



CORPORATE SOCIAL  
RESPONSIBILITY REPORT  
**2016**



**株洲中车时代电气股份有限公司**  
**ZHUZHOU CRRC TIMES ELECTRIC CO., LTD.**

*(a joint stock company incorporated in the People's Republic of China with limited liability)*

*(Stock Code: 3898)*

On 28 March 2016, the Company announced the change of name from “Zhuzhou CSR Times Electric Co., Ltd. (株洲南車時代電氣股份有限公司)” to “Zhuzhou CRRC Times Electric Co., Ltd. (株洲中車時代電氣股份有限公司)”.

For better expression and reading, Zhuzhou CRRC Times Electric Co., Ltd. is represented as “CRRC Times Electric”, “the Company” or “we” in this report.

The report is prepared with references to Environmental, Social and Governance Reporting Guide issued by The Stock Exchange of Hong Kong Limited, Guideline on Sustainable Development Report of the Global Reporting Initiative (GRI), Guideline on Social Responsibilities of Industries (GSRI-China) and “the Ten Principles” of the UN Global Compact, and based on the actual situation of CRRC Times Electric.

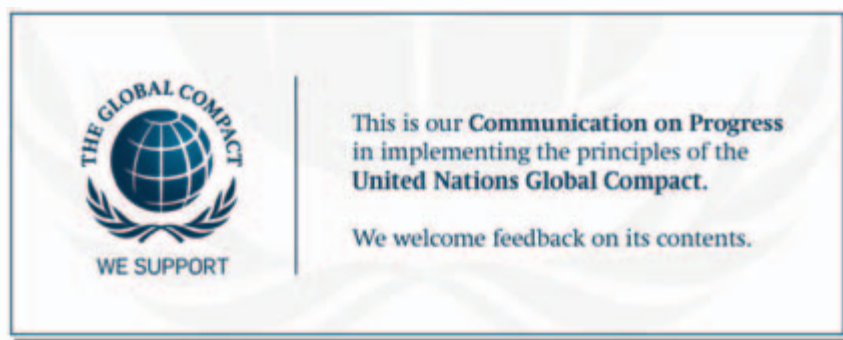
Unless otherwise specified, the report covers the time from 1 January 2016 to 31 December 2016. The currency used herein is RMB. The report covers the Company’s headquarter and share-holding subsidiaries but not including joint stock companies, using the same scope, boundary and calculation methods as the previous reports.

This report is a faithful reflection of the Company’s active fulfillment of its economic, environmental and social responsibilities and its full implementation of the sustainable development strategy. It is a report of full disclosure of the Company’s management performance related to stakeholders’ concerns and expectations. All the information and data therein are collected from the Company’s official documents, statistical reports and sustainable development practices of functional departments and subordinate units.

This report is published in both Chinese and English versions. If there are discrepancies between the two versions, the Chinese version shall prevail.

Headquarter Address: Shidai Road, Zhuzhou City, Hunan Province, China.

Electronic Version Available at: [www.tec.crrczic.cc](http://www.tec.crrczic.cc)



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# Speech by the General Manager

## Upholding the philosophy of integrity, trustworthy and due-diligence, improving quality and innovation for healthy development



During the fifth plenary session of the 18th CPC Central Committee, China's development goals for the "13th Five-year" period were set up along with its development philosophy of innovation, coordination, green, openness and sharing. The "tri-networks integration" of trunk railway, intercity rail and urban transit will bring us new growth opportunities. Globally, "One Belt One Road" Initiative has built us a clear strategic map and the "high-speed rail diplomacy" has created premium business conditions for us, which facilitated an overwhelming "Go Global" strategy for the high-end equipment industry. Meanwhile, with the support of CRRC Group, taking full benefit from the enormous advantage of CRRC brand and adhering to "propel the sustainable development for green transport and energy so as to provide safe and convenient core momentum for the society", we strive to develop CRRC Times Electric as the world's major and leading multinational company as well as the "preferred supplier of complete solution for rolling stock electrical system in the world".

2016 is the first year of the 13th Five-Year Plan, and marks the 10th anniversary of the listing of the Company. In the recent years, China's economy has stepped into the "new normal", and the overall development has been stabilizing and slowing down. The Company proactively responded to development trend, complied with the requirements of the board, promoted the success culture, implemented the strategic principles of "informationization and industrialization", focused on the three major themes, namely "Consolidation of Existing Leading Industries, Cultivation of Emerging and Growing Industries, Development of Cross-Country Operation Platforms" and strengthened the five system practices, creating a good development condition.

Cherishing our heritage, we create and share the development value with gratitude. The Company is and will be committed to sustainable development, actively fulfills the responsibilities as a public citizen. The Company strives to keep balance among industry development, environmental protection, social and industrial upgrade, and shares enterprise development outcome with the state, the society, shareholders, customers and staff, benefitting all stakeholders of the enterprise.

## Speech by the General Manager

Under the Chinese macro political and economic background, the Company will firmly pursue its mission and responsibilities on development, and focus on four major core concepts, namely “integrity and due-diligence, quality-driven, value creation and business achievement” so as to vigorously inherit and promote the quality traditions and shape our common values, standardize governance structure of the legal person and maintain harmonious investor relationship. As such, with focused efforts in business development and standardized systems, the Company ensures that the enterprise operates under the principles of integrity, prudence and trustworthy.

The Company thinks much of and shoulders social responsibilities in all aspects, including how to standardize enterprise governance, cooperate with customers and suppliers, and prevent enterprise operational risk. By setting up a complete energy management system, the Company strives to carry out the campaign of energy saving and emission reduction as a response to improvement of environment and climate. By designing and manufacturing energy-saving products, the Company can improve the efficiency of energy use and mitigate the adverse impact on the climate and environment. More, the Company will promote the upgrade of the industry technology and know-how and the development of local economy by way of technological innovation to provide the safest, most comfortable and convenient environmental transport means for society and people.

The Company fulfills its social responsibilities and regularly organizes community activities to interact with stakeholders and actively participates in and undertakes social charities. The Company endeavors to enhance the research and development of semiconductor and convertor technology through collaboration with local and overseas renowned universities. In addition, the Company pays attention to the occupational health and safety of the staff and arranges regular physical check-up. All these initiatives demonstrate the value delivered by CSR Times Electric which pursues highly efficient development and the operation under the principles of integrity and trustworthy.

The sustainable development of the Company depends on the operation under the principles of integrity and trustworthy. CRRC Times Electric always upholds the operating philosophy of integrity, trustworthy and due-diligence, and improves the Company's brand and market position by quality-driven products. Adhering to the concept of mutual benefits and sharing, the Company strives to explore new growth points in various areas within the industrial chain and creates and adds value in all domains of resources. I believe that with our relentless efforts, we will be able to foster reasonable profits for our shareholders, provide quality products and services for customers, seek more benefits and happiness for our staff and deliver greater value for industrial upgrade and social development to facilitate sustainable operation to be a new and normal practice.

Executive Director and General Manager of Zhuzhou CRRC Times Electric Co., Ltd.

Liu Ke'an



# Part I Company Profile and Governance

## I. Company Profile

### 1. Introduction

Zhuzhou CRRC Times Electric Co., Ltd. was established jointly by five units in 2005, including CRRC Zhuzhou Institute Co., Ltd. (formerly known as CSR Zhuzhou Electric Locomotive Research Institute Co., Ltd.). On 20 December 2006, CRRC Times Electric's H shares were listed on the H shares of Hong Kong Stock Exchange (stock code: 03898. HK).

The Company is in a leading position in the industry by virtue of its powerful overall strength and mainly engages in the research and development, manufacture and sale of locomotive train power converters, control systems, urban railway train electrical systems and other train-borne electrical systems, as well as engaged in the research, development, manufacture and sale of electric components for the railway industry, urban railway industry and non-railway purposes.

Through years of development, the Company has already equipped with strong and independent research and development and technological innovation ability. It has not only mastered the electric traction drive and network control key core technology which is honored as the "heart" and "brain" of trains, but also built mature and independent innovation and research and development platform based on electric traction drive system field. In addition, it has also built domestic first-class comprehensive detection test system, achieved organic combination with modernized industrial manufacturing bases of a total area of approximately 400,000 sq.m. of the Company, and become the Company's most representative image "business card".

Poised for new breakthrough via innovative development. The Company will adhere to the development strategy of "concentric diversification", extend the development path from core technology to related industries, continuously consolidate the leading position in the rail transit industry, make efforts to enhance the professional new image in electric drive and control system fields, and strive to become an international company with modern management concept, advanced corporate culture, strong core competitiveness, high performance, and great fulfillment of social responsibility.

## Part I Company Profile and Governance

### 2. The Main Economic Performance of the Company in 2016

In 2016, the Company's main business performance indicators remained solid as shown below:

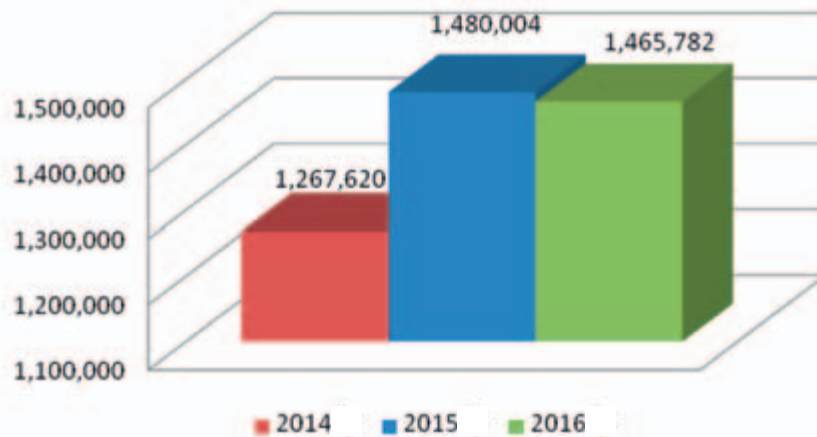
**Table of Main Business Performance Indicators**

Unit: RMB ten thousand

Year Indicators	2014	2015 (restated)	2016
Operating income	1,267,620	1,480,004	<b>1,465,782</b>
Total assets	1,692,490	2,293,218	<b>2,372,356</b>
Total profits	275,491	345,649	<b>333,575</b>
Total tax payment	144,834	166,445	<b>154,042</b>
Operating costs	787,641	913,841	<b>906,228</b>
Market value of the Company's share capital	4,196,184	4,436,589	<b>4,137,510</b>
Revenue distribution	47,019	52,896	<b>52,896</b>

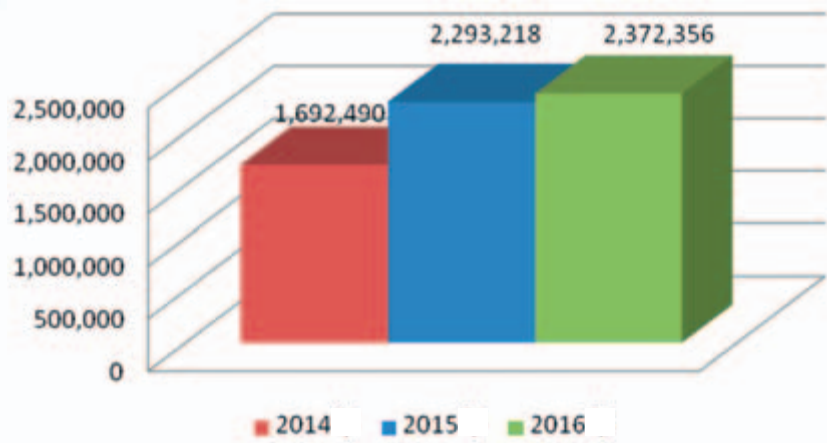
- Note: The revenue distribution in 2016 shall be subject to the approval of the general meeting of shareholders.

**Operating income**

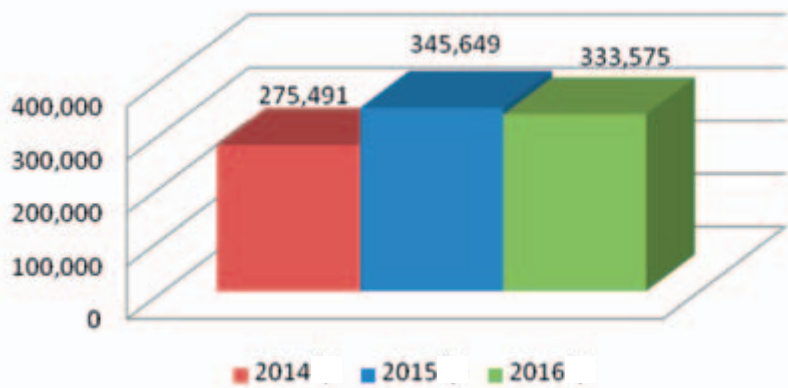


# Part I Company Profile and Governance

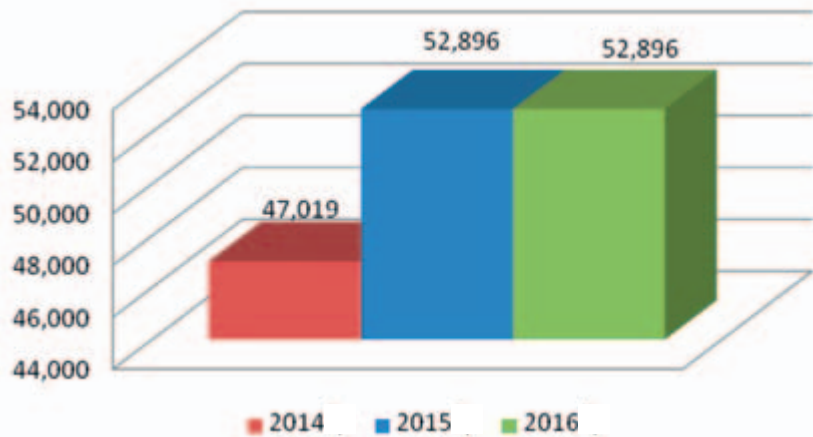
Total assets



Total profits

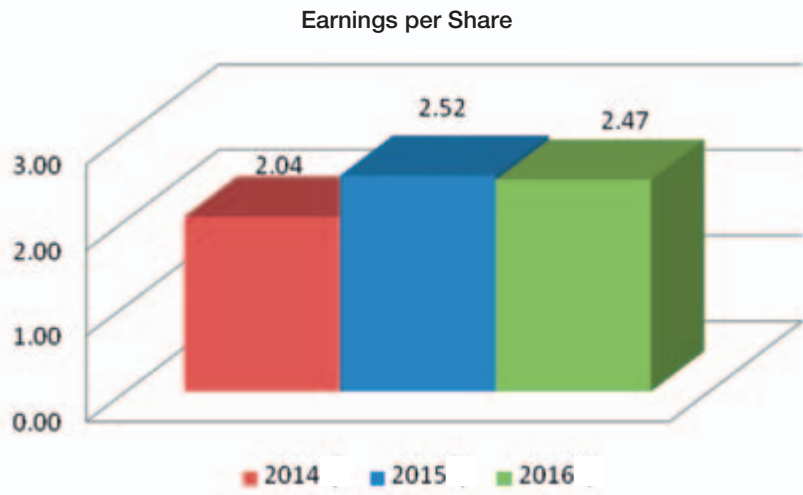


Revenue distribution



## Part I Company Profile and Governance

The earnings per share of the Company in the recent three years showed steady growth. From 2014 to 2016, it achieved earnings per share of RMB2.04, RMB2.52 and RMB2.47, respectively.



– Sub-product business performance

In 2016, the Company achieved an operating income of RMB14.658 billion, including RMB1.925 billion from traction converters, auxiliary power supply equipment and control systems for locomotives, RMB5.446 billion from traction converters, auxiliary power supply equipment and control systems for EMUs, and RMB2.584 billion from traction converters, auxiliary power supply equipment and control systems for urban transit trains.

### Operating Income from Major Products in the Previous Years (Unit: RMB million)

Indicators	2014	2015 (restated)	2016
Traction Converters, Auxiliary Power Supply Equipment and Control Systems for Locomotives	3,704	3,458	1,925
Traction Converters, Auxiliary Power Supply Equipment and Control Systems for EMUs	4,759	4,951	5,446
Traction Converters, Auxiliary Power Supply Equipment and Control Systems for Urban Rail Vehicles	1,208	1,873	2,584
Railway Maintenance Vehicles Related Products	1,149	1,495	1,782
Signal & Communication Products	575	561	536
Key Electric Part and Component Products	631	645	810
Marine Engineering Products and Other Products	650	1,816	1,575
Total Operating Income	12,676	14,800	14,658

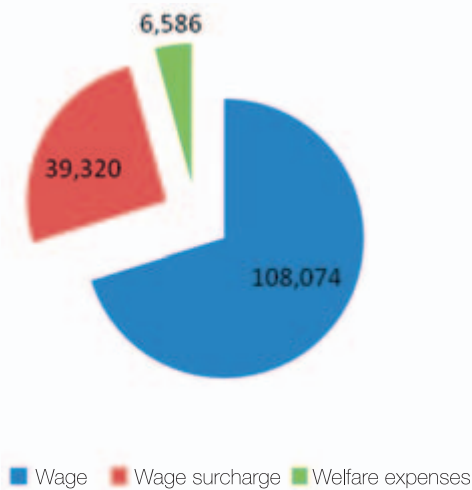
## Part I Company Profile and Governance

- Significant financial support from the government

During 2014 to 2016, the Company has assumed many major scientific and technological projects of various countries, the Ministry of Railways and Hunan Province. It accumulatively obtained funds of RMB82.50 million allocated by government scientific and technological projects in 2014; it accumulatively obtained funds of RMB67.59 million allocated by government scientific and technological projects in 2015; it accumulatively obtained funds of RMB53.32 million allocated by government scientific and technological projects in 2016.

