct and integrity, further improve integrity risk management and control system, further enhance supervision, discipline enforcement and accountability, further strengthen the warning education on the improvement of Party conduct and integrity and further regulate the conduct of leaders and cadres, so as to promote reform and development with full and strict governance over the Party.



SHANGHAI ELECTRIC

### ▶ Secretaries of Party committees directly under the Party committee of the Group accepted reviews and appraisal on their performance of duties on improving Party building and Party conduct

The Party committee of the Group held a work report meeting of secretaries of its subordinate Party committees in relation to the grass-root Party building and the improvement of Party conduct and integrity, at which the efforts of these subordinate Party committees on Party building and improvement of Party conduct in 2017 were reviewed and evaluated. The work reporting by secretaries of Party committees for review and appraisal reports the performance of their duties on Party building and the improvement of Party conduct and integrity from their perspectives as the first responsible person, which is an important form for evaluating annual work on Party building and the improvement of Party conduct. The work reporting by secretaries of Party committees for review and appraisal reports the performance of their duties on the Party building and the improvement of Party conduct and integrity is an important measure in implementing the responsibilities of central and municipal Party committees on full and strict governance over the Party and strengthening the building of grass-roots Party organizations. Secretaries of 24 Party committees directly under the Party committee of the Group attended the meeting and reported their work, among whom 7 secretaries delivered oral work reports at the meeting and the remaining 17 secretaries delivered written work reports.

### ▶ Promoted deep integration of Party building with enterprise operation

On 18 July, Shanghai Electric held seminars for secretaries of Party committees on implementing the instructions of the SOEs work conference on Party building. Under the background of a new round of SOEs reform and full and strict governance over the Party, the relationship between the Party leadership and the corporate governance are increasingly closer. Based on the instructions and requirements of the work conferences of national and local SOEs on Party building, new requirements of the central and municipal Party committees and the Party committee of the municipal SASAC on strengthening Party building in SOEs as well as the implementation of rectification measures proposed at the democratic life meeting of leaders, the Party committee of the Group determined 9 key tasks of the Party committee and adopted them into the annual work plan, including the establishment of an all-round and fully-covered network on Party building of Shanghai Electric, the revision of the Articles of Association, the improvement of the decision-making system and the leadership structure and the establishment of organizations on Party building. On the basis of the above, the Party committee formulated the plan of Shanghai Electric on implementing the instructions of the work conference on Party building in SOEs and set out the list of key tasks, which mainly includes 48 tasks in four aspects, namely integrating the enhancement of Party leadership and the improvement of corporate governance, building high-quality leaders team in SOEs, building grass-roots Party organizations of SOEs into strong battle fortresses and strengthening the leadership of Party building in SOEs.



Distribution of Major Corporate Suppliers of Shanghai Electric

2593	Shanghai
1003	Jiangsu
325	Zhejiang
237	Beijing
145	Shandong
121	Guangdong
102	Liaoning
88	Hubei
73	Henan
117	Overseas

#### 4.4 Strengthening 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 cooperation and all win between suppliers and purchasers, 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 adhered to the national laws and regulations including Contract Law of the People's Republic of China, Law of the People's Republic of China on Tenders and Bids, Law of the People's Republic of China on Product Quality, Pricing Law of the People's Republic of China, Guaranty Law of the People's Republic of China, Audit Law of the People's Republic of China and Law of the People's Republic of China Against Unfair Competition and formulated purchase management system and regulation including Shanghai Electric's Purchase Management and Shanghai Electric's Centralized Purchase Management in the combination of the actual situation of the Group to normatively improve the purchase work of the subsidiaries under the Group, strengthen risk control and management for purchase business and provide a sound foundation for improving purchase operation capability and product quality of the Group. The selection of all suppliers of the Company strictly complies with the supplier selection process.



SHANGHAI ELECTRIC

#### Quality commitment: supply chain collaboration to build quality nuclear projects



On 29 and 30 June, Shanghai Turbine Works of Shanghai Electric Power Generation Equipment Co., Ltd. and Shanghai Generator Works of Shanghai Electric Power Generation Equipment Co., Ltd. held meetings on nuclear power suppliers for 2017, respectively. They and representatives of suppliers from the whole country discussed the construction of nuclear power projects. In order to further strengthen the quality management on nuclear power and implement the requirements of "sub-contractors under the charge of contractors" on CGN nuclear power projects, the two nuclear power equipment manufacturers conducted exchanges with suppliers on their experiences and feedbacks, special management requirements on nuclear power and supporting mechanisms on supply chain management and deeply

analyzed the quality trend and improvement orientations. They indicated that they will achieve the quality target through the supply chain collaboration, conduct production strictly following regulations and standards and continue to improve the overall supply chain team to lay foundation for building quality nuclear projects. Supplier representatives jointly read the Commitment on Honesty Behaviors for Supply Chain Quality of Shanghai Electric Power Generation Group at the meeting and committed to strictly implement relevant requirements on "two preventions" and "ten prohibitions" continuously improve and strictly control quality and strive for the "going global" of nuclear power equipment.



### » Integrated with Sinopec's e-commerce platform and supplier collaboration platform meets standards

On 8 August, Shanghai Electric and Sinopec Epec platform entered into a strategic cooperation agreement in Beijing, kicking off the cooperation between Shanghai Electric and Sinopec's e-commerce platform. The signing of the strategic cooperation agreement will not only facilitate the promotion of Shanghai Electric's products in a wider range but also help Shanghai Electric procure materials at lower prices on the e-commerce platform to reduce the enterprise cost.

### » Procurement management and supplier collaboration platform meets standards

The "Construction of O2O Platform for Supply Chain Collaboration of Large Equipment Group" passed the inspection and acceptance of Shanghai Municipal Commission of Economy and Informatization. The project is an SRM platform based on the technical structure of Internet-based platforms and established an O2O platform supporting the procurement management and supplier collaboration of a large equipment manufacturing group. It connected the headquarters of the Group, industrial groups and subsidiaries, achieved the effective interaction of online and offline procurement management and extended the supply chain collaboration from an enterprise to the upper and down streams of the industrial chain. During the process, it consolidated and optimized the supplier resources of the Group, achieved the sharing of quality resources within the Group, regulated the standards on procurement management, improved the procurement efficiency and reduced the procurement cost. After the actual operation and testing, the system functions and indicators of the project meet relevant standards, specifications and requirements set out in the project plan letter of appointment and achieved the construction target of the project.

### » Implemented strategic layout with "Outsourcing Production and Processing" to consolidate supply chain

On June 22 and 23, the awarding, signing and unveiling ceremony of Sunco manufacturing base and Greenery manufacturing base of Shanghai Boiler Works, Ltd. was held. It has been ranking high in terms of the total boilers manufactured for power stations and has maintained long-term friendly partnership with enterprises in the supply chain in recent years. The establishment of Sunco and Greenery manufacturing bases is a significant and innovative measure in vigorously promoting the improvement of management and control capacity over enterprises in the supply chain, fully mastering social production and manufacturing resources and consolidating the supply chain based on the strategic layout with "Internal Research and Development and Sales, Outsourcing Production and Processing" and the strategic requirements on transforming and upgrading traditional advantageous manufacturing industries and actively promoting production service industries under the concept of "capacity transfer, management coverage and win-win cooperation". Meanwhile, it will facilitate Sunco Boiler Co., Ltd. and Jiangsu Greenery Environment Engineering Group in achieving complementary advantages with resources of benchmark enterprises in industry and will play a significant and active role in improving manufacturing management and market pressure resistance.

### » Wuxi Turbine Blade won the only best new supplier award in 2017



On 22 February, Rolls-Royce's Global Supplier Conference 2017 was held in Singapore. With its outstanding performance in projects in recent years, Wuxi Turbine Blade Co., Ltd. stood out of global suppliers and won the only best new supplier award of Rolls-Royce in 2017. It is the only and the first Chinese supplier having won the award, which shows the high recognition of Rolls-Royce over the technical capacity, product quality and delivery performance of Wuxi Turbine Blade. Meanwhile, through joining Rolls-Royce's "circle of friends" in global supply chain, Wuxi Turbine Blade can better master the development trends in global market

and technology, consistently improve its competitiveness in project management, quality management and control and technical research and development, expand into the international market for civil aviation forging with huge potential and establish an high-end industrial pattern with "breakthroughs in points and orderly expansion".



## SHANGHAI ELECTRIC

### 4.5 | Enhancing brand value by leveraging on media dissemination

We attach great importance to media relations and respond to media appeals at the first time. Furthermore, we take a responsible attitude towards the right of the public to information, accurately judge the trend of public opinions and willingly share media resources. All these have helped improve the brand recognition of the Group.