- Employees' total remuneration and classification

In 2016, the total remuneration of employees of the Company was RMB1,539.80 million, including wages of RMB1,080.74 million, wage surcharges of RMB393.20 million and welfare expenses of RMB65.86 million.



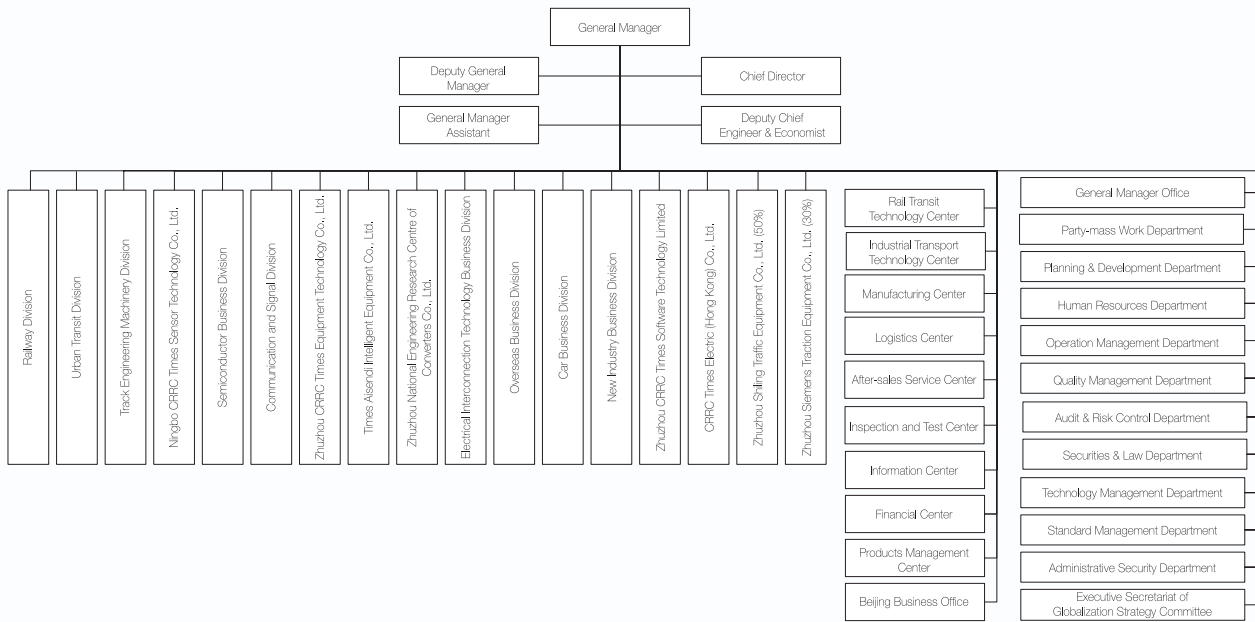


## II. Corporate Governance

### 1. Corporate Governance Mechanism

#### 1.1 Corporate Organizational Structure

Organizational chart of Zhuzhou CRRC Times Electric Co., Ltd.



#### 1.2 Company's Governance System

- Board of Directors

As at the approval date of this report, the board of directors (the "Board") of the Company is comprised of 9 directors, each with different industry backgrounds and expertise. The Board fully represents the interests of shareholders and is accountable to the general meeting. It formulates the Company's development strategy and monitors the implementation of management and finance within the terms of reference as required in the Articles of Association and in accordance with the procedures set out in the Rules of Procedures of the Board, and takes long-term performance and returns as its priority. Five specific committees, namely strategy committee, audit committee, risk control committee, nomination committee and remuneration committee are established under the Board.

The Company has 4 independent non-executive directors, representing more than one-third of the total number of directors. Independent non-executive directors are of high significance in carrying out works on the improvement in corporate governance and major decisions for the Company, expressing fair and objective advice on major matters of the Company and related transactions, and employing scientific approaches for decision-making of the Board so as to safeguard the interests of the Company and minority shareholders.

The Company held 9 meetings of the Board in 2016.

## Part I Company Profile and Governance

- *Board of Supervisors*

As at the date of this report, the board of supervisors is comprised of 4 supervisors, including 1 independent supervisor, 1 shareholder representative supervisor and 2 staff representative supervisors. In particular, staff representative supervisors were nominated by the Workers' Congress of the Company and elected in the general meeting. The board of supervisors exercises supervision rights independently according to the law to safeguard the legal rights and interests of shareholders, the Company and its employees.

The Company held 2 meetings of the board of supervisors in 2016.

- *The Management*

The senior management of the Company are responsible for executing strategic decisions of the Board and management of daily operations of the Company. Daily supervision and annual assessment of the management are performed by the Board. The positions of Board Chairman and General Manager of the Company are held by different individuals, for which the duties are clearly separated to ensure the independence of decision of the Board and daily management and operation. The Company sets up annual goals for the respective subordinate units by dividing its strategic objectives into years and layers and establishes an objective-based evaluation system for senior management, subsidiaries, business units, the centers and managers of functional units to form a performance-linked incentive and restraint mechanism. Performance remuneration of the management is directly linked with results of appraisal, in the form of annual target responsibility document, for which evaluation indices and methods are identified.

- *Information Disclosure Policy*

In strict compliance with the relevant national laws and regulations as well as the requirements of the Securities and Futures Commission and The Stock Exchange of Hong Kong Limited (the "Hong Kong Stock Exchange"), the Company issues reports and discloses relevant information in a timely, accurate and complete manner to ensure that investors and stakeholders can keep abreast of the Company's operation and management. Besides, the Company has also established dedicated departments, positions and specific mailbox to enhance communication with its investors. The Company strictly follows the confidentiality regulation during information disclosure and there was no significant leakage ahead of schedule and misstatement of information in 2016.

## 2. Risk Management and Internal Control

To ensure the smooth process of the Company's production, operation, and business activities to be in line with the Company's strategic objectives, operational objectives and shareholders' vision and in compliance with the requirements of regulatory institutions, the Company establishes a sound risk and internal control system. According to the requirements of relevant laws and regulations, such as the Company Law, Securities Law, Rules Governing the Listing of Securities on the Stock Exchange of Hong Kong Limited, etc., the Company has established a risk and internal control system with Articles of Association as the general rules, and Rules of Procedures of Board of Directors and Board of Supervisors and working rules of professional committees as the main framework; established an internal control system consisting of systems at three levels, i.e. company governance system, fundamental management system and business management system; adhered to the development strategies of the Company; and formed an all-around risk management system through the comprehensive risk management on the effective implementation of each of the section.

### **2.1 Risk Management and Internal Control Organizational System**

The Board is responsible for the establishment, improvement and effective implementation of risk management and internal control system of the Company. The risk control committee under the Board is responsible for reviewing the Company's risk strategy, risk management and internal control, work report on risk control, internal control procedure, regular assessment of risk management policy, supervision of the implementation of the risk management and internal control system, supervision of the implementation of various rules and regulations and material operational decisions as well as assessment of significant matters. The board of supervisors is responsible for supervising the operation of the Company's risk management and internal control system. The General Manager is responsible for organizing and leading the design, operation and assessment and evaluation of the Company's risk management and internal control system.

The Company establishes a comprehensive risk management system based on risk hierarchy, classifications and centralized management. Five professional risk management groups are established under the risk management committee, namely strategic risk, market and operational risk, financial risk, legal risk and technical risk, and the risk business working group is also established. By defining the terms of reference and duties for risk control committee, professional risk management group and risk business working groups, risk management duties are well in place to ensure the continuity of the Company's comprehensive risk management.

### **2.2 Risk Management System**

The Company has prepared the Internal Control System Compilation covering operation and management of various business activities, issued and implemented Comprehensive Risk Management Measures, Risk Alert Management Measures and Assessment Rules for Comprehensive Risk Management, and formulated Internal Control Manual and Internal Control Evaluation Manual which together form a robust risk management and internal control system.

The Company always regards risk prevention and control as a primary task and aims to refine the governance structure of the Company. With the direction of the Board and senior management, the Company attaches emphasis to the culture development of risk management, pays attention to the control of projects with higher risks, deepens the new risk management model and persists in adding value to the risk management. Emerging as a corporate with a value of over RMB10 billion, comprehensive risk management will gradually become an internal growth driver for its sustainable development and stronger international competitiveness. Since its inception, the Company has not engendered any risks or dangers with adverse effects to the nation and society, nor has it suffered from any loss therefor.

## Part I Company Profile and Governance

### **2.3 Supervision and Improvement**

The Company supervises the risk work plan, risk evaluation, risk alert, implementation of contingency plan, risk information bank management, risk work report and material risk report on day-to-day, specific and regular basis. In addition, the Company also supervises timely rectification of risk incidents and defects identified to form a subsisting supervision mechanism. The Company adopts a closed-loop management of risk incidents by conducting follow-up and examination tasks on risk incidents on a regular basis each year and also supervising and evaluating the implementation of measures against risk incidents for the prior year recorded in the risk information bank and the status-quo of the incidents.

In 2016, the Company continuously deepened the risk management and internal control by adopting a "13th Five-Year Plan" development strategy oriented approach and adhering to the regulations of significant risk prevention and internal control. First, the Company performed an annual risk assessment. It established five professional risk management groups, namely strategic, operational, financial, legal and technical risks, and formed an information bank of risk incidents for 2017 via risk identification and assessment analysis. Second, the Company performed an annual internal control assessment to give a comprehensive view to the effectiveness of the internal control design and operation of the Company, and formed "2016 internal control self-assessment report". Third, Ernst & Young was engaged for internal control auditing, the result of which indicated that no material defect of internal control design or implementation of the Company was discovered. As for the management issues proposed by Ernst & Young, the Company will proactively organize rectifications and achieve closed-loop management for the effective prevention of operational risks.

### **3. Corruption Combat and Advocacy of Integrity**

In 2016, under the stewardship of party and political leaders and under the guidance of high-level party committee and discipline committee, the Company progressed discipline inspection and monitoring in line with the objective of promotion of anti-corruption of the Party and adhered to the combined approach of educating as a deterrent and cultivating the atmosphere of integrity; improving the system quality and supervising the implementation; preventing the occurrence of corruption and combating the corruption when discovered early; and specific monitoring and regular monitoring. The Company also organized and coordinated the finance, audit and fundamental party units for solid and effective implementation of relevant works.

The tasks performed in 2016 were primarily as follows:

#### **3.1 Focus on Building Culture of Integrity, Strengthening the Awareness in Integrity and Creating an atmosphere of Integrity**

In order to further reinforce the establishment of CPC work style and a clean administration, enhance the integrity awareness of all staff, strengthen the implementation of risk prevention and control, and cultivate an atmosphere of integrity for CRRC Times Electric, the discipline inspection and supervision department initiated the establishment of integrity culture during the year based on its working experience in the past year. It carried out anti-corruption campaign by implementing specific monitoring via various integrity risk prevention and control measures; encouraging our staff to learn how to behave with integrity by buying the confession of "Far Away from Corruption" and video about integrity; promoting integrity by making and putting up posters, pictures and slogans about integrity in the offices and aisles and the publicity of the requirements of integrity; and organizing exchange forums and sharing sessions about the establishment of integrity culture. The Company gradually cultivated a culture of integrity via the implementation of the aforesaid four initiatives, guiding our staff to behave with integrity with the corporate culture.

## Part I Company Profile and Governance

### ***3.2 Staying alert all the time and Preventing Crime with Education***

According to the annual schedule, the Company launched deterrent education activities based on business requirements and conducted conversation with 32 new or re-designated cadres before they took office throughout the year; issued the notice of deterrent education and learning, "Warning and lesson we learnt from the case study of producing or marketing counterfeit products", in May requiring the fundamental party units to enhance their awareness of integrity and self-discipline with their own case studies; and liaised with Mr. Xiao, the Director of Crime Prevention Office of Zhuzhou City's Procuratorate, to initiate the deterrent education activities for integrity, with the participation of over 260 cadres and employees holding key positions. In addition, exchange forums and seminars of integrity were organized for leading cadres of certain units and core personnel in the process of regular supervision and special inspection of the discipline inspection and supervision department, to communicate the requirements of integrity and strive to ensure that no significant job-related crime was committed during the year.

### ***3.3 Solid and Effective Promotion of Risk Prevention and Control Measures for Integrity and Implementation of Specific Effectiveness Monitoring***

The specific effectiveness monitoring project for implementing integrity risk prevention and control measures was proposed in March. Researches and visits were carried out by the discipline inspection and supervision department to streamline the key business procedures and defects of prevention and control measures, and the draft of "Self-checking schedule of integrity risk" was sorted out ultimately. It also organized personnel of all relevant departments (units) to initiate specific reviews, adjust the scope and content of self-checking schedule and finalize the final draft to commence self-checking. Upon the initiation of the specific works, the internal risks of each unit were kept track of and risk prevention and control measures were gradually integrated into the procedures and systems, thereby further strengthening the implementation of current risk prevention and control measures.

### ***3.4 Taking the opportunities brought by the CRRC Inspection to Strengthen Internal Management Regulation and Conduct Self-Check with Full Force***

In order to further enhance the internal regulation and management standard of each unit, the Party of CRRC Times Electric attached great importance to and actively organize self-checking of each functional department and business unit leveraging on the inspection of CRRC and in pursuant to the authority and scope of administration. The management of each unit had a more comprehensive understanding of the internal management via the self-checking of internal regulation and management and formulated practicable measures for the issues found in the self-checking, which were beneficial to the subsequent regulation of internal management and risk prevention and control.



## Part I Company Profile and Governance

### ***3.5 Setting Up a Smooth Petition System and Implementing Verification of the Petitions Raised by Whistle Blowing***

The Company makes the telephone number and mail address of its disciplinary inspection and supervisory division available to the public and announces the same during the tendering activities by printing such information on the tendering documents. Verification will be carried out for the concern raised regarding the winner of the tender and reply will be given to them.

### ***3.6 Strengthening the Rotation of Key Positions and Reinforcing Risk Management and Control***

The Company supervised and monitored the rotation of key positions according to the requirements of anti-corruption for the Party.

## III. Important Honors of the Company

No.	Honors
1	The 2nd China Quality Award
2	The Advanced Fundamental Party Units of Central Enterprises for 2016 (SASAC of the State Council)
3	CRRC Times Electric ranked 40th among the Chinese top 100 enterprises in electronic information for 2016
4	Successfully passed the external assessment of integration and standard implementation, and obtained the certification for integration and management system of informatization and industrialization
5	Won the "Outstanding Inverter Company" in the assessment of photovoltaic industry by CREC Solar Energy Cup for 2016
6	The May 4th Red Flag Youth League Committee of Zhuzhou City for 2016
7	2016 Zhuzhou Civilized Youth Team
8	Establishment of Golden Eagle Quality Management Model for Rail Transit Enterprise: The Second Prize for the 23rd National Innovation Achievement in Corporate Management Modernization
9	Establishment of Management System of Integration of Informatization and Industrialization for Large-scale High-end Equipment Manufacturing Enterprise: The First Prize for Innovation Achievement in Corporate Management Modernization in Hunan Province
10	Innovation and Practice of Management Integration for Large-scale Electric Enterprise: The Second Prize for Innovation Achievement in Corporate Management Modernization in Hunan Province
11	Establishment of "Internet+" Overseas Market Development Model for High-end Rail Transit Equipment Enterprise: The Second Prize for Innovation Achievement in Corporate Management Modernization in Hunan Province
12	Establishment of Centralized Energy Management System for Equipment Manufacturing Industrial Zone: The Second Prize for Innovation Achievement in Corporate Management Modernization in Hunan Province
13	Establishment of Financial Informatization System based on the Capability of Value Enhancement: The Second Prize for the 15th National Transportation Innovation Achievement in Corporate Management Modernization
14	Establishment and Management of Information Security System for High-end Rail Transit Equipment Enterprise: The Second Prize for the 15th National Transportation Innovation Achievement in Corporate Management Modernization

## Part I Company Profile and Governance

No.	Honors
15	R&D of Electric System of Double-flow Freight Electric Locomotives in South Africa: The Third Prize for Science and Technology Progress Award in Hunan Province
16	Key Comprehensive Improvement Technology and Application of Balanced Power Supply and of Power Quality: The Third Prize for Science and Technology Progress Award in Hunan Province
17	Key Technology and Application of Subway Traction System: The Second Prize for Science and Technology Progress Award in Hunan Province
18	R&D of Intercity EMU at 200 kilometers per hour: The Special Prize for the Railway Science and Technology Award
19	Research and Application of Technology of High-power AC Drive EMU based on Power Unit: The First Prize of the Railway Science and Technology Award
20	Key Technological Research of Trains with Haulage capacity of 30,000 tons on the Daqin Line – Research of Monitoring Technology for LKJ Type Trains with Haulage capacity of 30,000 tons on the Daqin Line: The Second Prize of the Railway Science and Technology Award
21	Key Technological Research and Engineering Application of High-speed Railway Station Platform Door: The Second Prize of the Railway Science and Technology Award
22	Key Technological Research and Application of High-quality and High-efficiency Power Supply for Electrified Railway: The Second Prize of the Railway Science and Technology Award
23	High-performance Modular Metro Engineering Vehicles: The Second Prize of the Railway Science and Technology Award
24	Key Technological Research and Industrialization Application of Sensors for Rail Transit: The Third Prize for the Science and Technology Award of Intelligent Transportation Systems Association
25	Photovoltaic Direct-drive Centrifuge System with Frequency Conversion: The Second Prize for the Science and Technology Award of Machinery Industry Association

## Part I Company Profile and Governance



### IV. Corporate Value and Stakeholders

#### 1. Corporate Values

**Spirit of enterprise:** Integrity, Dedication, Innovation and Excellence

**Missions:** To propel the sustainable development for green transport and energy so as to provide safe and convenient core momentum for the society

**Vision:** To become a priority-preferred supplier of overall solution for the electrical systems in areas of global transport and energy

**Values:** Never forget where our achievements come from. The interests of shareholders are supreme; user first, the customer's needs are our long-term motivation; people-oriented, each employee will share the success with the Company

#### Strategic Guiding Ideology in 2016:

In adherence to the development strategy of "concentric diversification", the Company enhances the awareness of "customers, costs, innovation, responsibilities" and centers on the industry structure of "basic parts, devices and systems, overall units and engineering", to stabilize the inventory, increase growth points, seek for differentiation and focus on synergy effects, entering a new chapter along with the "13th Five-Year Plan" with its success spirit and outstanding brands.

#### 2. Concerns of Stakeholders

With the core goal of sustainable development, the Company pays close attention to various stakeholders, continuously strengthens exchanges and communication with them, fully understands and collects their requests and makes responses positively with the actual situation of the Company. The Company has always strived to cooperate with stakeholders to create and share value and promote sound and rapid development of the Company.

Stakeholders	Ways of Communication	Requirements & Expectations	Main Indicators
Government	Laws and regulations, release of policies, meetings, theme reports, report forms and visits	Complying with laws and regulations, ensuring tax revenue, providing job opportunities, and developing rail transit equipment industry	Total tax income and new job opportunities created
Customer	Collecting comments, daily liaison and visits by sales representatives	Providing products and services with good quality and competitiveness, and improving them continuously	Customer satisfaction rate and products qualification rate
Investors	Regular report, unscheduled announcement, general meetings and circulars	Continuously enhancing company value, preventing corporate risks and ensuring sustainable development	Profits, return on equity, gearing ratio, owner's equity

## Part I Company Profile and Governance

Stakeholders	Ways of Communication	Requirements & Expectations	Main Indicators
Employees	Proposal of Workers' Congress and staff, employee mark-based reward system, executives meeting day, consultation, democratic assessment, employee exchange forum, etc.	Providing employees with safe, fair and comfortable working environment, more benefits and growth opportunities	Employee satisfaction, loyalty, turnover rate and investment on employee training
Suppliers	Suppliers meeting, negotiations on contracts and agreements, regular visits, tendering meetings and collecting comments	Long-term cooperation for reasonable profits	Project bidding, claim on quality defect from suppliers, etc.
Community	Communications by means of suggestion box and questionnaire surveys, holiday parties, active participation in and support for community activities	Well-organized manufacturing to promote a prosperous and peaceful community with safe and healthy living environment	Investment in community constructions, times of participation in community activities and amount of donations

### 3. Determination of Significant Topics

The Company continued to improve the process for the determination of content for reporting with reference to the requirements of the ESG Guide of the Stock Exchange. The Group enhances the interaction with stakeholders by various means, identifies and determines material issues that concern stakeholders, and eventually determines the extent and scope of disclosure, so as to ensure disclosure of information in a more accurate and comprehensive manner.

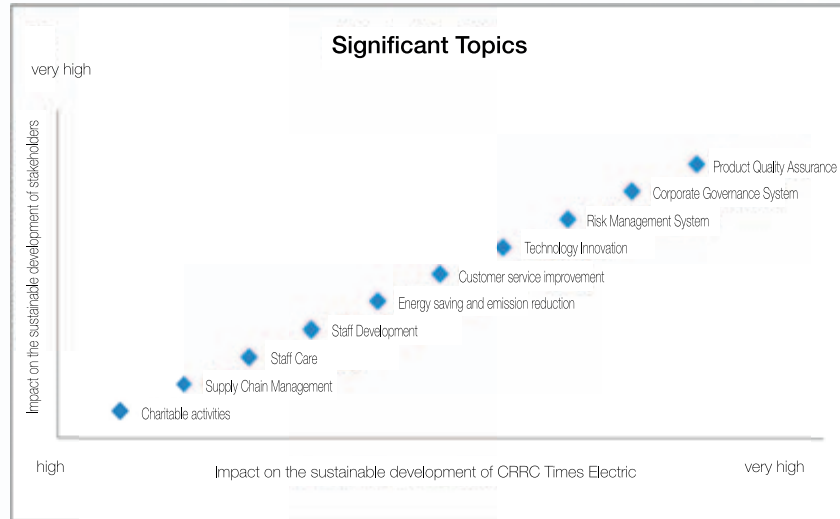


Source of issues	Standards of selection
Guidance on Standards of Social Responsibility Company management and staff	Contribution to sustainable development Issues of general concern to stakeholders Emphasized by the Guidance on Standards of Social Responsibility
Government and investors Suppliers and customers Community	Compliant with the Company's needs of strategic development
Analysis of information from various channels	



## Part I Company Profile and Governance

### Results of determination of significance



## V. Opportunities and Challenges

In 2016, China maintained a steady economic and social development. Its stable GDP growth was in line with the goal of comprehensively building a moderately prosperous society, the requirement of expanding economic output and upgrading structure, as well as, the development pattern and actual environment. China will continue to develop at such pace for a relatively long period of time. With the implementation of the “Go global” strategy for China’s railways and the changes in external environment such as further opening up of domestic rail transit market, the Company will face new challenges amidst opportunities.

- *Opportunities*

For the domestic market, after the rapid development in the recent years, China’s rail transit industry has laid a sound foundation for the establishment of a comprehensive railway transportation network across the country with the development goal of achieving “tri-networks integration” of trunk railway, intercity rail and urban transit in the future, bringing new opportunities for the growth of rail transit equipment market. In addition, leveraging on the urbanization development, the investment demand for domestic rail transit market has continued to rise. According to the National New Urbanization Plan, China’s urbanization will develop rapidly during the “13th Five-Year” period, the urbanization rate will be around 60% by 2020 with an increase in urban population of 100 million. With a view to resolving the issue of city-to-city transportation of large volume of passengers in urban clusters, and in comprehensive consideration of the resource and environmental constraints of urban development in China, a rapid transportation network based on rail transit was formed between the cities of highly populated urban clusters. Hence, the intercity rail will be the focus point for the construction of high-speed railway network during the “13th Five Year” period.

For the international market, being a new international strategic framework for China, “One Belt One Road” has brought many development opportunities to the economy of China. The focus in the near term is to attain the “inter-operability of infrastructure, interconnection of access, convergence of sectors and introduction of resources”, while the long-term goal is to achieve the “interconnection of business and culture, integration of regional economies and mutual prosperity”.

## Part I Company Profile and Governance

With respect to the national policies, the government has speeded up the functional transformation, comprehensively enhanced the reform and devoted efforts in promoting the governance by laws and constitution since the third and the fourth plenum meeting of the 18th CPC Central Committee. Governments at all levels continued to streamline mechanism, delegate power and transform functions, in order to relax control over enterprises and to facilitate business startup, thereby creating a landscape of fair competition. PPP were promoted in the aspect of public products with an aim of stimulating private investment vitality and introducing social capital investment in various fields, so that the market can play a decisive role in resources allocation. The establishment of a multi-tiered capital markets system was strengthened to build a real economy with diversified financing services, utilize foreign investments proactively and effectively and optimize the landscape of foreign investment. Meanwhile, the State Council aggressively promoted the SOE reform, implemented the mixed-ownership scheme across SOEs orderly, and encouraged and regulated the introduction of non-state-owned capital into investment projects. In general, the national policies are in a positive trend in the long run.

- *Challenges*

While the high-speed railway, intercity rail and urban transit is developing vibrantly, we see that the domestic locomotive market demand is declining, which will affect the core business of the Company to a certain extent. Meanwhile, the penetration of foreign and local enterprises with leading positions will create great pressure on the market competition and price of products.

- *Our Solutions*

Facing the sophisticated external environment, the Company will actively seize the opportunities and respond to challenges, firmly implement the strategy of “Highly Efficient Organization and Globalized Operation” and promote the diversified development of the industry to consolidate our own strength and enhance our core competitiveness. Meanwhile, leveraging the advantage in its comprehensive strength, the Company will actively participate in the competition during globalization and expand its business into the relevant sectors.

- To establish a platform for the repair and maintenance industry to fully explore the growth potential of rail transit segment; to effectively capitalize on the synergy with joint venture companies; to enhance corresponding product development across various platforms; to conduct overhaul and repair and maintenance business and practically promote the change of business model from product-oriented to “product plus service”-oriented.
- To enhance the ability in internationalization, change the business mode into globalization operation; strictly follow the multinational business strategy of CRRC, strengthen the layout of its overseas marketing network, enhance the ability in localized operation; to upgrade its proprietary brand image through development of certain demonstration projects overseas; To bring our oversea subsidiaries into full play and integrate global resources for business expansion, so as to enhance its multinational operational index.
- To proactively track down and response to the new business model, collaborate with various parties and gradually improve the professional team, operating mechanism, qualification and experiences in respect of general contracting of electro-mechanical services, so that the Company will be the model among suppliers of general contracting.
- To further promote and optimize the system, set up product management center, clearly define the major units accountable for the products, and ensure that products meeting market demands with low cost and high quality are offered rapidly and accurately.

# Part II Technological Innovation and Product Liability

## I. Technological Innovation

The Company's research and development ("R&D") management always adheres to the tenets of serving technological innovation and launches various activities to enhance management performance, including excellent management and refined management. These activities not only increase the intensity, breadth and depth of scientific research project management, qualification and result management, external scientific technology reporting management as well as management of expertise and engineering development and standardization, but also further increase the effect of cost reduction and efficiency enhancement, so as to revise and optimize the related management procedures and systems and thus enhance the working efficiency and quality, thereby safeguarding the orderly development of daily work and steady advancement of various key works at all levels.

### 1. Introduction to Technical Research and Development

#### 1.1 R&D Management Mechanism

The Company attaches great importance to the establishment and improvement of R&D management mechanism. The Company has established a Technical Committee, which comprises the deputy general manager in charge of technology, deputy general engineer, chief expert, and technical supervisors in all business units (departments). The Technical Committee provides support for the decision making in relation to scientific research technology of the Company and thus improves the Company's organizational structure for technology management (see the following chart – R&D Management Institution). By using the internationally advanced CMMI and other management methods, the Company established Handbook for Integrated Product Development System, improved management regulations such as Completeness of Product Drawing and Design Document, enhanced the management ability over products' lifecycle and solidified such ability to its PLM management platform, and realized and planned for standardized management of processes and assets. The Company also fully implemented project management and budget management for scientific researches, and established a comprehensive set of rules and regulations for project management and budget management – Administrative Measures for Scientific Research Projects, Measures for Assessment and Incentive of Significant Scientific Research Projects and Administrative Measures for Budget of Scientific Research Projects. All processes of projects from proposal, execution to completion were under strict management and control, which has greatly enhanced the quality and efficiency of the completion of these projects.

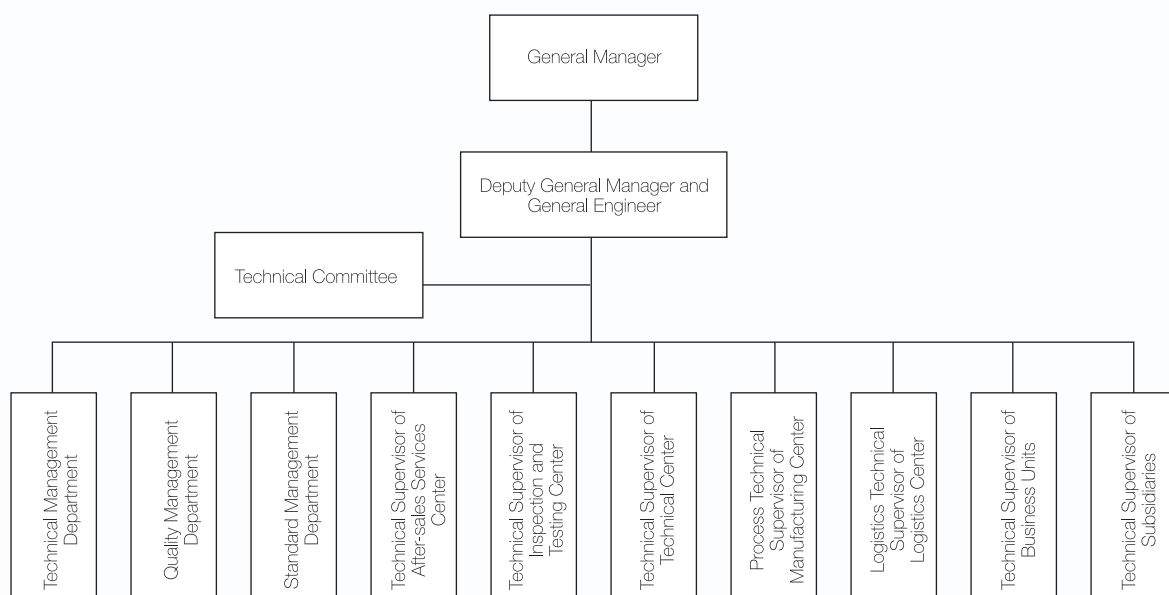


Chart: R&D Management Institution

## Part II Technological Innovation and Product Liability

### **1.2 Investment in Scientific Research**

Investment in technological innovation provides basic guarantee for strengthening the Company's independent innovation ability. The work in this regard adheres to two main concepts of "innovation" and "benefit", aiming to achieve sustainable development of the Company and striving to set another new record in operation results by leveraging its technological R&D. The Company continued to increase its investment in technological innovation, and the investment in scientific research accounted for approximately 8% of the sales amount during the year. In 2016, the Company approved 611 proposals of scientific research projects.

### **1.3 R&D Team and Advantages of Hardware Resources**

The Company's scientific research and technological personnel accounts for over 39% of the total number of employees. On the basis of highly educated talents, a professional research and development team with high qualities and efficiency has been developed through a comprehensive talent training system.

The Company also has strong capabilities in scientific research and experiment, testing and inspection and system production, and owns a number of specialized production bases. Among which, the Company's power semiconductor production base mainly produces bi-polar power rectifiers, thyristors, GTO and IGCT, at the same time the first high-power IGBT packaging manufacturing base is built in China. The inspection and testing system is comprised of over 20 laboratories, including vehicle-mounted electrical systems lab, electrical machinery lab, large-scale vibration testing system lab, electrical equipment reliability and environmental engineering lab, passenger car electrical system lab, large-scale engineering machinery electrical system lab, networking product consistency lab, 3G information technology application lab etc., covering research test, type test and factory test in all fields. Meanwhile, the Company is also an attached unit of the Testing Station of Electric Traction Equipment under Railway Product Quality Supervision Center.

## **2. Technological R&D Results**

### **2.1 Reporting**

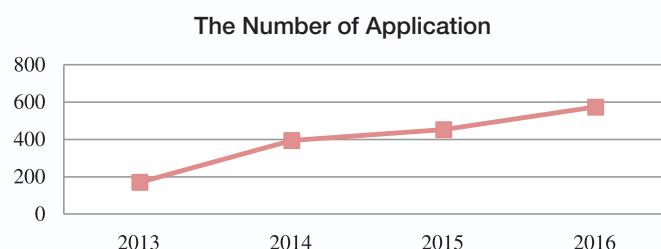
In 2016, 43 external technology projects were reported, including: 15 national key R&D projects, 15 provincial-level and ministerial-level projects, 4 China Railway projects, 1 CRRC major project and 8 CRRC projects. Under the "Advanced Rail Transit Project", the company successfully took the lead in the rail transit system security technology project, involving intensively in the 400 km speed of high EMU projects and key technology in maglev transportation system projects. Meanwhile, with frequent achievements in various areas outside the industry, the Company successfully took the lead in terms of five topics, i.e. strategic advanced electronic materials, smart grid technology and equipment, deep-sea key technologies and equipment, homogenous technology research on national quality basis and application of key projects.

## Part II Technological Innovation and Product Liability

### 2.2 Patents

In 2016, the Company applied for a total of 574 patents, with 263 patents authorized, including 111 invention patents. By the end of 2016, the Company has cumulatively applied for 1,126 patents, 463 of which were invention patents.

Year of Application	Number of Application
2013	171
2014	395
2015	453
2016	574



### 2.3 Awards

During the year, the Company was successfully granted 11 provincial- and ministerial-level or above awards. Among those awards, the Company has been awarded with 3 prizes of Hunan Province Science and Technology Progress Award, 6 prizes of Science and Technology Award issued by China Railway Society, 1 prize of Technology Award issued by China Intelligent Transportation Systems Association and 1 prize of Technology Award issued by Machinery Industry Association. 2 projects have completed evaluation in CRRC technological achievements, and are well-received by international leading entities.

## 3. Management of Significant Projects

In order to ensure the sustainable development of its significant scientific research projects, the Company insisted on the rolling development mechanism of significant projects and continuously injects new ideas and concepts to guarantee the continuous enhancement of technical strength for scientific research. At the beginning of 2016, after several reviews by the experts from the Technical Committee, it was finally determined that 42 scientific research projects with great strategic significance or economic benefits would be added as significant projects, such as 《中國標準動車組第二方案電氣系統研製》. The Company also implemented an assessment and incentive system for significant scientific research projects, effectively pushing forward process control and objective management of significant projects. At the same time, the Company strictly executed weekly reporting, monthly reporting and monthly regular meeting system, thus ensuring realization of annual objectives of 94 significant projects under research in 2016. Through strict process control, the general progress of projects was well under control; of which 42 projects were completed, with a planned completion ratio of 100% for all projects.