#### Yicai introduces Shanghai Electric's experience in "going global"

On 23 October, the Yicai program on Shanghai TV played the "Series Report on Five Years of Hardworking—Listed Companies", introducing Shanghai Electric's practical experience in strengthening its principal business and speeding up in "going global". In recent years, Shanghai Electric's traditional manufacturing industries have been transforming towards intelligent manufacturing and the "manufacturing plus services" orientation and have achieved horizontal business expansion. It used to heavily rely on equipment and labors, but now it significantly reduces the dependence on equipment and labors with the development of intelligent manufacturing and automation technology after technical transformation. In addition, with the advancing of the "One Belt, One Road" initiatives and based on its advantage in the integration of business and finance, Shanghai Electric has been maintaining the development strategy of "going global" and consistently expanding emerging overseas markets through expanding power stations, power transmission and distribution, environmental protection and other complete projects. It has provided various quality projects to overseas customers with its business covering over 40 countries along the "One Belt, One Road". At the same time, Shanghai Electric is also actively promoting capitals "going global" and serve the strategic demand of the Company on industrial structure adjustment through constantly conducting innovations in the size and model of overseas M&As.



#### Zheng Jianhua explains Shanghai Electric's quality culture in exclusive interview with Shanghai TV

On 13 September, on the eve of the 2nd China Quality Conference, Zheng Jianhua, Secretary of Party Committee and Chairman of Shanghai Electric, accepted a special interview with Shanghai TV and fully explained the quality concept and quality culture of Shanghai Electric. With the deepening of the internationalization strategy and the improvement of the integrated management of Shanghai Electric, it raises higher adaptability requirements on the quality management system. Quality should start from the sense, rely on technologies, be based on management and maintained in workmanship. Shanghai Electric has been following the leadership of culture and the orientation of problems in quality work and focusing on "customers, suppliers and fields" to continuously build a quality culture. After years of accumulation, it has established an excellent working atmosphere and mechanism and achieved remarkable quality management benefits. Its quality work is generally recognized by the government and other parties and various model enterprises on quality management emerged. On the eve of the 2nd China Quality Conference held on 15 and 16 September, Shanghai Boiler Works, Shanghai Generator Works, Shanghai Mitsubishi Elevator and other enterprises accepted interviews with Shanghai TV and other media.





### » Xiangshui wind power project as a classic case in China's Mega Projects

On 19 October, CCTV Documentary Channel aired the documentary China's Mega Projects III at the prime time. It used the case of 4.0 offshore wind power equipment installation in Xiangshui, Jiangsu by China Three Georges Corporation, the first project put into commercial operation in China, and displayed innovations and breakthroughs in key technologies in the offshore wind power equipment installation in China. Shanghai Electric supplied all of the 37 units 4.0 generators and guided the installation for the project. The installation technology is followed by various domestic wind power enterprises thanks to its high safety and reliability, low cost and other advantages. Currently, the installation of offshore wind power units can adopt complete installation, wind rotor installation and single blade installation. Shanghai Electric masters all installation technologies and it is the first and currently the only main unit supplier successfully practiced all three installation technologies in seas in China.

### » CCTV Business Channel features Shanghai Electric's development under "One Belt, One Road" Projects

On 17 to 21 January, CCTV Business Channel introduced a special report Davos Time in succession to introduce China's contribution to the global economic development and new win-win cooperation plans to the world under the "One Belt, One Road" initiatives. On 21 January, CCTV Business Channel specially selected Shanghai Electric as a case in conducting external investment and cooperation by Chinese enterprises, showing China's role in international capacity cooperation and external investment.

### » "Intelligent wind power" highlights ABC Summit development under "One Belt, One Road" Projects

On 28 February, the High-end Intelligent Manufacturing Conference of the 2017 ABC Summit was held in Suzhou. Experts from Baidu Cloud, Shanghai Electric, Siemens and Intel conducted deep exchanges on ABC (artificial intelligence, big data and cloud computing) and the Internet of Things and discussed the innovation in intelligent Internet of Things and the development of intelligent manufacturing industry. Shanghai Electric introduced its self-developed "Feng Yun" system and delivered an address on "exploring intelligent services covering full life cycles with intelligent wind power". Driven by the current demand for increasing proportion of wind power and the intelligentization wave, Shanghai Electric actively explores strategies on the control over wind power farms and introduces big data, cloud computing and other advanced technologies. It has successfully developed the "Feng Yun" system and provides customers with products on intelligent wind farms, which can reduce on-site professional staff on duty, improve remote maintenance capacity and achieve the target with "fewer staff, more electric equipment and stable operation".



# 05

## Walking the talk of going green to protect 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.

### » Continuous enhancement of environmental protection capacity due to great efforts on environmental protection and consolidation of foundation

#### ◎ Risk identification unveils weaknesses

In March, the Group issued the Notice of Shanghai Electric on Accomplishment of Environmental Factors Identification, Risk Evaluation and Risk Control. Up to December, a number of enterprises have completed environmental factors identification, risk evaluation, risk ranking and management plan and other works.

#### ◎ Publicity for enhancing environmental awareness

In June, the Group implemented the environment day activity themed by "clear water and green mountains are the source of fortune". Over 100 enterprises carried out activities in forms of bulletin board, information platform, etc. to enhance employees' environmental protection awareness.

#### ◎ Cooperation between government and enterprise with clear division of responsibilities

The Company signed a responsibility statement on environmental protection with the government of Minhang District to strengthen communication and coordination with the government and coordinate and handle the environmental protection issue of the Company in a proper manner, to achieve cooperation between government and enterprise.

© We strictly comply with

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



© In order to strengthen the treatment demands on disposal of waste gas, solid waste, waste water, and prevent environmental pollution risks during the disposal process of Three Wastes, we have formulated the following systems:

- The Implementation Regulations of the Solid Waste Management
- The Implementation Regulations of the Safety Production and Environmental Protection and other systems.



Shanghai Electric attaches importance to the disposal and discharge of Three Wastes, and proper disposal and discharge standards 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 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 hazardous waste products, such as using specialized cleaning fluid instead of gasoline, acetone and others to clean machine surface so as to minimize the production of waste.

The Group has strived to reduce the resource consumption during the process of production and operation, 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. The group member entities 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 promote energy efficient products; reasonably adjusted industry structure, enterprise structure, product structure, and reduced energy consumption per output value and per unit product and ensure more efficient and reasonable use of resources.





## 5.2 Building eco-friendly enterprises through persistent environmental efforts

Following the strategy of sustainable development, we insist on reduction of energy consumption and improvement of energy utilisation efficiency during operation and pursue continuous improvement of energy conservation and consumption reduction with an aim to build an environment friendly enterprise with the idea of "low consumption and high efficiency, clean and low-carbon, scientific management, and continuous improvement". In 2017, the greenhouse gases emission intensity was 336.99 tons/RMB100 million turnover; the total amount of hazardous wastes was 3,588.2 tons with the intensity of 4.5 tons/RMB100 million turnover; the total energy consumption reached 266 thousand tons/standard coal; and the water consumption totaled 6,908 thousand tons.

### © Environmental Performance Indicators:

Environmental Performance Indicators	2015	2016	2017
Total investment in environmental protection (RMB10 thousand)	5,603	5,471	6,748
Energy consumption for unit output value (tons of standard coal equivalent/RMB10 thousand)	0.0287	0.0288	0.0290
Water consumption for unit output value (tons of water/RMB 10 thousand)	0.6975	0.6795	0.7531
Exhaust emission (tons)	99,680	256,283	306,994
Wastewater discharge (tons)	4,126,050	4,847,928	3,473,988
Slag discharge (tons)	8,424	7,666	3,922
Comprehensive utilization rate of the three wastes	71.51	45.51	47.33
Greenhouse gas emission (tons)	152,708	224,079	268,054

● **Note:** due to the change in the scope of consolidation in 2017, part of the data in 2015 and 2016 were restated simultaneously.

### Industrial Manufacturing Enterprises' Waste Gas and Waste Water Discharge

Enterprises	Exhaust emissions ( ' 0,000 m <sup>3</sup> )			Waste water discharge (tons)		
	2015	2016	2017	2015	2016	2017
Shanghai Electric Group Shanghai Electric Machinery Co., Ltd.	5454.1	2920.9	2959.69	880898	678578	626704
Shanghai Boiler Works, Ltd.	4811.6	31792	34564.6	286010	210355	137369
Shanghai Turbine Works Co., Ltd.	302	243	214	1251650	1107700	715763
Shanghai Power Station Auxiliary Equipment Works Co., Ltd.	/	/	/	212750	160502	180653
The Generator Factory of Shanghai Electric Power Generation Equipment Co., Ltd.	/	/	/	/	/	/
Shanghai Yida Machinery Co., Ltd.	2	2	/	21975	21890	25763
Shanghai Honggang Power Equipment Casting and Forging Co., Ltd.	55	50	35	/	/	/
Lin Gang Factory	/	/	/	/	14955	11711
Shanghai Electric Wind Power Equipment Dongtai Co., Ltd.	/	/	/	/	16000	5014
Shanghai Electric Wind Power Equipment Heilongjiang Co., Ltd.	/	/	/	1750	1660	1228