## Part II Technological Innovation and Product Liability

### 4. Innovation Influence

The Company's standardization work facilitates the development of rail transit sector in China, strengthens China's voice and influence in international rail transit sector and enhances the international position of China's high-end rail transit equipment products, thereby providing strong support to the "Go Global" strategy of highspeed railway of China. In 2016, by utilizing the IEC/TC9 international standard work platform, the Company actively participated in the international standardization activities, presided over establishment of 6 international standards: Vehicle-mounted Video Surveillance System, Power Connector for Locomotive Vehicle, Rules for Wiring of Locomotive Vehicle etc.; participated in the formulation of 26 international standardization, among which the Company initiated the drafting of IEC/TS 62580-2 "Part 2 of Multimedia and Telecommunication Systems for Rail Transit: CCTV/Video Surveillance Service", IEC 62847 "Basic Requirements and Test Methods for Power Connector for Rail Transit and Locomotive Vehicle" and IEC 62848-1 "Part 1 of DC Lighting Arrester Ground Device and Voltage Limiting Device for Rail Transit: Metal Oxide Lighting Arrester" that was officially promulgated, marking the fact that the Company has once again reached a new level in terms of leading international standards. Until now, the Company has been cumulatively responsible for 14 international standard working group of IEC/TC9, presided over establishment of and promulgated up to 8 international standards. In addition, the Company has organized and held the 56th annual meeting of IEC/TC9, organized the first forum on international standard technology, carried out the exchanges between Sino-French, Sino-Italian international standardization, consolidated the engagement with other professional standard committees under IEC, UIC, French Ministry of Railway Standardization, Italian Electrotechnical Commission and ISO/TC269 and constantly renewed the platform for the work of international standardization. The Company's international status and discourse power of rail transit has been enhanced in various aspects, which drives the industrial development of CRRC and boosts the expansion of our products beyond China.

By utilizing the national standard work platform of the National Technical Committee 278 on Electric Equipment and Systems for Railways of Standardization Administration of China, the Company simultaneously commenced 36 national standards revision projects and totally completed 13 drafts for approval, 2 drafts for review and 21 working group proposals in 2016, with the technical standard system for electric traction equipment and system as the basis. By utilizing the standard work platform of rail industry standards and traction electrical equipment technology, the Company simultaneously commenced 11 industry standard projects and totally completed 6 drafts for approval and 3 drafts for review during 2016. At the same time, the Company also actively responds to the national principle and policy of deepening the reform of standardization work. It undertook the first national project of trial unit for standardization - "Trial Unit for Standardization of the Industry of Rail Transit Equipment Manufacturing", the construction project of China National Information Technology Standardization - "National Technology Standardization for Innovation Base (Chang-Zhu-Tan)" and the key project of NQI - "Applicable Technology Research for the Operation of High-speed Trains" etc., which supported the standardization in the form of research topics and accordingly expedited the progress of amendments of key standard systems and standard innovation efforts. In 2016, the China National Institute of Standardization issued the 2016 Report on General Information of Drafting Entities of National Standards (Index of Contribution to Research and Formulation of National Standards) (《2016國家標準起草單位大資料報告 (國家標準研製貢獻指數)》), and the Company was ranked the ninth place among all enterprises in China.

## Part II Technological Innovation and Product Liability

In 2016, the application of the Company's technology projects has achieved outstanding performance again, being accredited as the national enterprise technology center. The CRRC intelligent sensor technology center was settled in Ningbo Times. Standardization management and technology reporting work is progressing in full swing. Various models of dynamic EMUs has completed R&D and loading test. China's standard EMUs with the title of "blue dolphin" has completed assessment, breaking a new record of 420 km speed in the Zhengzhou-Xuzhou line. The first low-floor electrical traction system was successfully delivered. The low-speed magnetic suspension system was officially put into operation in Changsha. The integrated energy-saving rate of China's first permanent magnet subway is up to 30%, arousing massive concern within and outside the industry. Bulk loading has been achieved without speed sensor technology and high frequency network technology. Double power grinding car with 48 grinding heads passed the assessment test review of China Railway. The new generation of LKJ successfully completed the annual "road test" held by three road bureaus. Its CBTC system has obtained the SIL4 safety certification. The Company has launched the 3300-volt IGBT with flat railings, which will be applied in batches. Modeling and launching of the 500 kilowatts of photovoltaic "Mi Gui" product has been completed.

### II. Product Liability

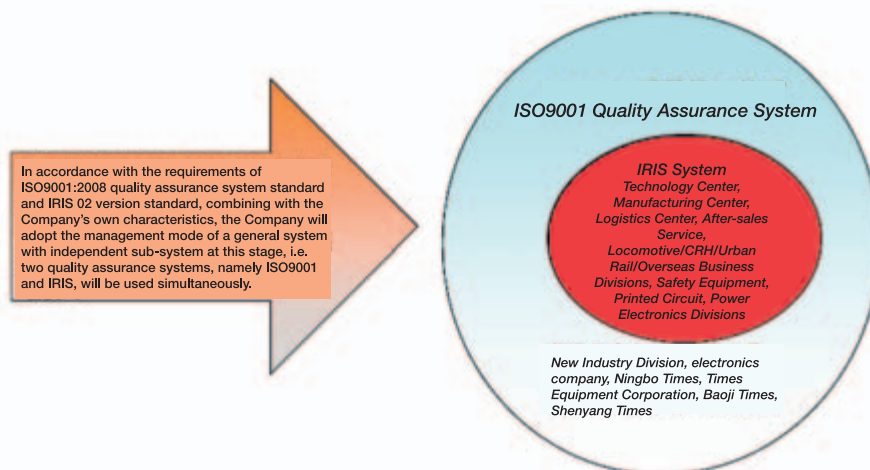
#### 1. Product Quality Management

The Company has always considered product quality as its core value, for it is essential to the very existence of a corporation. Adhering to the policies of **"Optimizing platform for sharing of knowledge, Improving the ability of technological innovation, Focusing on quantitative analysis of processes, Setting up life cycle management, Insisting on enhancement of scientific prevention, Enhancing awareness of quality and safety, Paying attention to details and Pursuing customer satisfaction"** for quality of its product realization process and customer services, the Company continuously carries out researches and fosters on-going improvement to achieve effective control on all aspects and processes from product design to delivery through a series of assurance mechanisms.

##### 1.1 Quality Management System and Certification





The Company has established a complete quality assurance system based on the ISO9001:2008 quality management standard. It has also complied with the requirements of IRIS standard (International Railway Standard) to implement quality control during the production process of its products and the realization process thereof, while keeping suppliers under rigorous management and actively promotes project management and RAMS (reliability, maintainability, availability and safety) management.

*Quality System Management Mode:*



## Part II Technological Innovation and Product Liability

### System Certificates:

Types of system	Certificate	Description
ISO9001:2008		<p>The Company passed the ISO9001:2000 version quality assurance system certification of British Standards Institute Limited (BSI) in 2005 and the 2008 certification (as amended) in November 2009, respectively. In October 2010, TUV Rheinland (Guangdong) Co., Ltd. carried out review on the Company's ISO9001 and the Company passed the review in October 2012. The Company passed the ISO9001 certification of Bureau Veritas Certification (Beijing) Co., Ltd. on 31 December 2014</p>
IRIS 02 (International Railway Industry Standard)		<p>In October 2008, the Company passed the IRIS 01 certification of TUV Rheinland (Guangdong) Co., Ltd., and passed the review in October 2012</p> <p>The Company passed the IRIS certification of Bureau Veritas Certification (Beijing) Co., Ltd. on 28 October 2014</p>
CMMI Level 3		<p>The Company passed CMMI system Level 3 certification in December 2009</p>
EN15085-CL1 (Welding Certification System for the Rail Transit Industry)		<p>The Company passed EN15085-CL4 certification in November 2012</p> <p>The Company passed the EN15085-CL1 certification of Bureau Veritas Certification (Beijing) Co., Ltd. on 5 July 2014</p>

## Part II Technological Innovation and Product Liability

### *Quality Awards:*

First Hunan Governor Quality Award in 2011

Industrial Enterprise Quality Benchmarking Enterprise by Ministry of Industry and Information Technology in 2013

AA Enterprise of Hunan for Industrial Product Quality Classification Regulation in 2013

AAA Enterprise of Hunan for Quality Credit in 2013

Excellent enterprise of Hunan Province quality management group activities for seven consecutive years

National excellent quality management group for seven consecutive years

2nd China Quality Award in 2016

### **1.2 Quality Monitoring Method**

The Company has set up a sound and comprehensive system of quality management and assurance system throughout the product life cycle including marketing, design and development, procurement, manufacturing and product services etc. at a preliminary stage through a number of system certifications and effective monitoring of its processes.

### *Process Monitoring:*

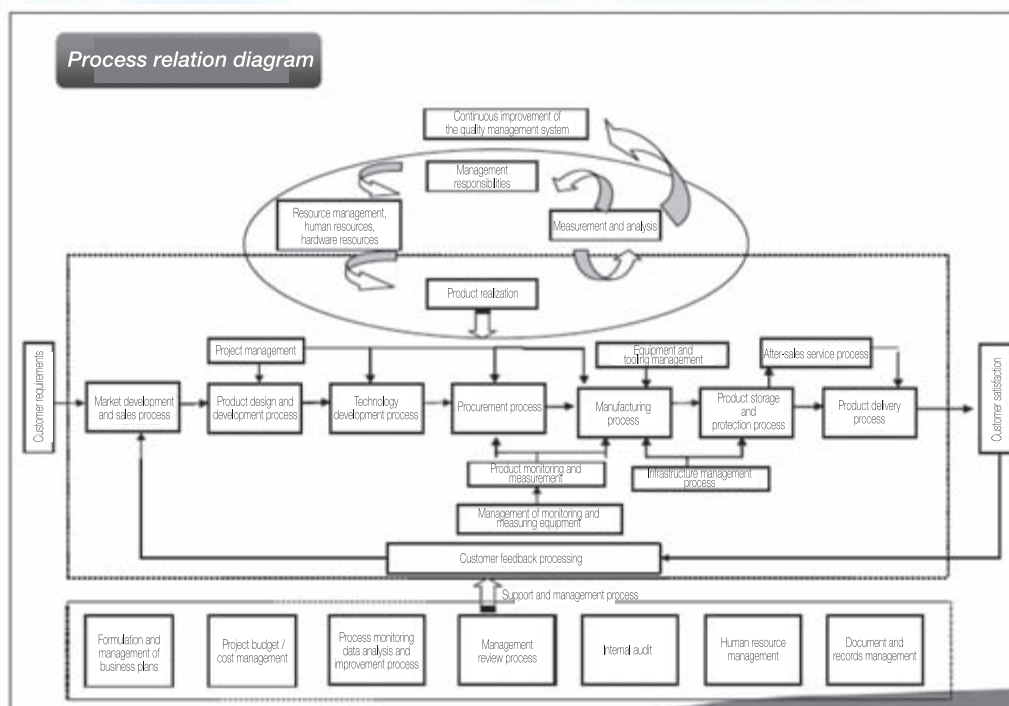
#### **– Quality Indicators for Measurement and Continuous Improvement of System**

The Company has established an indicator measuring system for the entire process, including sales, R&D, manufacturing, logistics, procurement and service, etc., which has enabled the Company to comprehensively define and quantize process quality and carry out measurement and monitoring.

#### **– Internal Audit and Inspection**

The Company has established a multi-dimensional continuous improvement system to ensure quality control through process review, process testing, internal and external audits, regular management review, ad hoc quality inspection, data analysis, process improvement, etc.. With this, the Company can therefore identify opportunities for improvement and request for delegation of responsibilities, implementation of plans as well as tracking and verification for matters which require improvement, with a view to guaranteeing the achievement of the improvement goals and ensure continuous improvement of the whole quality management system.

## Part II Technological Innovation and Product Liability



### – Quality Management of Design and Development Process

Complete Product Development Process System:

The system supports the management and quality control of the entire lifecycle of mechanical products, electric products and software products development. Project development is carried out on a project basis and quality control is carried out throughout the development including design, operation, testing and the achievement of design from user requirements to product model finalization.

Platform-based development for Product and Design:

With continuous accumulation and building up relatively complete databases in terms of standards, guidelines and examination of products, technologies and processes, the Company incorporates the databases into the IT information systems and applies them to quality control of new product designs. The Company has also built up a platform for homogeneous product lines featuring huge pool of data that has been widely used and undergone examination for its reliability so as to improve the quality and reliability of product design.

### – Quality Management for Production and Manufacturing Process

The Company attaches high emphasis on improvement of technique and adheres to the guiding principle of “paying attention to details” and fully implements refined production by adopting an on-site oriented approach. Accordingly, it establishes standardized technique development process, technique management procedures and working standards for each position. Personnel holding relevant certifications are required for key positions.

## Part II Technological Innovation and Product Liability

A complete set of documentations for operation and inspection:

The Company provides detailed and comprehensive guidebooks of operation for the site in which each step of product production technique is prescribed with illustrations. With which, workers at the site can clearly and easily understand each step and avoid faulty operations. Meanwhile, corresponding guidebooks for product inspection, inspection checklists, QC schematic diagrams, etc. are also maintained at the site so that workers can conduct inspection with photos taken for each key process in accordance with these documentations.

Complete Technical Testing System:

The Company's manufacturing bases are equipped with a complete technical testing system including AOI, flying probe test, online test, X-RAY inspection to check the welding quality of circuit boards and high and low voltage lines inspecting device to check the quality and reliability of wiring. A number of technical programs and measures are adopted to check the sealing features of cabinets. The above measures ensure that the whole production process of Harmony locomotives products from a single board to the whole set including cabinet processing is timely and effectively monitored.

Stringent Control over Electronic Components:

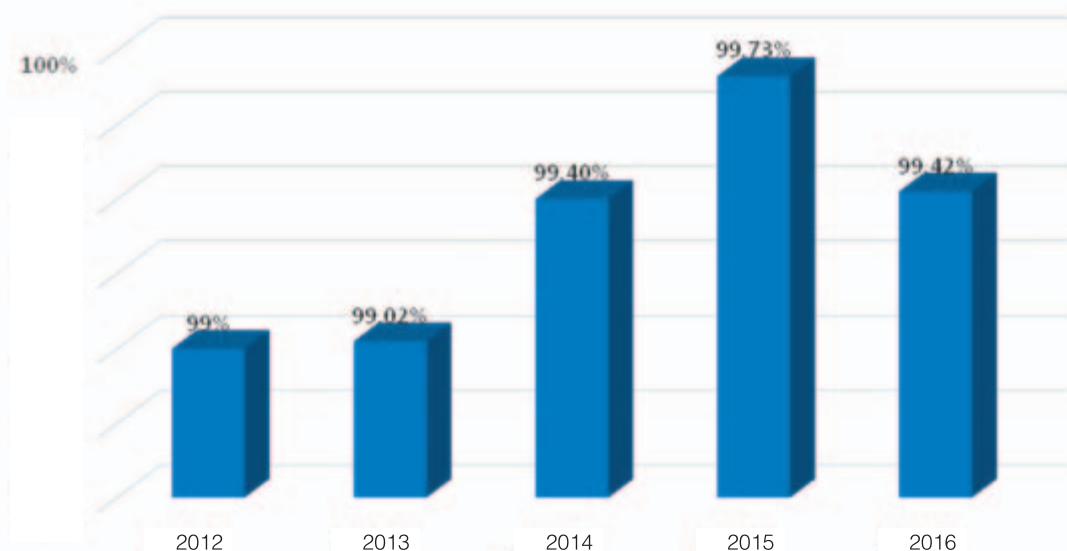
The Company has also established a sound ESD and MSD control system for the manufacturing bases to exercise stringent control over electronic components in terms of workers, machines, materials, methods, environment and measurement, which in turn helps ensure product reliability.

Sound Management System of Outsourcing Suppliers:

The Company has set up an outsourcing control group and adopted an inspection mode pursuant to which on-site inspectors will carry out inspection at the warehouse. In addition, the Company also established a supplier on-site inspection system and held meetings with outsourcing suppliers for the discussion of supplier performance and quality improvement on monthly basis. Therefore, the Company improved the quality management mechanism in terms of development, prototyping, small scale trial production to mass production by outsourcing suppliers.

### – Product Delivery Quality

One Time pass rate for delivery





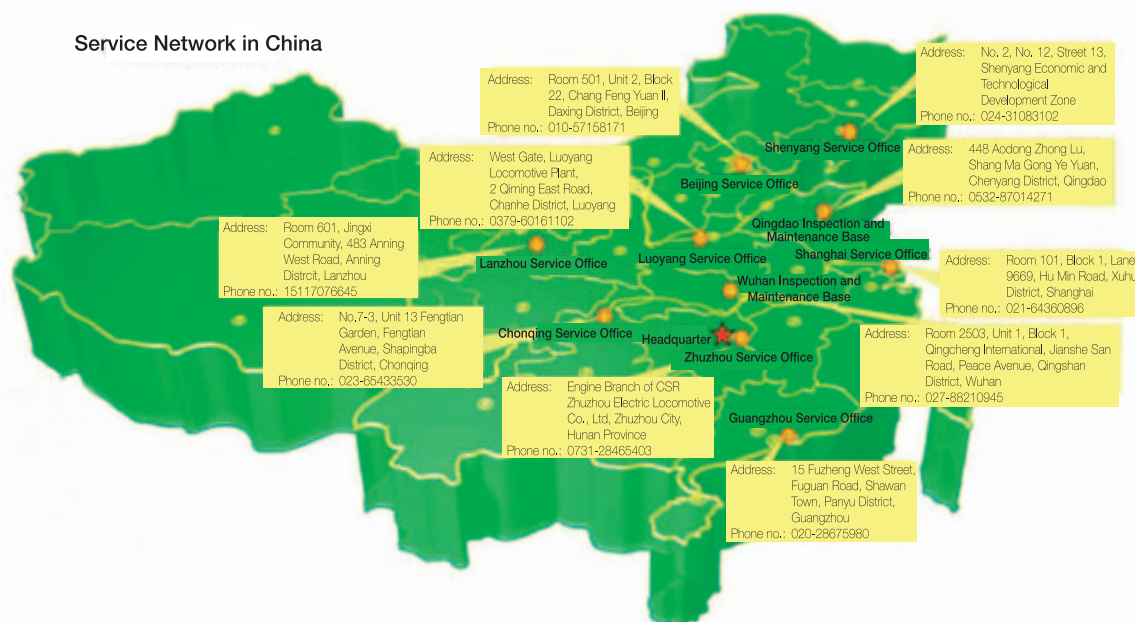
## Part II Technological Innovation and Product Liability

### 2. After-sales Service

#### 2.1 After-sales Service Network

The Company has established a sound after-sales service network with global coverage. It has set up 8 service offices in China, including Beijing, Shanghai, Chongqing, Shenyang, Guangzhou, Luoyang, Lanzhou and Zhuzhou with two repair and maintenance service centers in Qingdao and Wuhan. The Company has more than 200 full-time after-sales service employees with over 140 domestic and overseas users served in total. Further, the Company has also set up the service centers in Australia, Singapore, Brazil, Kazakhstan and Turkmenistan, etc. Upholding the philosophy of “providing fast, effective and satisfactory services”, the Company has launched a service brand, namely “LUREEN”, and offered services without charges within the warranty period and services with charges upon expiry of warranty period as agreed with customers.