## Industrial Manufacturing Enterprises' Waste Gas and Waste Water Discharge

Enterprises	Exhaust emissions ( '0,000 m <sup>3</sup> )			Waste water discharge (tons)		
	2015	2016	2017	2015	2016	2017
Shanghai Electric KSB Pump Co., Ltd.	7513	7620	7580	185694	171032	149808
Shanghai Electric-KSB Nuclear Pumps & Valves Co., Ltd.	/	/	/	6274	3943	12017
Shanghai No.1 Machine Tool Works Co., Ltd.	14.89	33.29	/	121600	126000	137495
Shanghai Electric Nuclear Power Equipment Co., Ltd.	2197.1	2783.3	3267.36	28148	31491	28398
Shanghai Mitsubishi Elevator Co., Ltd.	1276.9	1079.3	967.576	112688	99510.3	95591.7
Shanghai Cimic Welding Consumables Co., Ltd.	414	402	412	87333	61660	54900
Shanghai Electric Hydraulics & Pneumatics Co., Ltd.	/	/	/	9403	8161	7281
Shanghai Renmin Electrical Apparatus Works	72.364	77.184	75.2632	74615	74854	83476
Shanghai Electric Ceramic Works Co., Ltd.	/	/	/	/	/	/
Shanghai Nan Qiao Transformer Co., Ltd.	/	/	/	8294	8568	/
Shanghai Electric Power Electronics Co., Ltd.	/	/	/	4844	10558	11681
Shanghai Najie Electrical Complete Sets Co., Ltd.	/	/	/	15451	9308	8637
Shanghai Nanhua-Lanling Electric Co., Ltd.	/	/	/	37728.9	38088	18779
Shanghai Huapu Cable Co., Ltd.	/	/	/	/	/	/
Shanghai Dahua Electrical Equipment Co., Ltd.	/	/	/	10339	12167	/
Shanghai Feihang Electric Wire and Cable Co., Ltd.	/	/	/	47842.2	63378.9	68175
Shanghai Jiejin New Electric Materials Co., Ltd.	0.55	0.55	0.55	/	/	2658
Wujiang Transformer Co., Ltd.	57100	38720	/	/	/	/
Shanghai Electric Milling Equipment Co., Ltd.	/	1.699	/	/	532406	472385
Shanghai Electric Shanghai Heavy Machinery Forging Co., Ltd.	/	147347	224242	/	661755	894283
Shanghai Institute of Machinery Building Technology Co., Ltd.	/	/	/	/	/	/
Shanghai Ship-use Crankshaft Co., Ltd.	1	1	/	10	8	9.8

Enterprises	Exhaust emissions ( '0,000 m <sup>3</sup> )			Waste water discharge (tons)		
	2015	2016	2017	2015	2016	2017
SNJ Valve Co., Ltd.	6258	7940	18587.3	18135	15072.3	8911.8
Shanghai Fanuc Robotics Co., Ltd.	/	/	/	27995	25007	28627
Shanghai Centrifuge Institute Co., Ltd.	/	/	/	19212	11436	5500
Shanghai Capital Numerical Control Co., Ltd.		0.0004	48.36	1873.8	1617.75	1788
Shanghai Machine Tool Works Co., Ltd.	/	/	/	82834.2	97866.9	64461
Shanghai Blower Works Co., Ltd.	/	/	/	149087	83520	/
Shanghai Denso Fuel Injection Co. Ltd.	7872	7800	/	45443.7	36438.3	44399
Shanghai Electric Wind Power Equipment Gansu Co., Ltd.	/	/	/	/	3451	3490
Shanghai Electric Wind Power Yunnan Co., Ltd.	/	/	/	/	5196	2472
Shanghai Electric Wind Power Equipment Hebei Co., Ltd.	/	/	/	/	5192	7042
Shanghai Electric Wind Power Group Co., Ltd.	/	/	/	14375	41384	30957
Engineering Service Branch of Shanghai Electric Wind Power Group Co., Ltd.	/	/	/	/	/	/
Shanghai Fujikura Cable Co., Ltd.	/	/	/	34484	69606	47693
Shanghai Electric Power T&D Group Testing Company Limited	/	/	/	6000	6600	7200
Shanghai Cyeco Environmental Technology Co., Ltd.	/	/	/	/	/	/
Goss International China	/	/	/	/	/	/
Nabtesco Motion Machinery (Shanghai) Co., Ltd.	1588	1753	9015	10080	12144	17893
Shanghai Thales Saic Transport Company Limited	/	/	/	/	/	/
Shanghai United Bearing Company Limited	4890	2650	1985.16	112186	115300	105120
Shanghai Tian An Bearing Company Limited	/	/	/	34161	24083	30621
Shanghai Zhenhua Bearing Works Company Limited	/	3169.6	3134.93	14769	17559	16290
Wuxi Turbine Blade Company Limited	/	/	/	82000	84000	86000
Shanghai Tool Works Company Limited	159.6	140	120	46861.2	45218	44237
Shanghai Prime Biaowu High Tensile Company Limited	/	/	/	2056	1813	1340
Shanghai High Strength Bolt Factory Company Limited	/	/	/	18550.7	20202.6	22803.8
Shanghai Fastener and Welding Material Technology Research Centre Company Limited	/	/	/	648.9	693.9	621



### Discharge of slag, comprehensive utilization rate of the three wastes and greenhouse gas from industrial production enterprises

Enterprises	Discharge of slag (tons)			Comprehensive utilization rate of the three wastes			Emission of greenhouse gas (tons)		
	2015	2016	2017	2015	2016	2017	2015	2016	2017
Shanghai Electric Group Shanghai Electric Machinery Co., Ltd.	2326.26	1909.31	1104.74	0.9174	0.9491	100%	36452.5	24219.5	26597
Shanghai Boiler Works, Ltd.	4237.5	3842.9	2312.4	0.1366	0.1366	13.66%	31646	33553	30504
Shanghai Turbine Works Co., Ltd.	1000	950	1000	1	1	/	/	/	/
Shanghai Power Station Auxiliary Equipment Works Co., Ltd.	/	/	/	/	/	/	/	/	/
The Generator Factory of Shanghai Electric Power Generation Equipment Co., Ltd.	106.85	104.8	/	/	/	/	/	/	/
Shanghai Yida Machinery Co., Ltd.	4.4	4.5	/	/	/	/	/	/	/
Shanghai Honggang Power Equipment Casting and Forging Co., Ltd.	165	149	40	/	/	/	/	/	120
Lin Gang Factory	/	/	/	/	/	/	/	/	/
Shanghai Electric Wind Power Equipment Dongtai Co., Ltd.	/	/	/	/	/	/	/	/	/
Shanghai Electric Wind Power Equipment Heilongjiang Co., Ltd.	/	/	/	/	/	/	/	/	/
Shanghai Electric KSB Pump Co., Ltd.	0.8	0.5	26	/	/	43%	/	/	3489
Shanghai Electric-KSB Nuclear Pumps & Valves Co., Ltd.	124.54	111.62	80.02	/	/	/	/	/	/
Shanghai No.1 Machine Tool Works Co., Ltd.	87	63	/	0.0007	0.0005	/	/	/	/
Shanghai Electric Nuclear Power Equipment Co., Ltd.	/	/	/	/	/	/	3.01604	3.7985	/
Shanghai Mitsubishi Elevator Co., Ltd.	/	/	/	/	/	/	36021	36206	33072.4
Shanghai Cimic Welding Consumables Co., Ltd.	/	/	/	/	/	/	/	/	/
Shanghai Electric Hydraulics & Pneumatics Co., Ltd.	/	/	/	/	/	/	/	/	/
Shanghai Renmin Electrical Apparatus Works	165	162	164	0.0003	0.0003	0.0003	/	/	/
Shanghai Electric Ceramic Works Co., Ltd.	/	/	/	/	/	/	/	/	/
Shanghai Nan Qiao Transformer Co., Ltd.	/	/	/	/	/	/	/	/	/
Shanghai Electric Power Electronics Co., Ltd.	/	/	/	/	/	/	/	/	/
Shanghai Najie Electrical Complete Sets Co., Ltd.	/	/	/	/	/	/	/	/	/

## Discharge of slag, comprehensive utilization rate of the three wastes and greenhouse gas from industrial production enterprises



Enterprises	Discharge of slag (tons)			Comprehensive utilization rate of the three wastes			Emission of greenhouse gas (tons)		
	2015	2016	2017	2015	2016	2017	2015	2016	2017
Shanghai Nanhua-Lanling Electric Co., Ltd.	0.2	/	/	/	/	/	/	/	/
Shanghai Huapu Cable Co., Ltd.	/	/	/	/	/	/	/	/	/
Shanghai Dahua Electrical Equipment Co., Ltd.	/	/	/	/	/	/	/	/	/
Shanghai Feihang Electric Wire and Cable Co., Ltd.	0.13	0.12	2	/	/	/	/	/	/
Shanghai Jiejin New Electric Materials Co., Ltd.	/	/	/	/	/	/	/	/	/
Wujiang Transformer Co., Ltd.	/	/	/	/	/	/	/	/	/
Shanghai Electric Milling Equipment Co., Ltd.	/	160	/	/	/	/	/	/	/
Shanghai Electric Shanghai Heavy Machinery Forging Co., Ltd.	/	/	/	/	/	/	/	77860.4	126419.7
Shanghai Institute of Machinery Building Technology Co., Ltd.	/	/	/	/	/	/	/	/	/
Shanghai Ship-use Crankshaft Co., Ltd.	/	/	/	/	/	/	/	/	/
SNJ Valve Co., Ltd.	/	/	/	/	/	/	/	/	/
Shanghai Fanuc Robotics Co., Ltd.	/	/	/	/	/	/	1093.55	1408.97	/
Shanghai Centrifuge Institute Co., Ltd.	/	/	/	/	/	/	/	/	/
Shanghai Capital Numerical Control Co., Ltd.	/	/	/	/	/	/	/	/	/
Shanghai Machine Tool Works Co., Ltd.	/	/	/	/	/	/	/	/	/
Shanghai Blower Works Co., Ltd.	/	/	/	/	/	/	/	/	/
Shanghai Denso Fuel Injection Co. Ltd.	12	10	/	/	/	/	/	/	/
Shanghai Electric Wind Power Equipment Gansu Co., Ltd.	/	/	/	/	/	/	/	/	/
Shanghai Electric Wind Power Yunnan Co., Ltd.	/	/	/	/	/	/	/	/	/
Shanghai Electric Wind Power Equipment Hebei Co., Ltd.	/	/	/	/	/	/	/	/	/
Shanghai Electric Wind Power Group Co., Ltd.	/	/	/	/	/	/	/	/	/
Engineering Service Branch of Shanghai Electric Wind Power Group Co., Ltd.	/	/	/	/	/	/	/	/	/

Enterprises	Discharge of slag (tons)			Comprehensive utilization rate of the three wastes			Emission of greenhouse gas (tons)		
	2015	2016	2017	2015	2016	2017	2015	2016	2017
Shanghai Fujikura Cable Co., Ltd.	/	/	/	/	/	/	/	/	/
Shanghai Electric Power T&D Group Testing Company Limited	/	/	/	/	/	/	/	/	/
Shanghai Cyeco Environmental Technology Co., Ltd.	/	/	/	/	/	/	/	/	/
Goss International China	/	4	10.8	/	/	/	/	/	/
Nabtesco Motion Machinery (Shanghai) Co., Ltd	0.3	0.6	10.5	/	/	/	/	/	/
Shanghai Thales Saic Transport Company Limited	/	/	/	/	/	/	1197	1733	/
Shanghai United Bearing Company Limited	12.4	10.6	6.13	60%	60%	60%	/	/	/
Shanghai Tian An Bearing Company Limited	15.99	27.07	16.18	/	/	/	/	/	/
Shanghai Zhenhua Bearing Works Company Limited	66	66	66	/	/	/	/	/	/
Wuxi Turbine Blade Company Limited	/	/	/	/	/	/	46295	49095	47852
Shanghai Tool Works Company Limited	80	70	63	20	20	20	/	/	/
Shanghai Prime Biaowu High Tensile Company Limited	/	/	/	/	/	/	/	/	/
Shanghai High Strength Bolt Factory Company Limited	20	20	20	/	/	/	/	/	/
Shanghai Fastener and Welding Material Technology Research Centre Company Limited	/	/	/	/	/	/	/	/	/



## Disposal of Hazardous Wastes and Discharge of Air Pollutants from Industrial Production Enterprises

Enterprises	Ways Hazardous Wastes Discharged in 2017 (tons)				Emission of air pollutants in 2017 (tons)			
	Reuse	Incineration	Landfill	Disposal through authorized third party	Nitrogen oxides	Sulfur oxides	Particulates	Volatile organic compounds
Shanghai Electric Group Shanghai Electric Machinery Co., Ltd.	/	/	/	188.317	4.063999	0.004344	7.944232	3.8754
Shanghai Boiler Works, Ltd.	/	/	/	179.842	1.3487	0.5174	0.6745	29.267
Shanghai Turbine Works Co., Ltd.	/	/	/	1065.27	0.9609	0.0205	0.07054	5.56
Shanghai Power Station Auxiliary Equipment Works Co., Ltd.	/	/	/	5	/	/	/	/
The Generator Factory of Shanghai Electric Power Generation Equipment Co., Ltd.	/	/	/	117.65	/	/	/	92.1
Shanghai Yida Machinery Co., Ltd.	/	/	/	34.3	/	/	/	/
Shanghai Honggang Power Equipment Casting and Forging Co., Ltd.	/	/	/	12	3	0.5	11	/
Lin Gang Factory	/	/	/	/	/	/	/	/
Shanghai Electric Wind Power Equipment Dongtai Co., Ltd.	/	/	/	6	/	/	/	/
Shanghai Electric Wind Power Equipment Heilongjiang Co., Ltd.	/	/	/	4.8	/	/	/	/
Shanghai Electric KSB Pump Co., Ltd.	/	/	/	26	/	/	0.56	0.12
Shanghai Electric-KSB Nuclear Pumps & Valves Co., Ltd.	/	/	/	80.02	/	/	/	/
Shanghai No.1 Machine Tool Works Co., Ltd.	/	/	/	169.8	/	/	/	/
Shanghai Electric Nuclear Power Equipment Co., Ltd.	/	/	/	139.15	0.325734	0.01744	/	/
Shanghai Mitsubishi Elevator Co., Ltd.	/	/	/	358.1	1.329	0.003	/	0.4311
Shanghai Cimic Welding Consumables Co., Ltd.	/	/	/	/	/	/	0.004	/
Shanghai Electric Hydraulics & Pneumatics Co., Ltd.	/	/	/	18	/	/	/	/
Shanghai Renmin Electrical Apparatus Works	/	/	/	240	0.115	/	0.0135	/
Shanghai Electric Ceramic Works Co., Ltd.	/	/	/	/	/	/	/	/
Shanghai Nan Qiao Transformer Co., Ltd.	/	/	/	/	/	/	/	/
Shanghai Electric Power Electronics Co., Ltd.	/	/	/	/	/	/	/	/



Enterprises	Ways Hazardous Wastes Discharged in 2017 (tons)				Emission of air pollutants in 2017 (tons)			
	Reuse	Incineration	Landfill	Disposal through authorized third party	Nitrogen oxides	Sulfur oxides	Particulates	Volatile organic compounds
Shanghai Najie Electrical Complete Sets Co., Ltd.	/	/	/	/	/	/	/	/
Shanghai Nanhua-Lanling Electric Co., Ltd.	/	/	/	45.5	/	/	/	/
Shanghai Huapu Cable Co., Ltd.	/	/	/	1.5	/	/	/	/
Shanghai Dahua Electrical Equipment Co., Ltd.	/	/	/	0.5	/	/	/	/
Shanghai Feihang Electric Wire and Cable Co., Ltd.	/	/	/	2	/	/	/	/
Shanghai Jiejun New Electric Materials Co., Ltd.	/	/	/	2.76	/	/	/	0.55
Wujiang Transformer Co., Ltd.	/	/	/	/	/	/	/	/
Shanghai Electric Milling Equipment Co., Ltd.	/	/	/	15.76	/	/	/	5.81
Shanghai Electric Shanghai Heavy Machinery Forging Co., Ltd.	/	/	/	6.78	50.2036	0.10733	20.7647	/
Shanghai Institute of Machinery Building Technology Co., Ltd.	/	/	/	/	/	/	/	/
Shanghai Ship-use Crankshaft Co., Ltd.	/	/	/	9.8	/	/	/	/
SNI Valve Co., Ltd.	/	/	/	33.73	/	/	0.2028	0.2017
Shanghai Fanuc Robotics Co., Ltd.	/	/	/	1.5	/	/	/	/
Shanghai Centrifuge Institute Co., Ltd.	/	/	/	/	/	/	/	/
Shanghai Capital Numerical Control Co., Ltd.	/	/	/	0.05	/	/	/	/
Shanghai Machine Tool Works Co., Ltd.	/	/	/	18.14	/	/	/	/
Shanghai Blower Works Co., Ltd.	/	/	/	/	/	/	/	/
Shanghai Denso Fuel Injection Co. Ltd.	/	/	/	12	/	/	/	/
Shanghai Electric Wind Power Equipment Gansu Co., Ltd.	/	/	/	8.6	/	/	/	/
Shanghai Electric Wind Power Yunnan Co., Ltd.	/	/	/	/	/	/	/	/
Shanghai Electric Wind Power Equipment Hebei Co., Ltd.	/	/	/	9.48	/	/	/	/



## Disposal of Hazardous Wastes and Discharge of Air Pollutants from Industrial Production Enterprises

Enterprises	Ways Hazardous Wastes Discharged in 2017 (tons)				Emission of air pollutants in 2017 (tons)			
	Reuse	Incineration	Landfill	Disposal through authorized third party	Nitrogen oxides	Sulfur oxides	Particulates	Volatile organic compounds
Shanghai Electric Wind Power Group Co., Ltd.	/	/	/	28.88	/	/	/	/
Engineering Service Branch of Shanghai Electric Wind Power Group Co., Ltd.	/	/	/	/	/	/	/	/
Shanghai Fujikura Cable Co., Ltd.	/	/	/	/	/	/	/	/
Shanghai Electric Power T&D Group Testing Company Limited	/	/	/	/	/	/	/	/
Shanghai Cyeco Environmental Technology Co., Ltd.	/	/	/	/	/	/	/	/
Goss International China	/	/	/	10.8	/	/	/	/
Nabtesco Motion Machinery (Shanghai) Co., Ltd	/	/	/	338.8	/	/	/	1.521
Shanghai Thales Saic Transport Company Limited	/	/	/	/	/	/	/	/
Shanghai United Bearing Company Limited	/	/	/	12.2	0.0603	/	0.0043	0.396
Shanghai Tian An Bearing Company Limited	/	/	/	74.14	/	/	/	/
Shanghai Zhenhua Bearing Works Company Limited	/	/	/	7.6	/	/	0.1097	/
Wuxi Turbine Blade Company Limited	/	/	/	210.44	10.2066	0.24105	0.007	3.00607
Shanghai Tool Works Company Limited	/	/	/	79	0.9842	1.33	0.1596	/
Shanghai Prime Biaowu High Tensile Company Limited	/	/	/	/	/	/	/	/
Shanghai High Strength Bolt Factory Company Limited	/	/	/	14	/	/	/	/
Shanghai Fastener and Welding Material Technology Research Centre Company Limited	/	/	/	/	/	/	/	/