The Company has set up a three-level service model in China, with which the service network is linked up by the Company's service headquarters, service office and service station. Should our customers have any requirement, the Company guarantee to promptly respond with staff deployed to the site in 8 hours and solve problems within 24 hours to gain customers' confidence.



#### 2.2 After-sales Service Implementation System

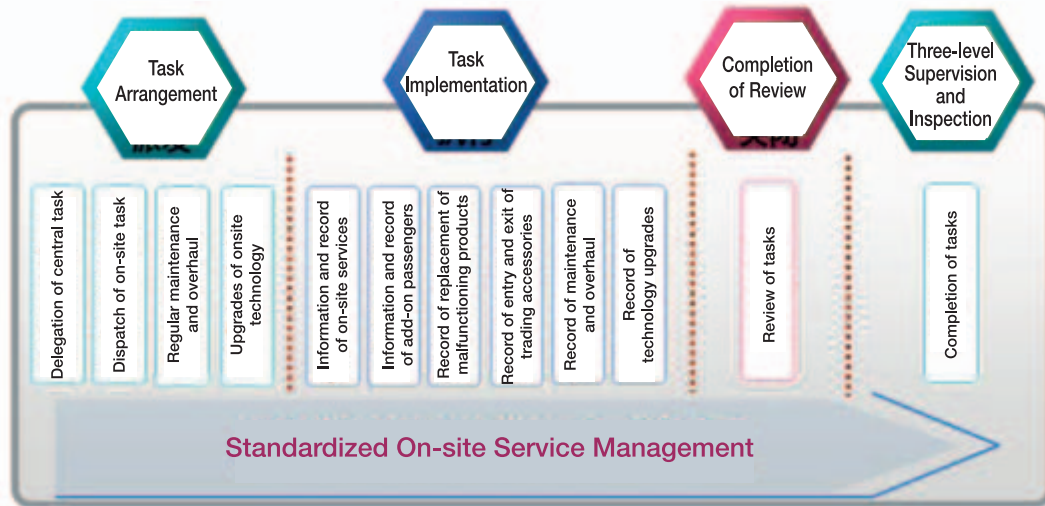
The Company has established an after-sales service information platform to provide technical support and systematic training for customers. Meanwhile, it also serves as an effective platform to standardized and systemized services.

With the after-sales service information platform as our support, we have set up two hotlines: 800 878 8968 and 400 8899 927, and 64 workstations to maintain communication with customers at any time and ensure after-sales services, technical supports, business consultancy, quality feedbacks, complaints, suggestions, and comprehensive information consultation at all times.

With the after-sales service information platform as our support, we have established an onsite product service standard system and a standardized onsite services operation process. We have also issued Standards on on-site services, Standards and Process on Personnel Management, and Standard and Process on On-site maintenance and repair, and developed a work order system.

## Part II Technological Innovation and Product Liability

The Company has set up a complete operation and monitor workflow from customer feedback information to the conclusion of a case, with which, no matter from occurrence of the incident to task assignment, from task implementation to task efficiency assessment, from troubleshooting management to use of parts, and from task completion quality to customers satisfaction, the situation is under an all-round control.



### 2.3 After-Sales Service Team Management

In order to align service staff's skills with product upgrade, the Company adopts "mentoring" system and conducts "apprenticeship" training; organizes preparation of key products troubleshooting manual, which classifies trouble patterns in detail, analyzes and sets forth overhaul procedures in list form so that the troubleshooting process is clear with well-defined position and various case studies for reference. These data can also be used as the troubleshooting guideline for on-site service staff. Meanwhile, the Company has conducted appraisal on the level and qualification of internal service skills with a view to continuously enhance the professional skill level of service staff.

## 3. Customer Satisfaction Survey and Customer Complaints

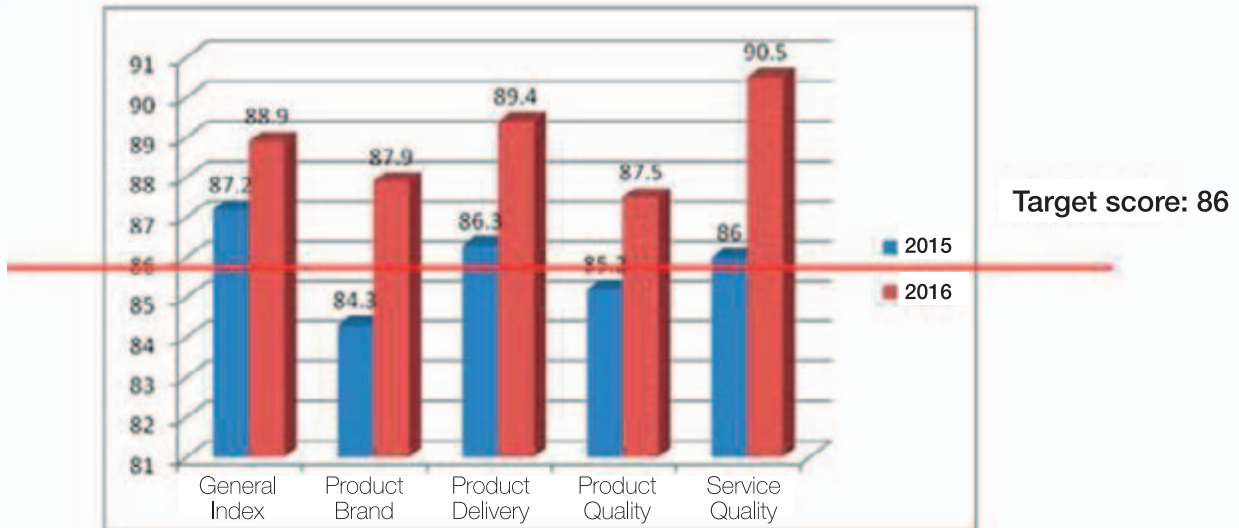
### 3.1 Customer Satisfaction

The Company always takes the continuous improvement of product and service quality and continuous enhancement of customer satisfaction as its goal. Every year, the Company takes many forms to collect customers' opinions and suggestions on our products and services, including questionnaire survey, interview of customers, telephone inquiry and product promotion event, and immediately takes corresponding measures to make improvement.

The general principle for 2016 external customer satisfaction survey of CRRC Times Electric was: **focusing on rail transit products while giving consideration to other traditional products.** Products under this survey mainly include railway transportation electric drive control system, security monitoring devices, rail engineering machinery, etc.; and vehicle types involved in this survey include urban rail transit, harmony type high-power alternative transmission locomotive, high-speed EMUs and other traditional products such as testing equipment. This survey involved 148 users, including 18 subway corporations, 14 locomotive depots, 8 EMU institutes, 9 car depots, 10 main engine plants/overhaul plants, 6 road bureaus, 8 local railway users, 16 track maintenance inspection institutes (machinery division), 22 track maintenance divisions and 37 power supply sections. This survey covered 100% major product types and over 90% of our users. Based on customers' feedback and survey data analysis, the assessment indicators on the Company's general customer satisfaction index, product quality and service quality all scored above 86.

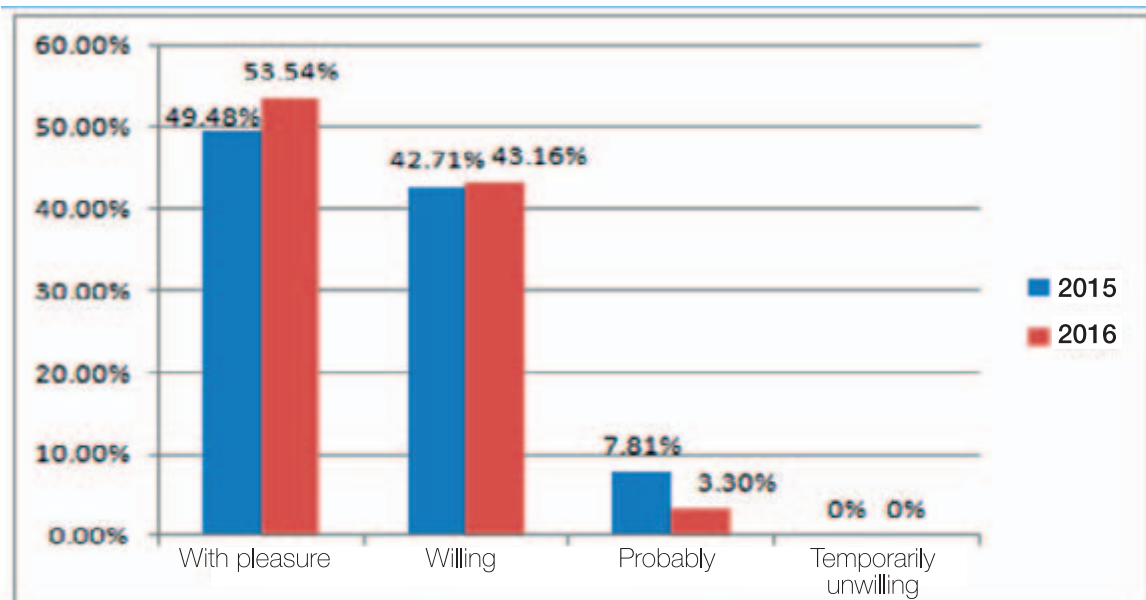
## Part II Technological Innovation and Product Liability

Scores in Customer Satisfaction Survey in Recent Two Years



### 3.2 Customer Loyalty

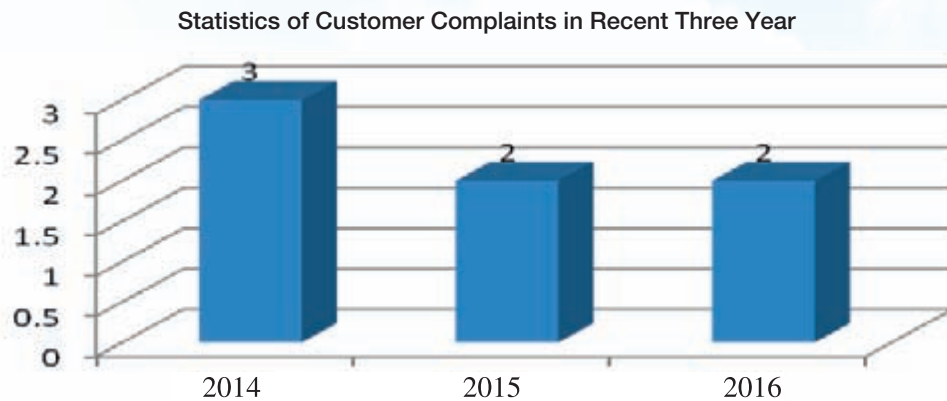
Customer loyalty improved from 92.1% in 2015 to 96.7% in 2016. None of the customers selected “temporarily unwilling” to use the Company’s products.



### 3.3 Customer Complaints

The Company attaches great importance to the settlement of customers’ complaints and establishes a customers’ complaint settlement team led by the quality management department. This team gives fast response to each customer complaint, timely understands customers’ demand, conducts in-depth investigation of and analysis on problems, puts forth effective solutions and improvement methods, eliminates problems from the system operation, and replies to customers in a timely manner to ensure their satisfaction.

## Part II Technological Innovation and Product Liability



### 4. Product Safety

As a large-scale rail transit equipment manufacturing enterprise integrating research and development, production, distribution and sales and a core supplier of components for railway locomotive vehicles, the Company's products are widely used in high-speed trains, and the safety and reliability of its products are therefore directly related to the lives and safety of millions of passengers. Product quality equals to safety, and safety is the life assurance of millions of passengers, which is also the golden rule for enterprise's survival. The Company has always regarded product safety as the core of its product quality work. Based on the technology security policy of **"Complying with railway safety standards to establish product safety concept; Understanding product safety effectiveness to improve safety rules and norms; Producing safe and reliable products to ensure train traffic safety"**, the Company implements strict control measures on various aspects including marketing, design, procurement, production, delivery and after-sales, and resolutely puts an end to product quality and safety problems. With the efforts of all staff, there was no product quality and safety incident in 2016.

#### 4.1 Guarantee of Product Safety (Reliability)

★ **Overall Promotion of Quality Safety Risk Management.** In 2012, the Company established quality safety working team, organized special training and perfected its risk management and control system. The Company formulated and steadily advanced its annual special working plan, completed risk source identification and compiled a list of risk sources. The Company also focused on the promotion of RAMS and implemented quality safety risk management at product design sources.

★ **Deepen the Application of Rail Transit RAMS and LCC.** The implementation of the special project of Rail Transit RAMS and LCC Application has perfected and optimized the RAMS/LCC management procedure. The Company has established the operation instructions and modules for RAMS design, RAMS testing verification, RAMS manufacturing and RAMS maintenance of the pilot projects, and the sample documents were also prepared correspondingly.

★ **Develop Special Work for Technical Research and Management Upgrade of Key Materials.** By making full use of the expert resources and extensively collecting design resources, the Company has developed special work for "five equipment". It has also deeply implemented technical certification and established standard procedures for material technical certification. On the basis of this opportunity, the Company perfected its technical specification, developed technical researches for 6 key materials such as power capacitor; improved all the key procedures of technical certification, strengthened material testing verification, management and control of key technologies and established a complete tracking mechanism from material selection to mass production application. Meanwhile, the Company also enhanced the using conditions, indexes, parameters etc. in the technical specification, and strengthened requirements on material application from design, technologies, testing and quality, etc.

## Part II Technological Innovation and Product Liability

### 4.2 Product Certification

In 2016, the Company has passed the CRCC certification for a total of 13 key categories of railway products:

No.	Types of Product	Model & Quantity	Issuing Agency
1	07 Electronic components for railway vehicles	2	China Railway Test & Certification Centre China Railway Test & Certification Centre
2	07 Electronic components for railway vehicles	2	China Railway Test & Certification Centre China Railway Test & Certification Centre
3	Electric devices for railway EMUs	3	China Railway Test & Certification Centre China Railway Test & Certification Centre China Railway Test & Certification Centre
4	Electric devices for railway EMUs	5	China Railway Test & Certification Centre China Railway Test & Certification Centre China Railway Test & Certification Centre China Railway Test & Certification Centre China Railway Test & Certification Centre
5	Electric devices for railway EMUs	4	China Railway Test & Certification Centre China Railway Test & Certification Centre China Railway Test & Certification Centre China Railway Test & Certification Centre
6	Electric devices for railway EMUs	1	China Railway Test & Certification Centre
7	Electric devices for railway EMUs	4	China Railway Test & Certification Centre China Railway Test & Certification Centre China Railway Test & Certification Centre China Railway Test & Certification Centre
8	Electric devices for railway EMUs	1	China Railway Test & Certification Centre
9	Electric devices for railway EMUs	1	China Railway Test & Certification Centre
10	Electric devices for railway EMUs	1	China Railway Test & Certification Centre
11	Electric devices for railway EMUs	1	China Railway Test & Certification Centre

## Part II Technological Innovation and Product Liability

No.	Types of Product	Model & Quantity	Issuing Agency
12	05 Electric devices for railway locomotives	7	China Railway Test & Certification Centre China Railway Test & Certification Centre China Railway Test & Certification Centre China Railway Test & Certification Centre China Railway Test & Certification Centre China Railway Test & Certification Centre China Railway Test & Certification Centre
13	05 Electric devices for railway locomotives	6	China Railway Test & Certification Centre China Railway Test & Certification Centre China Railway Test & Certification Centre China Railway Test & Certification Centre China Railway Test & Certification Centre China Railway Test & Certification Centre



## Part II Technological Innovation and Product Liability

### 4.3 Improved Test and Verification System

#### ☆ Approval and Authorization

The Company successively invested and constructed testing labs with qualification of national level and provincial level, which are currently used as

- Laboratory for China Metrology Accreditation (CMA)
- Accredited lab of China National Accreditation Service for Conformity Assessment (CNAS)
- Collaborative lab for China Railway Test & Certification Centre (CRCC)
- Certified collaborative lab for TUV Rheinland Group
- Traction and Control of EMU and Locomotive of National Key Lab

#### ☆ Inspection and Testing Capability

##### **RAMS Lab:**

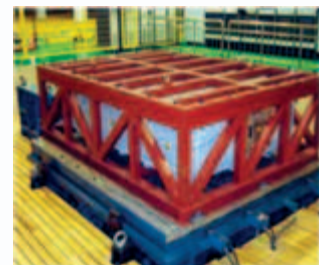
RAMS lab is equipped with testing equipment such as 260 m<sup>3</sup> environment test chamber, 60 m<sup>3</sup> walk-in test chamber for high-low temperature thermal & humidity, rain and dust, 5 m<sup>3</sup> salt spray test chamber, 2.7 m<sup>3</sup> test chamber for rapid temperature variation, thermal shock test chamber, a three-way combined test system (6 m<sup>3</sup> rapid temperature variation + vibration generator with rated thrust of 6t) and vibration test system (20t, 12t, 3t). It may be able to complete large electric railway equipment's compatibility test on climatic environment and mechanical environment according to the required standard.