## Discharge of Water Pollutants from Industrial Production Enterprises

Enterprises	Discharge of water pollutants in (tons)					
	Total annual drainage capacity (tons)	Total annual COD discharge (tons)	Total annual ammonia nitrogen discharge (tons)	pretreatment in sewage treatment station before discharge	Discharge through urban pipe network	In compliance with discharge standards
Shanghai Electric Group Shanghai Electric Machinery Co., Ltd.	626704.2	68.310758	4.148782	Yes	Yes	Yes
Shanghai Boiler Works, Ltd.	137369	28.428	2.903	/	Yes	Yes
Shanghai Turbine Works Co., Ltd.	715763	30.67	5.45	Yes	Yes	Yes
Shanghai Power Station Auxiliary Equipment Works Co., Ltd.	180653	23	1.02	Yes	Yes	Yes
The Generator Factory of Shanghai Electric Power Generation Equipment Co., Ltd.	/	/	/	Yes	Yes	Yes
Shanghai Yida Machinery Co., Ltd.	25938	28.27	5.08	Yes	Yes	Yes
Shanghai Honggang Power Equipment Casting and Forging Co., Ltd.	/	/	/	Yes	Yes	Yes
Lin Gang Factory	11711	0.71	0.082	否	Yes	Yes
Shanghai Electric Wind Power Equipment Dongtai Co., Ltd.	5014	/	/	否	Yes	Yes
Shanghai Electric Wind Power Equipment Heilongjiang Co., Ltd.	1228	/	/	否	Yes	Yes
Shanghai Electric KSB Pump Co., Ltd.	149808	6.75	0.96	Yes	Yes	Yes
Shanghai Electric-KSB Nuclear Pumps & Valves Co., Ltd.	12017	1.261785	0.0264374	否	Yes	Yes
Shanghai No.1 Machine Tool Works Co., Ltd.	137495	24.75	2.475	否	Yes	Yes
Shanghai Electric Nuclear Power Equipment Co., Ltd.	28398	4.7247	0.2825	否	Yes	Yes
Shanghai Mitsubishi Elevator Co., Ltd.	95591.7	2.3793	0.3078	Yes	Yes	Yes
Shanghai Cimic Welding Consumables Co., Ltd.	54900	1.42	0.76	Yes	Yes	Yes
Shanghai Electric Hydraulics & Pneumatics Co., Ltd.	7281	/	/	Yes	Yes	Yes
Shanghai Renmin Electrical Apparatus Works	83476	/	/	Yes	Yes	Yes
Shanghai Electric Ceramic Works Co., Ltd.	/	/	/	/	/	/
Shanghai Nan Qiao Transformer Co., Ltd.	/	/	/	/	/	/
Shanghai Electric Power Electronics Co., Ltd.	11681	/	/	/	Yes	Yes

## Discharge of Water Pollutants from Industrial Production Enterprises



Enterprises	Discharge of water pollutants in (tons)					
	Total annual drainage capacity (tons)	Total annual COD discharge (tons)	Total annual ammonia nitrogen discharge (tons)	pretreatment in sewage treatment station before discharge	Discharge through urban pipe network	In compliance with discharge standards
Shanghai Najie Electrical Complete Sets Co., Ltd.	/	/	/	/	Yes	Yes
Shanghai Nanhua-Lanling Electric Co., Ltd.	/	/	/	No	Yes	Yes
Shanghai Huapu Cable Co., Ltd.	/	/	/	No	Yes	Yes
Shanghai Dahua Electrical Equipment Co., Ltd.	/	/	/	/	/	/
Shanghai Feihang Electric Wire and Cable Co., Ltd.	68175	10.976	1.145	/	Yes	Yes
Shanghai Jiejin New Electric Materials Co., Ltd.	2658	/	/	Yes	Yes	Yes
Wujiang Transformer Co., Ltd.	/	/	/	/	/	/
Shanghai Electric Milling Equipment Co., Ltd.	472384.8	27.847084	2.7126697	Yes	Yes	Yes
Shanghai Electric Shanghai Heavy Machinery Forging Co., Ltd.	894283.2	52.718	5.1354	Yes	Yes	Yes
Shanghai Institute of Machinery Building Technology Co., Ltd.	/	/	/	/	/	/
Shanghai Ship-use Crankshaft Co., Ltd.	/	/	/	/	/	/
SNJ Valve Co., Ltd.	8911.8	0.4485	0.0414	Yes	Yes	Yes
Shanghai Fanuc Robotics Co., Ltd.	28627	5.8	0.5	No	Yes	Yes
Shanghai Centrifuge Institute Co., Ltd.	5500	/	/	No	Yes	Yes
Shanghai Capital Numerical Control Co., Ltd.		0.5096	/	Yes	Yes	Yes
Shanghai Machine Tool Works Co., Ltd.	64461	2.41	0.36	Yes	Yes	Yes
Shanghai Blower Works Co., Ltd.	/	/	/	/	/	/
Shanghai Denso Fuel Injection Co. Ltd.	44399	0.8	/	Yes	Yes	Yes
Shanghai Electric Wind Power Equipment Gansu Co., Ltd.	3490	0.49	0.0014	No	Yes	Yes
Shanghai Electric Wind Power Yunnan Co., Ltd.	2472	/	/	No	Yes	Yes
Shanghai Electric Wind Power Equipment Hebei Co., Ltd.	7042	0.24	0.0037	No	Yes	Yes

Enterprises	Discharge of water pollutants in (tons)					
	Total annual drainage capacity (tons)	Total annual COD discharge (tons)	Total annual ammonia nitrogen discharge (tons)	pretreatment in sewage treatment station before discharge	Discharge through urban pipe network	In compliance with discharge standards
Shanghai Electric Wind Power Group Co., Ltd.	30957	1.44	0.087	No	Yes	Yes
Engineering Service Branch of Shanghai Electric Wind Power Group Co., Ltd.	/	/	/	/	/	/
Shanghai Fujikura Cable Co., Ltd.	52992	/	/	Yes	Yes	Yes
Shanghai Electric Power T&D Group Testing Company Limited	7200	/	/	/	Yes	Yes
Shanghai Cyeco Environmental Technology Co., Ltd.	/	/	/	Yes	Yes	Yes
Goss International China	21889	/	/	Yes	Yes	Yes
Nabtesco Motion Machinery (Shanghai) Co., Ltd	17893	2.4	0.19	No	Yes	Yes
Shanghai Thales Saic Transport Company Limited	2237	/	/	/	Yes	Yes
Shanghai United Bearing Company Limited	105120	2.6	0.34	Yes	Yes	Yes
Shanghai Tian An Bearing Company Limited	30621	0.7621	0.0986	No	Yes	Yes
Shanghai Zhenhua Bearing Works Company Limited	16290	0.00485849	0.0004335	Yes	Yes	Yes
Wuxi Turbine Blade Company Limited	86000	18.838	1.97	Yes	Yes	Yes
Shanghai Tool Works Company Limited	71237.7	5.27	0.08	Yes	Yes	Yes
Shanghai Prime Biaowu High Tensile Company Limited	/	/	/	/	/	/
Shanghai High Strength Bolt Factory Company Limited	/	/	/	/	/	/
Shanghai Fastener and Welding Material Technology Research Centre Company Limited	621	/	/	/	/	/

## Energy Consumption of Industrial Production Enterprises

Enterprises	Energy consumption per unit of output value (tons of standard coal/RMB' 0000)			Water consumption per unit of output value (tons of water/RMB' 0000)		
	2015	2016	2017	2015	2016	2017
Shanghai Electric Group Shanghai Electric Machinery Co., Ltd.	0.0378	0.0341	0.0622	3.2817	2.6832	2010.5
Shanghai Boiler Works, Ltd.	0.0137	0.0147	0.0178	0.2	0.3	0.4
Shanghai Turbine Works Co., Ltd.	0.0196	0.02	0.02	1.6	1.2	1.3
Shanghai Power Station Auxiliary Equipment Works Co., Ltd.	0.076	0.074	0.076	1.36	1.35	1.35
The Generator Factory of Shanghai Electric Power Generation Equipment Co., Ltd.	0.0172	0.0172	0.15	0.3434	0.3605	0.36
Shanghai Yida Machinery Co., Ltd.	0.02	0.02	0.019	0.44	0.42	0.54
Shanghai Honggang Power Equipment Casting and Forging Co., Ltd.	0.1229	0.1063	0.075	1.443	1.185	1.184
Lin Gang Factory	/	0.0032	0.0035	/	0.1024	0.067
Shanghai Electric Wind Power Equipment Dongtai Co., Ltd.	/	0.0006	0.003	0.0263	0.0583	0.09
Shanghai Electric Wind Power Equipment Heilongjiang Co., Ltd.	/	0.1	/	0.13	0.03	/
Shanghai Electric KSB Pump Co., Ltd.	0.0264	0.0276	0.014	2.1368	1.7961	1.9
Shanghai Electric-KSB Nuclear Pumps & Valves Co., Ltd.	0.0038	0.0246	0.013877	0.1651	0.1517	0.2527
Shanghai No.1 Machine Tool Works Co., Ltd.	0.0128	0.0211	/	1.57	2.33	2.35
Shanghai Electric Nuclear Power Equipment Co., Ltd.	0.0345	0.0686	0.0687	0.181	0.313	0.37
Shanghai Mitsubishi Elevator Co., Ltd.	0.0075	0.0075	0.00743	0.067	0.059	0.057
Shanghai Cimic Welding Consumables Co., Ltd.	1.13	0.16	921	1.64	2.71	98000
Shanghai Electric Hydraulics & Pneumatics Co., Ltd.	0.062	0.056	0.064	0.22	0.221	1.54
Shanghai Renmin Electrical Apparatus Works	0.0004	0.0004	0.000418	0.3601	0.3247	0.3179
Shanghai Electric Ceramic Works Co., Ltd.	0.0069	0.0085	0.0109	/	/	0.395
Shanghai Nan Qiao Transformer Co., Ltd.	/	/	/	0.85	0.9	0.7721
Shanghai Electric Power Electronics Co., Ltd.	0.0031	0.0078	0.0059	0.1078	0.3317	0.768
Shanghai Najie Electrical Complete Sets Co., Ltd.	0.0005	0.0051	0.005	0.37	0.23	0.25

Enterprises	Energy consumption per unit of output value (tons of standard coal/RMB' 0000)			Water consumption per unit of output value (tons of water/RMB' 0000)		
	2015	2016	2017	2015	2016	2017
Shanghai Nanhua-Lanling Electric Co., Ltd.	0.01	0.009	0.011	0.58	0.82	0.6
Shanghai Huapu Cable Co., Ltd.	0.01	0.014	0.0127	1.54	1.94	1.239
Shanghai Dahua Electrical Equipment Co., Ltd.	/	/	/	0.198	0.228	/
Shanghai Feihang Electric Wire and Cable Co., Ltd.	0.0069	0.0077	/	0.4421	0.7392	/
Shanghai Jiejin New Electric Materials Co., Ltd.	0.021	0.024	138	0.0003	0.0003	0.48
Wujiang Transformer Co., Ltd.	0.011	0.01	/	1.43	0.73	/
Shanghai Electric Milling Equipment Co., Ltd.	/	0.04	/	/	7.986	/
Shanghai Electric Shanghai Heavy Machinery Forging Co., Ltd.	/	1.1517	1.306	/	23.28	22.06
Shanghai Institute of Machinery Building Technology Co., Ltd.	0.0477	0.0694	/	1.31	1.46	/
Shanghai Ship-use Crankshaft Co., Ltd.	/	/	/	/	/	/
SNJ Valve Co., Ltd.	0.028	0.041	/	1.768	2.714	1.21
Shanghai Fanuc Robotics Co., Ltd.	0.001	0.001	/	0.17	0.13	0.08
Shanghai Centrifuge Institute Co., Ltd.	/	/	/	/	/	/
Shanghai Capital Numerical Control Co., Ltd.		0.03	0.03	0.46	0.28	1788
Shanghai Machine Tool Works Co., Ltd.	0.0383	0.0497	0.047	2.11	3.29	2.07
Shanghai Blower Works Co., Ltd.	/	/	/	/	/	/
Shanghai Denso Fuel Injection Co. Ltd.	0.0653	0.0638	0.0606	0.65	0.63	0.78
Shanghai Electric Wind Power Equipment Gansu Co., Ltd.	/	/	0.001	/	/	0.335
Shanghai Electric Wind Power Yunnan Co., Ltd.	/	/	0.002	/	/	0.38
Shanghai Electric Wind Power Equipment Hebei Co., Ltd.	/	/	0.0035	/	/	0.64
Shanghai Electric Wind Power Group Co., Ltd.	/	0.0112	0.003	/	0.6935	0.138
Engineering Service Branch of Shanghai Electric Wind Power Group Co., Ltd.	/	/	/	/	/	/

## Energy Consumption of Industrial Production Enterprises

Enterprises	Energy consumption per unit of output value (tons of standard coal/RMB' 0000)			Water consumption per unit of output value (tons of water/RMB' 0000)		
	2015	2016	2017	2015	2016	2017
Shanghai Fujikura Cable Co., Ltd.	0.068	0.15	0.12036	1.184	6.097	3.472
Shanghai Electric Power T&D Group Testing Company Limited	/	/	/	/	/	/
Shanghai Cyeco Environmental Technology Co., Ltd.	/	/	/	/	/	/
Goss International China	0.0782	0.0777	0.0528	3.82	1.72	1.22
Nabtesco Motion Machinery (Shanghai) Co., Ltd	996	1401	2255	0.586	0.341	0.246
Shanghai Thales Saic Transport Company Limited	/	/	/	/	/	/
Shanghai United Bearing Company Limited	0.104	0.108	0.101	2.421	3.032	2.6148
Shanghai Tian An Bearing Company Limited	0.1315	0.1363	0.1416	1.77	1.2911	1.7476
Shanghai Zhenhua Bearing Works Company Limited	0.1042	0.1003	0.0954	0.714	0.78	0.729
Wuxi Turbine Blade Company Limited	0.111	0.108	0.106	1.84	1.92	2.31
Shanghai Tool Works Company Limited	/	/	/	0.847	0.786	0.631
Shanghai Prime Biaowu High Tensile Company Limited	/	/	/	/	/	/
Shanghai High Strength Bolt Factory Company Limited	0.0995	0.1038	0.1105	1.94	2.01	2.30
Shanghai Fastener and Welding Material Technology Research Centre Company Limited	/	/	/	0.72	0.77	0.63



## 5.3 | Enhancing environmental awareness to promote green operation

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 strategy, 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 have bright prospects.

### © The packaging material consumption of Shanghai Electric for 2017:

Packaging material	Consumption (tons)	Density/RMB' 00 million output value
Wood	27,995	35.19
Coiling reel for cable	7,221	9.08
Iron trestle	13,134	16.51
Iron box	1,437	1.81
Cardboard box	3,974	5.00
Plastics	240	0.30
Others	281	0.35





### » Considering environmental impact in whole process

Wind Power Group will consider the influence on surrounding environment during site selection, design and construction of production bases and the design and production of new products. During site selection, it firstly appraises the effects on the environment with an aim to appraise the positive and negative influence on the community environment, the society and the economy. In regions with biological diversity, it considers adopting necessary protection programs. It has maintained the certification of a third-party environment management system (ISO14001) for many production bases for over ten years, which appraises the effectiveness of the environment management system of enterprises. Besides third-party reviews and certifications, it also conducts self-appraisal and internal audit on the environment, health and safety of projects to ensure the compliance of production bases. Meanwhile, it also establishes clear environmental expectations and guidelines on suppliers to facilitate acting in concert with them in improving the environment management in the whole industrial chain.

### » Enhancing energy utilization efficiency with improved technology

With the adjustment of the industrial structure and the changes in the product structure, boilers at power stations are also upgraded. As a result, Shanghai Boiler Works set the sustainable development strategy for the "13th Five-Year Plan" period, followed the development orientation with reducing energy consumption and improving energy utilization efficiency and set the target of reducing an energy equivalent to 1,800 tons of standard coals during "13th Five-Year Plan" period. The focus in the energy-saving work is to adopt advanced technology, optimize products design and further develop circulating fluidized beds, (ultra-) supercritical and other clean coal-fired power generation technologies. The energy consumption reduced 10% after the improvement. It effectively controlled the generation and emission of NOx and SO2 and guaranteed its leadership in the industry.

### » Green office

We firstly procure and use green and environmental products to reduce emissions from pollution sources. We require staff driving less and taking public transportation and bicycles etc. more and arrange shuttle buses for staff who are entitled to such benefit to solve staff's problems in the last kilometer of travelling and 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; and 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 resources on the earth.

### » Improving power utilization efficiency

We conduct reasonable transformation and updating and regular maintenance on equipment to ensure their normal operation. For the use of the central air-conditioner, we require the staff developing a good habit of closing the door behind them. 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, walk on stairs more and take elevators less. Through the multi-channel publicity and popularization of environmental protection knowledge and with effective measures taken, the total power consumption plunged significantly in 2017 with our joint efforts.



### » Improving water utilization efficiency

We strictly abide by state regulations in water source extraction, and no related issues have occurred. 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 series of measures, the Group's water-saving has been obviously improved and the water utilization efficiency has been effectively enhanced.

1. Arrange special staff responsible for water saving management and ensure the implementation of various work.
2. 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.
3. Collect relevant laws, regulations and standards and reinforce learning about laws and regulations on water saving to ensure water utilization strictly based on plans.
4. 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.