**Walk-in Rain Test Chamber**



**Walk-in Dust Test Chamber**



**System-level Product Vibration Test**

## Part II Technological Innovation and Product Liability

### ☆ Electronic Device Lab:

Relying on RAMS test and EMC test, the electronic device lab can undertake functional research and qualification test of whole set of electronic devices (such as microcomputer control cabinet, drive control unit, train running monitoring and recording device, electric measuring transducer, electric measuring indicator etc.) for track transit concerning all control, regulation, protection, power supply etc.



High-low Temperature Thermal & Humidity Test Chamber

### Passenger Train Electrical System Laboratory

It uses corresponding power supply, load measurement and control system to build all types of trunk passenger train electrical system, locomotive auxiliary system for CRH etc. to establish 1:1 system test platform.



AC Converter test system



DC Converter test system



Small power supply test system



Module and drive test system

## Part II Technological Innovation and Product Liability

### ☆ EMC Lab:

In EMC lab, the testing frequency of EMI system is up to 18 GHz, and the testing frequency of EMS system is up to 8 GHz, fully covering 3G fields. The testing capability of EMC lab once again plays a leading role in the industry.



# Part III Environmental Protection

## I. Environmental Protection Policy

We pursue the policy of human-concern, continuous improvement, environmental protection, health and safety.

## II. Environmental Protection Performance Management Data

### 1. Discharge of Industrial Solid Waste and Hazardous Waste

Year	Organic waste (tons)	Waste with Copper Content (tons)	Others (tons)	Total (tons)
Hazardous Waste in 2014	37	89	20	146
Hazardous Waste in 2015	60	160	40	260
Hazardous Waste in 2016	72.05	0.74	27.45	100.24

Our Company collects and stores solid wastes separately in the same manner as general industrial solid wastes and hazardous wastes. Our Company will first consider recycling the general industrial solid wastes to the greatest extent. Unrecyclable general industrial solid wastes will then be sent to qualified units for hazard-free disposal; while hazardous wastes will be sent to the relevant units responsible for hazardous waste treatment for disposal. Our Company strictly follows the relevant national laws, regulations and policies in the process of hazardous waste treatment. Hazardous waste transfer sheet will be completed and reported to Zhuzhou Environmental Protection Bureau for record upon transfer. During 2016, the Company generated a total of 100.24 tons of hazardous wastes in the process of production. A qualified treatment rate of 100% was achieved.

### 2. Discharge or Emission of Waste Water and Exhaust Gas in Compliance with Required Standards

Year	Volume of waste water discharged (ten thousand tons)	Volume of waste water treated (ten thousand tons)	Ratio of waste water in compliance with discharge standard
2014	41	41	100%
2015	36	36	100%
2016	16	16	100%

In 2016, the Company strictly followed the relevant national laws and regulations to manage its sewage treatment stations and exhaust gas treatment facilities. All pollutant discharge data, supervised and monitored by monitoring authorities and government environmental protection administration entrusted by the Company, conformed to the primary emission standards. No environmental illegality or environmental pollution incidents were recorded. In 2016, the Company generated approximately 160,000 tons of industrial waste water and the volume of waste water treated by sewage treatment station in compliance with discharge standard amounted to 160,000 tons. A treatment rate of 100% was achieved.

## Part III Environmental Protection

### 3. Quantity of Pollutants Discharged

Category	Pollutants	Quantity	Ratio of
		discharged (tons)	pollutants in compliance with discharge standard
Waste water	COD	24	100%
	Ammonia and nitrogen	1.8	100%
Exhaust gas	Carbon dioxide	6500	/

The waste water generated by the Company is chiefly derived from the production of waste water, all of which were treated with our environmental protection facilities before discharge in compliance with discharge standard. In 2016, the Company discharged 24 tons of COD and 1.8 tons of ammonia and nitrogen respectively. The combustion of natural gas in the natural gas boilers of the Company results in CO<sub>2</sub> emission. In 2016, the Company consumed 3.80 million m<sup>3</sup> of natural gas and generated approximately 6,500 tons of carbon dioxide.

## III. Environmental Management

### 1. Environmental Management System and Certification

The Company obtained the certification of ISO14001 environmental management system as early as in 2006. Through the process control under the environmental management system such as performance monitoring, internal audit, supervision, check, management review, the operational performance of the Company's environmental management system has improved continuously. In October 2016, the Company passed the review of British Standards Institution (BSI) Company for its ISO14001 environmental management system certification.



ISO 14001 Environmental Management System Certificate

### 2. Environmental Protection Products

In the process of production, the Company always advocates the “Green” concept of CRRC’s core brand value and vigorously promotes the use of environmentally-friendly materials and environmentally-friendly technologies so as to create environmentally-friendly green products for the society.

### IV. Environmental Compliance Description

During project construction, the Company actively carried out its construction work by adopting the “Three Simultaneity” policy so as to ensure that the environmental protection facilities and construction projects will be designed, constructed and put into operation at the same time.

During the process of production and operation management, the Company has complied with the relevant national, provincial and municipal environmental protection laws, regulations and statutes, and that of the Ministry of Environmental Protection, and timely obtained, updated and conveyed the relevant environmental protection regulations and standards. The Company conducted its day-to-day internal environmental protection management based on these new regulations and standards. Meanwhile, the Company actively fulfilled its corporate environmental protection obligations and implemented the principles and policies of national energy saving and emission reduction. There was no punishment imposed by the relevant departments due to any violation of environmental regulations.

### V. Energy Saving, Consumption Reduction and Comprehensive Governance

#### 1. Energy Saving and Consumption Reduction

The Company upheld the vision of “Providing the community with safe and convenient essential electric power by promoting sustainable development with green transport and energy”, and put forward its energy management policy of “Maintaining excellence in social responsibility, nurturing first-class employees and serving the world with green products”. Based on the principle of energy saving and consumption reduction and through several initiatives for energy saving in technology, management, products and techniques, the Company actively fulfilled its social responsibility and obligation, which achieved the sustainable development goal of “energy saving and emission reduction” and realized the mutual benefit for the society, economy and environment.

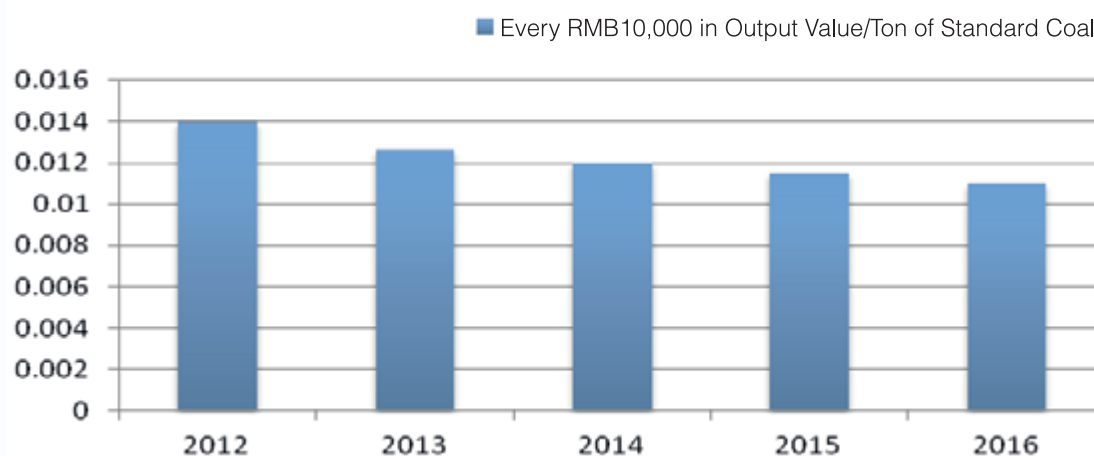
In 2016, the Company placed its energy management emphasis on “Persistently Refining the Development of Energy Management System and Assisting Overseas Companies in Establishing Energy Management System”, with an objective of energy-saving management with efficiency. As such, the control measures of energy management have expanded from energy consumption control and energy efficiency and technological reform to the enhancement of production technologies, energy-saving technology designs, reasonable arrangements during operation and the improvement of staff skills, to accomplish multi-dimensional energy management in respect of human resources, machineries, raw materials, environment and law, and achieve a comprehensive improvement in energy management level while ensuring a year-on-year drop in comprehensive energy consumption.



## Part III Environmental Protection

In 2016, the Company implemented various energy saving policies and realized the comprehensive energy consumption for every RMB10,000 in output value at 0.011 tons of standard coal per RMB10,000, representing a decrease of 4.3% over the previous year.

**Comprehensive Energy Consumption for  
Every RMB10,000 in Output Value**



### ***1.1 Assisting overseas companies in establishing energy management system based on continuous improvement of system construction***

In 2016, the Company laid down its work objectives to persistently refine the development of energy management system and assist overseas companies in trial establishment. In order to ensure that energy management system of Baoji CRRC Times Engineering Machinery Co., Ltd. ("Baoji Times") was passed, the Company has set up a support work plan at the beginning of the year, under which the Company has set up a support working group, which carried out pre-training and diagnosis of Baoji Times, and facilitated the development of progress plan. 12 recommendations are then proposed to Baoji Times, the working group has duplicated the working template of the system developed by the model unit at the headquarters under the Company according to the actual progress of Baoji Times, and carried out a comprehensive organization and review of the management documents, focusing on filling various details in the office, with an emphasis in the introduction of internal benchmark units to provide assistance. Baoji Times has passed the supervision and gained approval from the issuing agency at last, which lay a solid foundation for comprehensive coverage of the Company's energy management system.

### ***1.2 Energy Efficiency and Technological Reform***

1. Carried out technique improvement to enhance the capacity and utilization rate of the heating facilities required during the manufacturing process of the manufacturing center and Baoji Times such as ovens and tempering furnace, with an aim to save energy and curb energy consumption.
2. Carried out comprehensive renovation and implementation of intelligent control on the lighting system in the public area, underwent on-line power monitoring pilot work over the power distribution system at the headquarters, installation of energy consumption measuring instruments for certain major energy-consuming equipment, laying a solid foundation for energy consumption quota and intelligent control of the facilities.

## Part III Environmental Protection

3. Conducted intelligent optimization of the control system of air-conditioning units of the Semi-Conductor Business Department, reducing energy consumption by 26%; comprehensive LED lighting reform was carried out in the office area, significantly reducing electricity consumption; through improvement in operation methods, adjustments to the temperature of exhaust gas and limiting the area available for use, saving 200,000 m<sup>3</sup> of natural gas.



Intelligent optimization of the control system of air-conditioning units

### 1.3 Energy Saving Management

1. Integration of power distribution system: integrate the electrical loading of the Company at headquarters, two 1600KVA transformers and one 500KVA transformer have retired. The excess capacity was given to develop other projects, reducing the basic fees for electricity by RMB 450,000.
2. Optimization of power supply: the air compressors and the supply of purified water were jointly used by the Semi-Conductor Business Department and the manufacturing center to raise the utilization rate of the equipment and avoid duplicate investments.



Joint use of air compressors and the supply of purified water

## Part III Environmental Protection

### 2. Social Management and Comprehensive Governance

In 2016, the Company carried out its annual comprehensive governance works with a focus in “Sound organizational structure, Clearly-defined duties and authorities, Enhanced system development, Regular supervisions, Timely rectification of potential risks, Sufficient prevention and safety measures”, pursuant to the requirements under the Responsibility Commitment of 2016 Social Management and Comprehensive Governance Objectives, the Company realized its overall comprehensive governance goal of “No serious fire accident, No major criminal case related to public order, No major incident concerning foreign affairs” at all levels, the internal safety situation is stable and controllable.

#### ***2.1 Establishment of Multi-Level Organizational Structure to Promote Goal-oriented Accountability System***

In 2016, the Company completed the adjustment to the comprehensive governance structure of the corporate social management, clarified the responsibilities and duties of the comprehensive governance work, issued the 2016 Comprehensive Governance Objectives, and organized the party and administration leaders of all business units to sign the 2016 Responsibility Commitments on Comprehensive Governance, arranged for discussions among the responsible persons and managers for comprehensive governance of all business units, improved the “comprehensive governance assessment rules”, supervised the units and their subordinate units to sign the “Responsibility Statement”, established a multi-level responsibility management system for the social management comprehensive governance of “company – business department (unit) - joint ventures - sections (team)” with a target rate of 100%, continued to improve multi-level comprehensive governance system, and persistently strengthened the safety management, internal control and precaution capabilities of the comprehensive governance system.

#### ***2.2 Continuous Improvement in “Four Protections” Development with Rising Professional Management Standard***

Focusing on the development of “Personnel Protection, Property Protection, Technology Protection and System Protection”, with records room, financial offices, information centers, treasury offices, major events, flammable and explosive toxic chemicals and other critical areas as the core of safety precaution, the Company continuously improved video surveillance, access control, firefighting equipment, safety management rules and regulations, security entrances and exits, security signs, emergency response mechanisms and other comprehensive governance infrastructures, reduced the management loopholes and blind spots, constantly improved self-defense and self-help capability, continued to strengthen the comprehensive governance team, continue to improve “building fire safety regulations, critical areas as the core of safety precaution and problem finding and potential risks” and other regulatory capabilities, laying a solid foundation for achieving the comprehensive governance goals of the year.

### *1. Development of Personnel Protection*

Pursuant to the Company's organizational structure and responsibilities and duties adjustment requirements in 2016, the Company timely provided guidance and services for the establishment of new business unit, overseas joint ventures and other comprehensive governance organizational duties, reorganized the job duties and tasks, to further develop the four-layer comprehensive governance management system of "company – business department- joint ventures – production units" on the basis of three-layer comprehensive governance structure with reference to the current conditions of the Company. More than 20 units of the Responsibility Commitment of Comprehensive Governance Objective have been signed with a completion rate of 100%.

With a focus in establishing "critical minority" of responsible persons of comprehensive governance, person in charge and managers, the Company further clarified the comprehensive management personnel within each units and categorizes the responsibilities and duties by way of company document, while continued to strengthen the responsibilities, status and role of the Times Property Company (the relevant safety management party) in the comprehensive governance management system, and establish a multi-level emergency management and rescue team.

The Company continued to strengthen its efforts in the supervision, guidance and assessment of the safety and security services provided by Times Property Company, the entrusted management party for security and safety management, and continued to enhance employees' awareness of safety issues, sense of responsibility and sense of service, developed standardized "command actions and expressions" and the implementation of relevant policies of the Company. The Company promoted the continuous improvement of the internal security work in an effective and solid manner. At the same time, the Company continued to deepen the certificate training and education for responsible person, person in charge and manager in respect of fire safety, and further unified and enhanced the understanding and sense of responsibility of management from all levels on the importance of comprehensive governance safety management.

### *2. Development of Property Protection*

Building on the basis of personnel protection, the Company further established and improved the development of property protection to achieve all-rounded safety monitoring and control in various aspects and regions. The Company organized and completed the facility supported safety management by integrating door identification, security doors and monitoring cameras. It also provided maintenance and acquired a batch of new standard identification (such as emergency lights, safety exit signs and evacuation signal lights) and 78 gas masks, and timely replaced thousands of fire apparatus. Among which, 5 units/sets of fingerprint access control locks have been installed for labs involving confidential technology. Currently, all financial offices and cashiers' offices of the Company have been installed with security doors. Through these facilities supported safety management of property protection, the Company was able to exercise all-rounded control over its internal security and enhanced its management and control ability.

## Part III Environmental Protection

### *3. Development of Technology Protection*

The Company completed various construction projects during the year, including arrangement for annual maintenance and repair of technology protection facilities, addition of a new infrared alarm system for logistic warehouse, maintenance of facilities in industrial zone, replacement of security cameras, addition of new cameras for after-sales services warehouse, maintenance of facilities for the living community, gradual upgrades of technology protection facilities from analog transmission to digital transmission by the transformation of system. During the year, the Company invested approximately over RMB 1.0 million and meanwhile enhanced the subsequent maintenance management to ensure smooth operation and full exertion of aided management function of technology protection facilities, making the most of its technology protection function.

### *4. Development of System Protection*

With the continuous deepening of reform and development of the Company, in order to enhance comprehensive governance and safety management, the Company has improved series of documents and working procedures regarding management system by focusing on prevention of fire, theft, accident and damage as well as response to emergency situations. These documents and working procedures include Administrative Measures for Social Management and Comprehensive Governance, Administrative Measures for National Security, Administrative Measures for Fire Safety, Administrative Measures for Maintenance of Fire Safety Facilities for Buildings, Management Procedures for Safe Operation with Use of Fire, all of which have enabled the Company to gradually normalize, standardize and formalize its comprehensive governance and safety management and continue to develop on the right track, thereby establishing a new security system for internal safety precaution, management and control, laying the foundation for the sustainable development of the Company in future.

### **2.3 Diligently Fulfill its Responsibility, Minimize Management Loopholes and Hidden Safety Risks**

Pursuant to major work plan, the Company performed monitoring and supervision duties regarding comprehensive governance and safety management diligently. The Company adopted various forms of inspection, such as regular or random inspection, to acknowledge and acquire information regarding the internal comprehensive governance and safety of each unit thoroughly, promptly and accurately. It also continued to implement "Work Mechanism of Monthly Regular Reporting", thereby providing scientific, reasonable and reliable information for the implementation of comprehensive governance work for the year. During the year, the Company completed a total of 13 comprehensive governance safety inspections of various types, identified a total of 76 problems and non-compliance issues, and issued safety inspection report. On this basis, the Company urged all units to make timely rectification within specified timeframe. The current rectification rate for existing problems and issues is 98%.