## ▶▶ Promoting industrialization of technology on reducing PM2.5 emission

The Development and Industrialization of Large Thermal Power Equipment on Reducing PM2.5 Emission, a special program of Shanghai Municipal Commission of Economy and Informatization on the development of significant technical equipment undertaken by SEC Power Generation Environment Protection Engineering Co., Ltd., passed the inspection and acceptance. The program has been applied in many power plants and is expected to achieve industrialization. In order to reduce the PM2.5 emission from sources, SEC Power Generation Environment Protection Engineering made customized plans on emission reduction based on the actual transformation conditions of new thermal power plants and existing large thermal power plants. It will finally establish system integration technology and equipment with the integration of desulfurization, denitration and dust removal and effectively reduce the frequent fog and haze weather. After the industrialization of the program, it can meet the national requirements on ultra-low emissions from coal-fired units, prevent gypsum rain and white smoke plume and have demonstration effects on ultra-low emissions in China. It is also of significance in advancing common progress in the technology on the treatment of smoke from thermal power plants, promoting the efficient operation of relevant technology on environmental island and its equipment with low energy consumption and improving the environmental protection industry in China.

## ▶▶ Adopting European standards on hazardous wastes disposal

The hazardous wastes disposal program in Binhai new district of Laobagang Town, Haian County is the first investment project of Shanghai Electric in the treatment of hazardous wastes. The project adopts the design concept of CTU Clean Technology Universe AG and its design plan is first applied in the hazardous wastes treatment programs of Shanghai Electric. Currently, the domestic standards on smoke emission are less strict than EU emission standards. The adoption of CTU's design plan in the hazardous wastes treatment program can meet EU emission standards. Currently, there are no facilities for the concentrated treatment of hazardous wastes in Haian County and they have to be transported to other areas for harmless treatment. The transportation is full of factors beyond control and it also increases the operation cost of enterprises. The project will be a green garden-style plant after completion. With mature and reliable technology and equipment on wastes treatment, it can significantly reduce the adverse effects of hazardous wastes on local ecological environment.

## ▶▶ First fishery photovoltaic complementary project completed



On 24 June, the Phase-I 20MW fishery photovoltaic complementary distributed photovoltaic power generation project of Shanghai Electric (Guzhen) Photoelectric and New Energy Co., Ltd. at Diaoyutai Lake, Guzhen County was successfully connected to the power grid and started power generation. It is the first "fishery photovoltaic complementary" distributed photovoltaic power generation project invested by Shanghai Electric as a main contractor. After more than half a year's construction, rows of magnificent blue photovoltaic solar panels for photovoltaic power generation have been established on the mudflat and the mudflat and rivers under them can be used for aquaculture. It achieved the comprehensive utilization for photovoltaic power generation and aquaculture. After the completion of the project, it can reduce the consumption of coal and other primary energy and water resources, reduce the operation cost of power generation units and significant economic and environmental benefits.

## ▶▶ Biomass thermal power project in Wuhe completed

On 11 January, the biomass thermal power project in Wuhe County, Anhui Province was successfully connected to the power grid. It is the first stalk-fired power generation project connected to the power grid among the first batch of biomass power generation projects of Shanghai Electric. Based on Shanghai Electric's own resources, the project adopted advanced supporting equipment of the Group. With the higher unit efficiency and advanced automatic control system in the industry, it guaranteed the "hard power" of the project and enhanced the "soft power" for the operation of power plants. The project is located at the main grain production areas on both banks of the Huai River and mainly uses crop straws and wastes from plate processing as fuels for power generation. The plant ash after combustion will be processed into organic fertilizers and applied in farms. As a result, it achieved a circular economic pattern in agriculture with "resources – industry – wastes - renewable resources". The project can consume 260,000 tons of agricultural and forestry wastes every year, solve the comprehensive utilization of stalks from nearly 600,000 mu of farmlands, reduce the emission of NOx and other waste gas by over 600 tons and distribute nearly 200 million kWh of green power to the power grid every year after being put into operation. While bringing environmental protection effects, it also solves the problem of local government in the treatment of agricultural and forestry wastes in main grain production areas and bring an annual revenue of approximately RMB85 million to local farmers, transportation and processing industry as well as various employment opportunities. It achieves the integration of environmental, economic and social benefits.





## Creating a better and harmonious life with employees and the public

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.

#### ▶ Partaking in building Chongming into a world-class ecological island

On 28 April, the PPP contract-signing ceremony themed at "Contribute to Comprehensive Protection of Yangtze River Economic Zone and Build up a World-class Ecological Island" was held in Chongming District Government, at which, 12 large enterprises including Shanghai Electric entered into strategic cooperation agreements with Chongming District Government. The agreements provided that Shanghai Electric and Chongming Government would develop close cooperation in the energy conservation and environmental protection sector such as township and rural domestic sewage treatment and intelligent water management, environmental restoration and river dredging and solid waste treatment, municipal infrastructure construction sector such as urban railroad transportation, public buildings, transportation mechatronics as well as smart city service platform, and new energy projects including wind power generation, photovoltaic power generation and gas driven CCHP, thus contributing to the building of Chongming into a world-class ecological island.



#### ▶ Aligning with Minhang District Government thoroughly

On 26 December, Shanghai Electric and Minhang District Government entered into cooperation agreements. The rapid development of the Minhang base of Shanghai Electric is inseparable from the great support of Minhang District Government. At present, Shanghai Electric is kicking off a new round of development and the two parties will develop a new round of strategic cooperation so as to have aligned development planning and transform from traditional sectors to high-end modern services industry. The two parties will also conduct in-depth cooperation in respect of intelligent railroad transportation, thus making use of the complementary advantages of each other's and effecting mutual benefits through cooperation.

#### ▶ Promoting "Shanghai Electric-Wuxi" cooperation to a higher level

On 19 December, Shanghai Electric visited Wuxi Government to carry out realistic and honest communication on comprehensive cooperation between Shanghai Electric and Wuxi Government. It has been four years since Shanghai Electric and Wuxi Government entered into strategic agreements and over 300 enterprises in Wuxi have been complementing and cooperating with Shanghai Electric. As Shanghai Electric is initiating a new round of development, both sides are looking forward to broader and closer cooperation at higher quality.

#### ▶ "Four Giants" teamed up to establish the Jiading Aviation Industrial Park

On 28 December, Shanghai Electric entered into Four-party strategic cooperation agreement on Jiading project with representatives of Shanghai Jiaoyun, Shangtex and Shanghai Jingjia Culture to establish the Huanqiu Aviation Industrial Park in Jiading with concerted efforts thus creating new glories for advanced manufacturing of Shanghai jointly. The co-investment and cooperation of the four parties will make use of land resources in a reasonable and effective manner and promote the transformation and upgrade of the regional industrial structure.

#### ▶ 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 2017, 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. There was no fatal accident in 2017.

### ➤ Guarded against risk spillover in virtue of "guaranteeing safety through technology"

**Emphasizing input:** an average of RMB240 million is invested in the transformation and upgrade of production safety-related equipment and facilities application of new safety technology and other projects.

**Stressing popularization:** based on the appraisal and selection campaign on innovated results of safety technology application in 2016, 10 safety technology application results were commended in 2017 for Group-wide generalization.

**Highlighting intelligence:** subsidiaries tried out the "TSM" intelligent operation system management on the shuttle bus to effect real-time monitoring over the service of shuttle bus, thus rectifying the bad driving habits of the drivers; "QR code" labelling management was fully adopted for large tooling and moulds, aiming for all-around management and control; electronic authorization system was promoted for motor vehicles in the plants so as to identify operators with certificates and avoid unauthorized operation; the 3D (3G) stimulator for large hoisting and conveying equipment which specified the designed movements and procedures of hoisting and installation was developed, having improved the safety ratio dramatically.

**Capturing the essence:** we fully advanced the implementation of the VOC project and enhanced collaboration with local environmental protection bureaus so as to ensure compliance with the requirements of regulations and standards when concerned about the environment and public welfare. 10 enterprises completed the VOC project upgrading in 2017.

### ➤ Enhanced vertical monitoring over protection safety

The Group has formulated and implemented annual production safety, special inspection (supervision) schemes to conduct intensive scrutiny over 8 enterprises and inspection on safety and environmental of operation and management over 42 enterprises; adopted the Friday special inspection system which prescribed that safety department of the Group would carry out safety and environmental inspection on the subsidiaries every Friday. From January to November, 45 subsidiaries were inspected and 125 rectification opinions and written recommendations were proposed based thereon. In June, the Group carried out checklist special inspection over personnel protection equipment management and kitchen hygiene and safety in cooperation with the trade union of the Mechanical and Electrical Company. 56 hidden dangers were found and 52 correction opinions were put forward. Rectification plans were formulated for hidden dangers in need of time to complete relevant corrections and follow-up procedures were made until such rectifications concluded. The Group also oversaw the safety management, especially the performance of the systems, in enterprises outside the city with 6 enterprises checked. Enterprises outside the city turned out orderly in respect of integrated management.

### ➤ Strictly controlled public security risks of our properties

The Group conducted thorough review on 473 properties and made peril and risk identification over places vulnerable to mass casualties such as fires and stampedes, having listed 6 general categories consisting of 31 critical risk control items and 130 class-II risk control items accordingly. We have formulated and issued the Administrative Measures for Class-II risk concerning Public Security in the Leased Properties of Shanghai Electric, had the lessee signed on it to confirm their responsibilities and put up notifications such that it could be implemented on each post and become the responsibility of each individual.

### ➤ Fully carried out fire safety special inspection action

According to the arrangements of the municipal firefighting commission and the Shanghai Office of SASAC, the Group viewed the firefighting special rectification action as the key tasks of production safety work throughout the year. We conducted the "zero hour" actions at the leased properties three times in a row to inspect the fire safety at dormitories, commercial parks, recreational venues in the leased properties at midnight. For the year, inspections over leased venues were carried out for 984 times with 308 fire hazards danger sites identified and rectified and 25 fire emergency drills were performed in key places. At present, the enterprises are working on the bimonthly firefighting-focused special safety actions, thereby fully implementing the fire safety special action scheme of the Shanghai Office of SASAC and ensuring non-occurrence of fire accidents that would have material social impact.





## » Developed bimonthly production safety special rectification actions

According to the action plans, bimonthly special rectification actions were targeted at parties concerned and the corporate shuttle bus from January to February, occupational health and confined areas from March to April, prevention of electric shock from May to June, "three preventions", i.e., prevention of heatstroke, flood and typhoon from July to August, prevention of falling from high places and special equipment from September to October and winterizing and firefighting from November to December. Thanks to the foregoing, a total of 2,318 hazards danger points were identified and rectified.

## » Organized training and education on production safety practices

The Group arranged 10 systematic production safety courses including the training concerning the leadership's joint accountability of the CPC system and enterprise system, risk management and control and hazard screening training, standardized production safety training, training on laws and regulations as well as the "Opinions" and trainings in relation to occupational health, production safety emergency management as well as safety management practice and knowledge. The leadership and staff attended such trainings for over 1,600 person-times, having confirmed the practicality of the trainings.

## » Two enterprises accredited as national and city-level safety culture model enterprises, respectively

According to the Notification on Nominating 2017 National Safety Culture Construction Model Enterprises issued by China Association of Work Safety, SEPG Shanghai Generator Works was nominated as a "2017 National Safety Culture Construction Model Enterprise". In recent years, Shanghai Generator Works continued to improve its management based on the standardized management model. It has integrated safety management into each business procedure of the plant from the perspective of man-machine safety, intrinsic safety, harmony and safety, Temobi safety intelligence and information, intelligent safety management, intelligent safety technology and others.

## » Organized the Work Safety Law promotion week energetically

As it was the national Work Safety Law promotion week from 1 December to 7 December, the Group issued instructions to require relevant units to make proper arrangement for various events during the promotion week. According to the statistics, around 100 enterprises of the Group participated in on-site promotion campaigns for 26,058 person-times, passed out 7,665 pieces of leaflets and brochures, attended law dissemination trainings for 18,269 person-times and entered legal knowledge contest for 4,430 person-times. A variety of approaches such as study by group, presentations, broadcasting, and Internet platform were adopted to carry out campaigns on popularizing and following through Work Safety Law.

## » Nine enterprises qualified for the National Production Safety Standardization Class I

A total of nine enterprises of Shanghai Electric passed the review on National Production Safety Standardization Class I. Among the nine enterprises, Shanghai Turbine Works Co., Ltd., Shanghai Boiler Works, Ltd., Shanghai Electric Group Shanghai Electric Machinery Co., Ltd., Shanghai Power Station Auxiliary Equipment Works Co., Ltd., Shanghai Mitsubishi Elevator Co., Ltd. and SEPG Shanghai Generator Works passed their periodical reviews on National Production Safety Standardization Class I, while Shanghai Electric Nuclear Power Equipment Co., Ltd. and Wujiang Transformer Co., Ltd. went through the first review on National Production Safety Standardization Class I.



## SHANGHAI ELECTRIC

### » Launched all kinds of safety drills

The Group organized and conducted a hoisting emergency drill. The drill modelled the scenario where two on-site operators were injured in a crane accident when the 150-tonned crane was hoisting and conveying a large water tank in the workshop. The drill mainly consisted of three parts, i.e., occurrence of accident, emergency response and spot treatment. The drill equipped the divisions and relevant staff of the plant with a clearer picture about the emergency plans concerning crane accident. Through the drill, the feasibility of the emergency plan was corroborated, spot treatment capability of the emergency rescue team was trained and the sense of prevention from production safety accident of the staff was also enhanced.

The Group also organized a winter fire fighting and suppression rehearsal for the new recruits to enhance their sense of fire safety, enrich their fire suppression knowledge and improve their adaptability to changes and self-protection capability in case of emergency. After the rehearsal, the safety officer coached employees with substandard operation procedures afresh, thus making sure that everyone has comprehended correct fire suppression techniques proficiently.

In addition, an acute chemical poisoning rehearsal was carried out in cooperation with the Commission of Health and Family Planning of Minhang District and the Centre for Disease Control of the district. A spray painter acted as if having toxic symptoms and the workshop safety officer and the security department performed first aid on his, which demonstrated the well-established ability of emergency management.



## 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 AMD boost the betterment of people's livelihood, with a view to pursuing the harmonious development of the enterprises and the social and benefiting the neighbourhood, the human kind and the nature. The Group had 636 volunteers in 2017.

### » Power Generation Engineering Company aiding Iran after the deadly earthquake

The border region between Iran and Iraq experienced the deadly earthquake with 7.3 magnitudes at 21:18 on 12 November, local time, in Iran, inflicting heavy casualties on Kermanshah, Iran. In active response to the appeal of the local development district, on 18 November, the Lamerd project department of Shanghai Electric Power Generation Engineering Company, in the company of Ghadir Energy Company and local officials of the development district, presented their procured living provisions to the local Red Cross Society, who would pass on the same to local victims. Such deeds brought about the solidarity spirit of "when disaster struck, help came from all directions" of us Chinese to Iranian people and also won over unanimous praise among the development district and from the proprietors.



### » Delivering care to the welfare house

On the Children's Day, volunteers of the Group reached out to the children under the arrangement of the house. The volunteers put on various animal-shaped headwear and played games with the children hand in hand to have the retarded children feel the warmth of family. Besides, they also bought heaps of toys and snacks for the children at their own expenses.

### » "Blue Ribbon" charity bazaar for the works of autistic children

On 10 May, the "Blue Ribbon" volunteers of Shanghai Electric Wind Power Group Co., Ltd. hosted the charity bazaar once again in cooperation with the Blue Harbour Autistic Aiding Centre. Over RMB5,000 obtained therefrom were all handed to the Blue Harbour Autistic Aiding Centre to improve the living and learning conditions of the autistic children. All the small and exquisite artworks exhibited at the charity bazaar were made by the autistic children on their own. Some employees who came to the bazaar saw these artworks and gushed "as these children had to devote more painstaking attentiveness and efforts to these works than normal children did, I felt obliged to buy a few to support them, whether need or not."



### » "Four guardian warriors" of Minhang becoming tourist attractions

Shanghai Turbine Works Co., Ltd., Shanghai Electric Machinery Co., Ltd., Shanghai Boiler Works Ltd. and Shanghai Heavy Machinery Plant Co. have been acclaimed as "four guardian warriors" of Minhang. Days ago, Jiangchuan sub-district office of Minhang district initiated the "Jiangchuan people get to know Jiangchuan" event and organised citizen representatives to visit sights in the "four guardian warriors" such as the corporate culture centre of Shanghai Turbine Works, the statue of Chairman Mao of Shanghai Electric Machinery and the ten-thousand-ton hydraulic press of Shanghai Heavy Machinery Plant Co. Some citizen representatives were retired employees of the "four guardian warriors" and were amazed by the new looks of the plants.



### » Paired support in full swing

According to the Opinions on Enhancing Comprehensive Support to the Countryside of Shanghai and the Requirements on the New Round of Paired Support Work issued by Shanghai Committee of C.P.C. and its Rural Work Office, Shanghai Electric paid close attention to comprehensive support work geared to Zhuanghang Town, Fengxian District, Shanghai and had entered into the "Paired Support Framework Agreement" with Zhuanghang Town, pursuant to which, the two parties would promote the paired rural support activities through major aspects concerning joint promotion of development, organizational construction with concerted efforts, cultivating capable persons together and mutual forging of culture. The Company carried out practice work and solved troublesome matters in promotion of new countryside construction, economic development, refreshment of the backward village look according to the work requirement of "supplementing agriculture with industry and subsidizing villagers through enterprises", as guided by the working thoughts of reform, innovation and development and based on sufficient research, coordination and communication. The Company provided staff from Zhuanghang Town with a communication and learning platform capitalizing on the educational and training resources of the Group, took initiative to solve problems concerning the overstocked fruits of local farmers and participated in the construction of the neighbourly house, i.e., the elderly's home. During the reporting period, 15 enterprises of the Company provided geared and targeted support for 15 villages in weak economic conditions with aiding donations amounting to RMB0.7 million. The Company also proactively responded to the "warm the needy with sincere care" special fund raising event hosted in Zhuanghang Town and raised aiding funds of RMB390,000 in succession in the reporting period and RMB1.09 million in aggregate up to date.