### **2.4 Enhance management standards by adjusting the training methods**

With an aim to enhance the overall comprehensive governance and management ability, the Company has prepared various general PPT training materials, including Comprehensive Governance and Safety Management, Fire Service Safety Management and National Security Management. By means of professional manager training, on-site safety inspection and utilization of OA network, the Company timely conducted comprehensive governance and safety trainings with friendly reminders on safety management, which has strengthened the accountability and awareness on comprehensive governance of staff from various levels, including responsible persons, persons-in-charge, management staff and employees. Through trainings and simulation drilling exercises, the self-protection and self-help abilities of all staff were enhanced. The Company strived to promote these trainings from key areas to all regions, with an aim to make all staff of the Company acknowledge and keep in mind that everyone should participate in and hold responsibility towards fire services. The Company commenced the establishment of its comprehensive governance fundamental management system, conducted fire prevention and emergency drilling exercises, provided training and education on national safety and other issues, to gradually enhance employees' awareness of safety issues. Accident rate was under effective control.

### **2.5 Special Project**

#### *1. Establishment of "Safe Chinese New Year" and "Safe National Day"*

Before Chinese New Year holiday, the Company fully acquired the detailed information on the person in charge, logistics and roster arrangement of all units during the Chinese New Year holiday from various channels and means, and launched special investigations to formulate a detailed "Safety Management Special Work Plan during the Chinese New Year holiday", which clearly specifies and provides guidance on the duties and responsibilities, work highlights, detailed requirements and emergency response procedures and plans on safety prevention during holidays. Meanwhile, in accordance with the "Responsibility Commitments on Safety Management Objective during Chinese New Year and National Day", the Company stepped up its efforts in process control and implemented rules and policies, including "roster system, zero report system and daily inspection system", and equipped employees with emergency handling knowledge and provided adequate facilities for emergency use to ensure the offices are safe and stable without accidents during the holidays.

#### *2. Constant optimization in emergency management and control system and gradual enhancement in self-defense and self-help capability*

Relying on the establishment of our EHS safety management and control system, the Company studied emergency management knowledge earnestly, closely adhered to the idea of "how to prevent" when implementing emergency management and control, through the formulation and revision of 11 policies including General Plan and Special Plan for Anti-Terrorism, the Company further stipulated the responsibilities and functions of emergency management while refining the organizational structure, it established an emergency response working mechanism that links the emergency scenes, all units, competent management departments, superior authorities/departments and relevant local departments.

The Company continuously enhanced the establishment of company emergency response team. The Company continued to facilitate the emergency response development at entry level with the concept of "pay attention to hazard management and control on the basis of units" and also established and improved the production frontline emergency response working mechanism with a principle of "unit leader in charge, employee participation with workshop (section) interaction", ensuring the management target of "early discovery, prompt handling, small loss". We effectively delivered "early discovery, prompt response, proper handling" during the prevention and rescue work against catastrophic flood disaster on June 15, property damage and casualties were thus minimized.



## Part IV Care for Staff

### I. Our Staff

Staff team is the most valuable wealth of the Company and the foundation for the development of the Company. The Company will employ staff with strict compliance with the laws and will never harm the interests of employees. Currently, all employees of the Company have entered into labor employment contracts with the Company directly or indirectly through labor dispatching companies, with a contract execution rate of 100%. Meanwhile, the Company also pays close attention to the interests of staff and strives to create favorable working environment for them to contribute to the Company and achieve good development. As at 31 December 2016, the Company has a total of 7,569 employees.

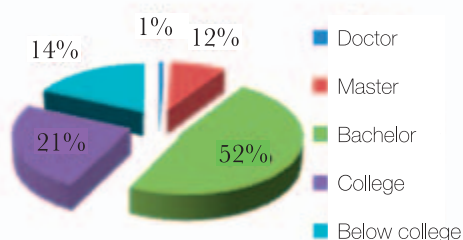
#### 1. Employment Diversity

##### 1.1 Current Condition of Employees

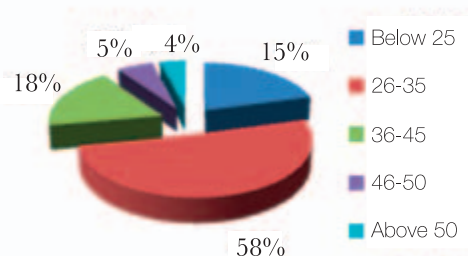
The Company continues to strengthen the optimization and management of human resources and strives to establish a dynamic and competent team with high academic qualifications, young age, advanced techniques and strong professional skills. Currently, the Company has recruited a number of talents possessing core expertise, high-end technique as well as operation and management skills of the industry, which has laid a solid foundation for the Company's sustainable development.

The mobility of staff in the Company is low. Over the last three years, the employee turnover rate was controlled within 5%, and only 2.2% in 2016.

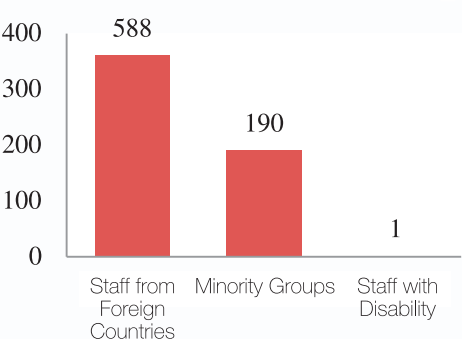
Breakdown of Education Level



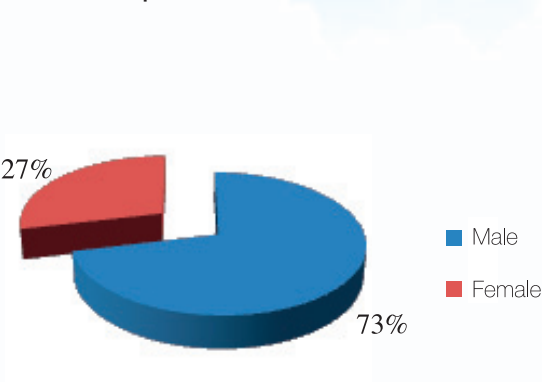
Age Composition



Number of Staff from Foreign Countries,  
Minority Groups or with Disability



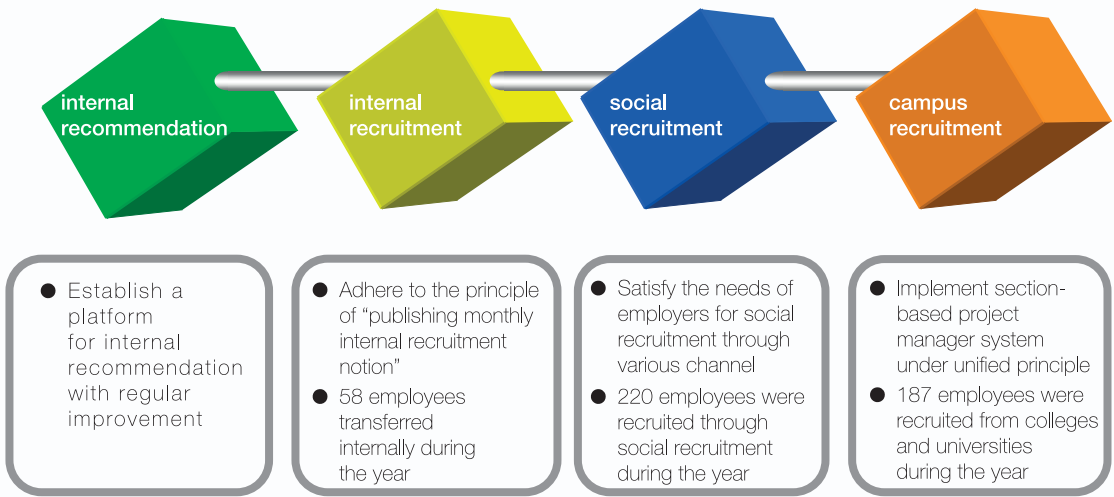
Gender Composition



1.2 Staff Recruitment

The Company maintained a sound staff recruitment process in accordance with the requirements under the Labour Law, the Employment Contract Law, Law for the Protection of Minors, Law on Protection of Rights and Interests of Women and the relevant laws and regulations, strictly carried out reviews on the basic information of job applicants. The Company forbade employment of child labour and forced labour, and adhered to the principle of equality between men and women. The Company does not discriminate against staff on nationality, race, age, gender, marital status.

The Company has established various recruitment channels based on different needs of talents for various positions, including internal recommendation, internal recruitment, social recruitment and campus recruitment. The Company also introduced innovative measures to conduct recruitment of talents in various aspects such as railway signaling, rail transport digitalization and intelligence, passenger vehicle electric motor system, deep water equipment and environmental protection and overseas talents, which will provide the Company with talents supporting its major industrial development.



## Part IV Care for Staff

### 2. Staff Salary and Benefits

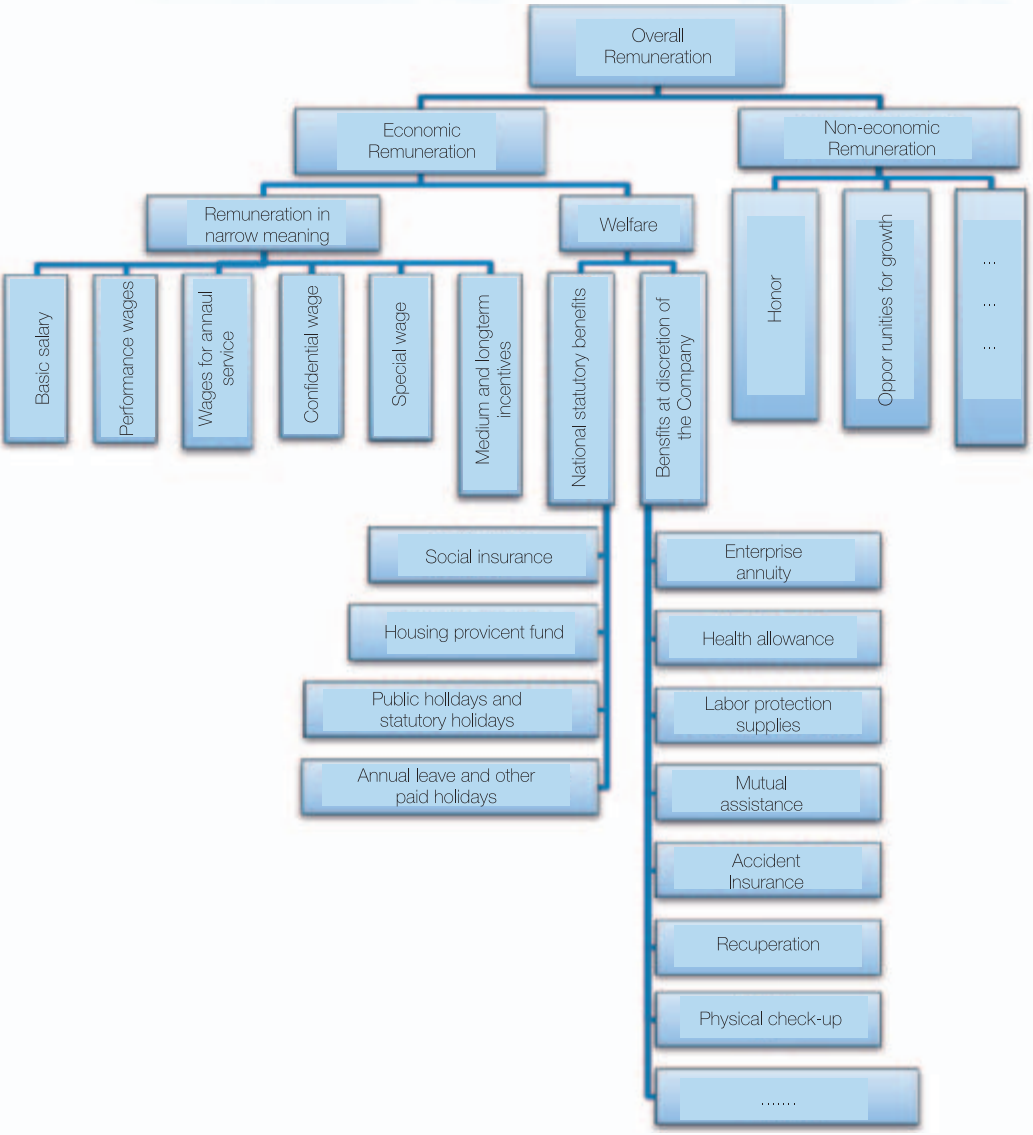
The Company provides remuneration and benefits in accordance with the requirements under national laws and regulations and relevant policies, and maintains a comprehensive remuneration and welfare management system, and adheres to the principle of equal pay for equal work and legal remuneration.

The Company adheres to the principle to put efficiency as top priority while giving consideration to fairness and equality, and establish a salary system which links salary with position, capability and performance.

In accordance with the requirements of national laws, regulations and related policies, the Company provides and maintains statutory benefits for its staff, including basic pension insurance, basic medical insurance (including medical insurance for serious illness), work injury insurance, maternity insurance, unemployment insurance and housing fund, etc. It also provides the staff with various benefits at discretion of the Company, including corporate annuities, supplemental medical insurance, lunch subsidies, health allowance, labor protection supplies, physical checkup, recuperation, transportation and communication subsidies, mutual assistance, accident insurance for one-child families, etc.

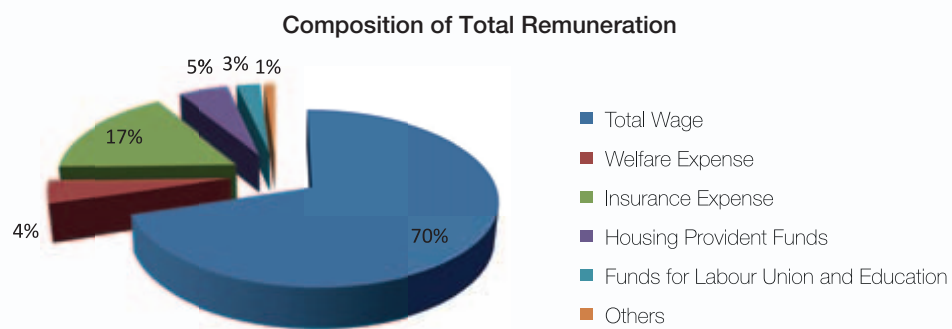
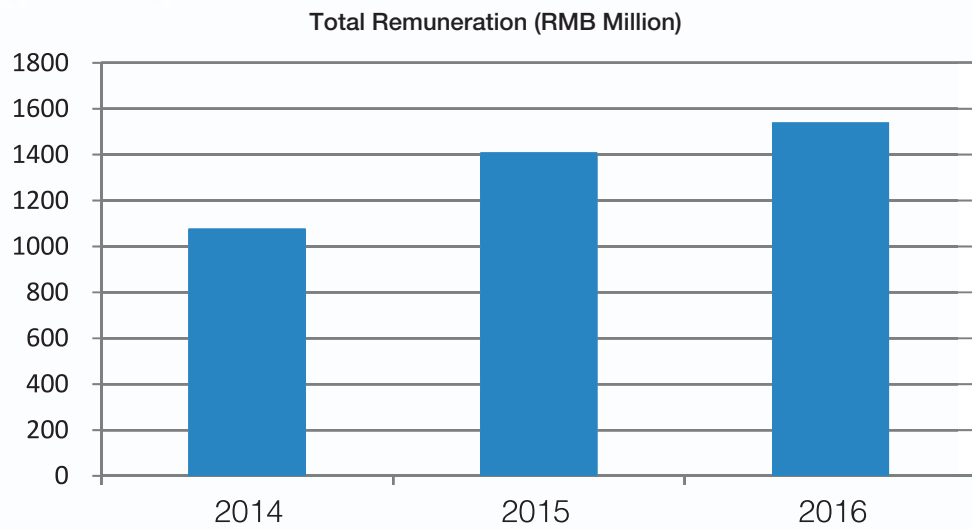
Staff is entitled to day-off on public holidays, wedding leave, funeral leave and maternity leave. In addition, they are entitled to an annual leave according to national *Regulations on Paid Annual Leave and Implementation Measures for Paid Annual Leave for Corporate Employees*.

The Company promotes the concept of overall remuneration. The Company has extended the concept of remuneration to include welfare and other non-economic rewards such as honors, career development, etc. Accordingly, the staff can have a comprehensive understanding of the returns given by the Company and thus the incentive provided to them in form of remuneration is enhanced.



## Part IV Care for Staff

### *Increase in and Composition of Total Remuneration (Wages and Surcharges) in 2016*



II. Training and Development

1. Staff Training and Management



Based on the extensive training demand survey and study alongside with the analysis on various training demand for the Company's strategic development and employee's career development, the Human Resources Department of the Company actively allocates its resources and arranges training at different levels, in different forms and on different aspects by engaging internal and external lecturers.

The Human Resources Department persists in revising and updating training management and system development, and eliminating obsolete ones by enlarging efforts on monitoring and best practice benchmarking to ensure commencement of training projects at organizational level. Moreover, the Company encourages independent design based on three levels of learning, namely position, competence and career development and integrates resources between internal and external programs in order to help enhance motivation, ability and perseverance of its staff with objectives and directions.

In 2016, the Company introduced innovative training and management models, established a comprehensive training system for the Company, formulated a clear list of training programs for the learning and development of the Company's employees, regulated the certification process of the Company's internal training programs and the certification procedures of supporting materials (learning materials) for assessment of career development level of the employees. The Company also sorted out the teams of star internal trainers of the Company and business unit internal trainers, established the competency model and mechanism of "selection, cultivation, utilization and retention" of the internal trainer team, established the promotion and learning plans for internal trainers and specified the promotion and cultivation mechanisms of internal trainers. The Company regulated the training procurement process, identified certain qualified quality suppliers and formulated the management mechanism for engagement and removal of suppliers. In addition, the Company integrated the existing working methods of training planning and organization to formulate the working procedures and operating manual of training planning and organization and summarize effective measures of implementation of training, which further consolidated the foundation, eliminated the risks, enhanced the efficiency and reduced the cost of the Company's training management.



## Part IV Care for Staff

Internal trainers are the teachers of corporate knowledge and skills, and play a critical role in talent cultivation. The Company attaches great importance in cultivation of internal trainers and has established a matured team of internal trainers comprising a total of 521 trainers classified into two levels (company level and business unit level). In particular, the Company has 23 five-star internal trainers, 96 four-star internal trainers and 137 three-star internal trainers. In addition, the Company also has 5 CRRC senior trainers. To facilitate sharing of internal experience and knowledge transmission, the Human Resources Department further promoted the platforms of "Happy Classroom" and "Expert Forum" to carry out internal training. Many staff actively shared their experience and achievement on stage, which formed a "sharing and interactive environment". In 2016, based on special communication, the Human Resources Department of the Company planned and organized a series of activities to invite the middle and senior management of the Company to share their experience at internal training platform. During the year, a total of 34 middle and senior management and reserve management talents gave lecture in "Happy Classroom" and "Expert Forum" with attendance of over 1,200 people. Launched in 2013, "Happy Classroom" and "Expert Forum" have established a good internal training brand image among the employees with over three years of operation, over 80 training programs and over 5,000 attendees, which provided various opportunities for the employees to learn from experiences.

In 2016, the Company's total investment in training was approximately RMB 12,450,000. The training time per capita was 46.5 hours and 1,871 training projects were completed. The implementation rate of the Company's annual training plan was 90.9%.

[Example of case]

The Company planned and organized various training projects, including "Serial Training Programs for Professional Manager on Leadership Enhancement", "Serial Training Programs for Reserve Management Talents", "Special Training on Project Management", "Serial Training Programs for Internal Trainers", "Talents Training for Core Members and Junior Staff in Manufacturing Centers", "Training for Reserve Talents in Times Electronics", "Training for Reserve Talents in Ningbo Times" and "Serial Special Training Programs for Marketing Staff", etc. The Company has built a core talent team for promoting the success of the Company's strategies. The Company also launched training programs such as "Practical Training for International Talents", "Training for PDT Project Manager", "Technological Management Training Camp for Core Members", etc.

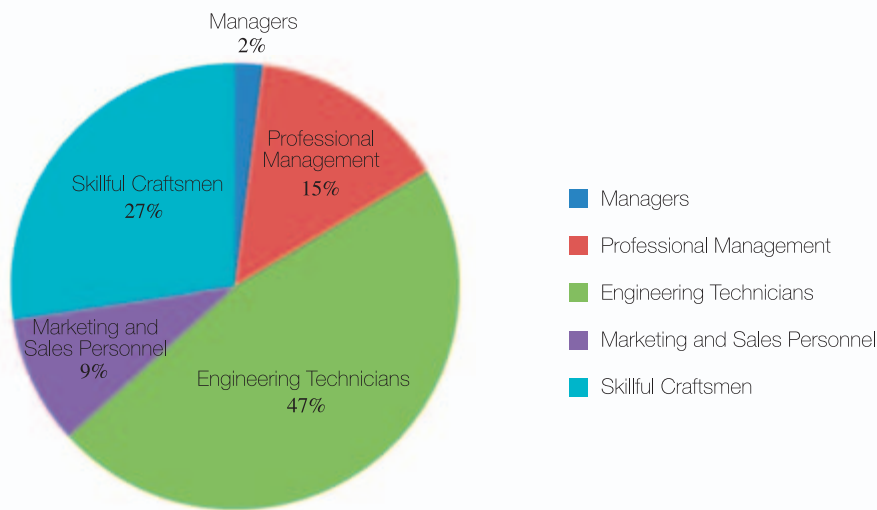
The Company actively arranged relevant staff to participate in various special training programs organized by CRRC and CRRC ZELRI, including "Formosa Plastic Training for Core Management Talents of CRRC", "Training for Core Technical Talents (Germany)", "Training for Core Technical Talents (Korea)", "International Talents 631 Project", "Ability and Quality Training for Job Foremen", "Training for Internationalization of Professional Management Personnel in Human Resources, Planning, Operation, Audit and Project Management", etc.

2. Staff Career Development

The Company has developed a career development bridge system with 5 career development paths for managers, engineering technicians, professional management, marketing and sales personnel and skillful craftsmen. Every staff may realize his/her own career development through the planned career path of the job he/she engages. Currently staffs above C-level accounted for 29.85% of total number of staff.

Currently the Company has a team of experts possessing core expertise of the industry, operation and management talents as well as core technological talents. The team includes 5 “chief technological experts”, 16 “senior technological experts”, 59 “technological experts”, 5 “senior management experts”, 24 “management experts”, 1 “senior skillful expert” and 7 “skillful experts” of CRRC.

Composition of career development paths:



Note: The scope of statistics does not include DYNEX and SMD.

III. Health and Safety

1. Safety Objective and Index Control

The Company adheres to the occupational health and safety guidelines of “people-oriented, continuously improvement, environmental friendly and healthy and safe”. According to the safety management principles of “Party and Government Share the Same Responsibility, One Position with Dual Responsibility and Person in Charge Shall be Responsible”, the Company strictly implements accountability system for safe production. Responsibility Commitments on Management of Safety Objectives are signed between all units to specify the safety responsibilities and break down the safety indexes. In 2016, the Company had no liable accidental casualty, new case of occupational disease, Class I fire and explosion accident and other accidents with material effects and thus successfully achieved the annual safety target of “Three Zero”, eliminated accidents that caused serious injury or material economic loss and eliminated traffic accidents with material liabilities. There was one accident that led to minor injury during the year, which was far lower than the 0.2% controlling indicator. In 2016, the Company was awarded the titles of “Advanced Unit for Safe Production” and “Advanced Unit for Prevention of Occupational Diseases” in Zhuzhou City.

## Part IV Care for Staff

### 2. Occupational Health and Safety Management System

In 2016, through process control measures such as the acquisition/identification/compliance appraisal/publicity of laws and regulations concerning occupational health and safety, identification/appraisal and control of sources of hazard, implementation of management plans of occupational health and safety systems, optimization of procedures and systems, internal audit, supervision audit and management appraisal at the two-level OHSAS18001 system, the Company enhanced its OHSAS18001 self-control capacity, continuously improved the operation performance of its system and successfully passed the supervision audit of the OHSAS18001 management system and the authentication certificates of the system remains valid accordingly.

Authentication Certificate of OHSAS18001 Occupational Health and Safety Management System



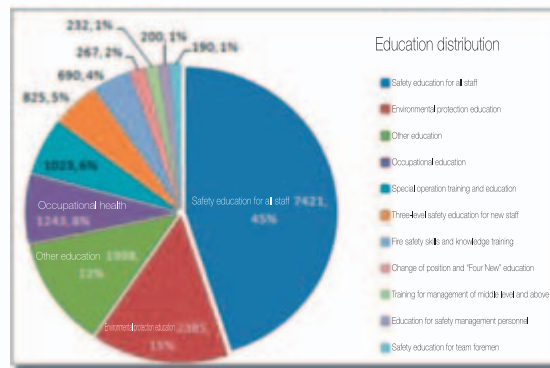
### 3. Successful Pass of Re-Assessment of Class I Enterprise of National Safe Production Standardization

In 2016, the Company organized and carried out a series of works for re-assessment of Class I enterprise of safe production standardization. Through standard comparison, establishment and improvement of various safety files and accounts, organizing and carrying out self-assessment, forecast and alarm of safe production standardization, participation in the safety training of State Administration of Work Safety by the general manager of the Company, self-assessment of the Company, re-assessment by China Machinery Industry Association of Safety and Health and other works, the Company passed the assessment with a high score of 97.5 points. On 27 December 2016, the State Administration of Work Safety issued the No. 9 Announcement, which stated that the Company passed the re-assessment of Class I enterprise successfully.

### 4. Comprehensively Enhanced Employees' Safety Awareness and Skills

#### 4.1 Carried out safety education to strengthen the safety knowledge of all employees

The Company further enhanced various educational and training programs concerning safety and environmental protection and organized diversified educational and training activities through combination of various ways such as "Attract Talents and Go Global". These programs and activities include awareness training for the first responsible person of Party administration and senior management responsible for safety management and EHS of the Company, auditing skill enhancement training for EHS internal auditors, DuPont safety training, training for cadres of middle level or above and safety management personnel, safety training for team foremen, environmental protection training for environmental protection management personnel and operators of environmental protection facilities, three-level safety education and training for new staff, certification and re-assessment training for special operators, training for operators exposed to occupational hazards, special safety training for after-sales service staff, etc. According to the statistics, in 2016, 17,003 employees of the Company at various levels have received safety training in various forms which improved the employees' safety knowledge significantly.



#### 4.2 Carried out a series of safety activities to enhance employees' safety awareness

Based on working group construction and lean and safe workplace, all departments and business units of the Company organized and carried a variety of safety activities: the Youth League Branch Committee of the Company carried out the establishment and commendation activity of "Youth Model Post of Safe Production"; the Operation Management Department and Administration and Security Department actively carried out safety promotion activities in topics such as safety promotion, safety training and emergency drills through the activities of "Safe Production Month" and "11.9" National Fire Safety Day; the manufacturing centre organized and carried out the publication meeting of outstanding safety improvement proposals; the semiconductor business unit optimized the emergency rescue system, formulated on-site emergency response card, organized and carried out emergency response training and drills and carried out 62 emergency drills during the year; the Railway Engineering Machinery Business Unit and Baoji Times carried out safety culture activities on a quarterly basis to create the safety culture atmosphere to trigger the employees' initiative and activeness in participating in safety management.

## Part IV Care for Staff

Safety Promotion Publicity Board



Watching Safety Warning Videos



Publication of Safety Improvement Proposals



CRRC Safe Production Prohibitions  
Posted at the Operation Premises



### 5. Improve the Abilities in On-site Safety Management and Control

#### 5.1 Carried out comprehensive identification and rectification of safety hazards to eliminate potential accidents

The Company has established a comprehensive safety hazards identification mechanism, and organizes and carries out company level safety inspection at least once in every month, business unit level safety inspection at least once in every week and working group level safety inspection every day. During the year, 14 company level safety inspections were conducted and 466 safety hazards were identified; 1,161 safety hazards were identified in the business unit level safety inspections; and 4,208 safety hazards were identified in the working group level safety inspections. The Company eliminates potential accidents in accordance with the "Five Determinations" principle, namely determining the rectification measures, determining the responsible personnel, determining the investment amount, determining the prescribed period for rectification and determining the emergency plan.

### ***5.2 Focused on safety investment, continuously improved the on-site operation environment and enhanced the inherent safety level***

In 2016, the Company formulated 10 annual EHS management plans and carried out a series of activities for EHS continuous improvement. For example, the manufacturing centre replaced the existing paint coating with environmentally friendly raw material without benzene, which improved the employees' operation environment and reduced the impact from emission of benzene series to the air. The semiconductor business unit strengthened the control and management of material sources of hazards in the radiation operation and achieved infrared full coverage, interlock control of equipment, initiation with double fingerprint authorization and installation of kill switch, which significantly enhanced the inherent safety level of radiation operation. The Company accrued the safe production expenses in strict compliance with the Administrative Measures for Provision and Utilization of Safe Production Costs of Enterprises. In 2016, safe production expenses of RMB45,953,000 were used for personal labour protection of employees and enhancement of on-site inherent safety level.

### **6. Dedicated Efforts in Occupational Health Program to Protect the Health of Staff at Work**

The Company adheres to the people-oriented principle and actively organizes occupational health check-ups, so as to protect both physical and mental health of staff working at locations exposed to occupational hazards. In 2016, the Company organized health check-ups for 546 in-service staff working at locations exposed to occupational hazards, pre-employment check-ups for 34 staff proposed to work at locations exposed to occupational hazards and post-employment check-ups for 24 staff working at locations exposed to occupational hazards, and urged the electrical interconnection technology business unit and manufacturing centre to change the job duties of three staff due to occupational contraindication. The Company also jointly organized on-site monitoring for operation premises exposed to occupational hazards with Zhuzhou City Occupational Diseases Prevention and Control Centre. Among which, 77 out of 87 check points were in compliance with the required standard, representing a compliance rate of 88.5%. The efforts in employees' health and operation environment enabled the Company to obtain the latest information on occupational health in a timely manner and avoid the occurrence of occupational diseases.

## **IV. Interests of Staff**

### **1. Effectively Practicing the Workers' Congress System to Exercise Workers' Rights**

As the basic form of practicing democratic management by enterprises, Workers' Congress is an organization body for workers to exercise the power of democratic management in accordance with the provisions of laws. Based on the principle of democratic centralism, the Company established its Workers' Congress system in accordance with relevant requirements under Trade Union Law.

Council of Labor Union is the operating authority of Workers' Congress and it is responsible for the daily work of Workers' Congress. The 153 existing staff representatives were elected democratically from cadres (staff) in various departments (units), involving personnel from various fields of the Company, such as management, technology, production and marketing. The Workers' Congress system has strengthened the Company's democratic management effectively, guaranteed the rights of staff to exercise democratic management according to the law, fully utilized staff's initiative and creativity, therefore effectively enhanced our enterprise quality and economic benefits.

Over 100 suggestions received at the 2016 Workers' Congress were sorted and extracted, which involved market collaboration, technology research and development, issues related to two funds, cost reduction, quality, people's livelihood and other matters.

The Company has also arranged staff representatives to collect opinions and provide feedbacks on 20 management documents including Administrative Measures for Remuneration.



## Part IV Care for Staff

### 2. Staff's Rationalization and Feedback Mechanism

1. In order to continuously increase its competitiveness and establish a harmonious labor relationship, the Company actively expanded the democratic channel with a view to motive staff's incentives and creativity as well as effectively exploit resource potentials. In 2016, the Company accepted over three thousand reasonable suggestions from its staff. The acceptance rate of reasonable suggestions from its staff was 100%.
2. Set up "Leadership Reception Day" system. The Company's leaders met with fundamental staff regularly every week, listened to their suggestions in person, and offered replies and solutions on the spot.
3. Set up online staff hotlines. The Company's general manager and secretary of the Party committee listened to staff's suggestions and opinions on their concerned issues through online communication in Youth Forum. There were 46 suggestions from staff that were replied during the year.
4. Set up contact sites for public opinions to serve fundamental staff, with branch presidents as the liaison officers of the units for public opinions. The Company also established fundamental labor union that covered all systems of the Company with targeted communication and liaison stations for the fundamental staff and other employees, so as to gain an in-depth understanding of the staff's concerns and requests.
5. The Company implemented a points award management system by establishing a points award platform, where fundamental staff with reasonable suggestions will be rewarded, so as to encourage and provide guidance to the staff to actively participate in management innovation and improvement of production quality of the Company. In 2016, the Company received a total of 8,995 improvement suggestions.
6. The Company's leaders persisted in visiting the fundamental level of operation monthly. In 2016, integrating the idea of "Promoting Development Activities by Adhering to Three Stricts and Three Honests Principle and Listening to Public Opinions", the Company held over 40 seminars for the fundamental staff to gather their opinions on corporate development, individual career development, welfare, etc. Relevant units (departments) were designated to solve problems in response to staff's suggestions in a practical manner and provided 211 replies.



### 3. Care for Staff's Mental Health and Organize Diversified Activities

Development of Mental Health Consultation: During the year, the Company organized family treatment training and advanced training of helping skills for women workers committee members and consultants. Over 50 people participated in three courses of training of helping skills and one course of family treatment training. The Company carried out the "Care for Mental Health of Front-line Staff" activities at the after-sales service offices, conducted psychological tests and drawing tests for over 60 front-line after-sales service staff in five offices, provided one-on-one counseling to staff with potential mental issues, and carried out training in various topics such as "Dating with Your Heart", emotion management, stress management and happy workplace.

### 4. Care for Staff's Benefits and Dedicate the Company's Love to the Society

**"Double Offerings" activities:** The Company conducted a thorough check on the staff coming from families in need to avoid omission of any families or staff. The Company specified the supporting targets, which included impoverished staff families with actual family income lower than the local minimum living standard; families of staff suffered from severe diseases; families of staff affected by accidents or disasters; model workers and pioneers in difficulties; staff (especially female staff) from single-parent families in difficulties; solitary elderly retired staff in difficulties; and difficult families of staff who engage in quality services and technical services away from their families for a long time, thereby strengthening the focus and effectiveness of supporting activities. According to the results of assessment from the Labor Union of the Company, 108 staff in difficulties were identified as the supporting targets. The Company also continuously introduced innovative activities and increased the supporting efforts. Based on actual situation, the labor unions of all levels provided support to front-line staff with total donation of RMB235,320. In July, cooling supplies amounted to over RMB700,000 and facilities amounted to over RMB100,000 were provided to 22 front-line entities; in September, autumn schooling aid amounted to RMB63,000 were provided to 23 staff. The leaders of the Company visited the staff stationed at subsidiaries in other cities, after-sales service points and the Changsha Maglev site, and organized conferences.

**Organizing Medical Check-ups and Treatment for Employees:** The Company organized to solicit the opinions on treatment activities from over 100 advanced staff, and completed two advanced treatment programs. During the year, the Company optimized the medical check-up plan, required the hospitals to improve service quality, and implemented group medical check-up pilot project in after-sales service, railway and urban railway sectors so as to improve the staff participation rate in medical check-ups and reduce the waiting time. Over 1,100 staff aged above 35 participated in the health check-ups and over 970 married female staff participated in the gynecological check-ups.

**Purchasing insurance for staff:** The Company organized relevant personnel in finance, human resources, after-sales service and signal and communication sectors. The Company discussed on taking out critical illness insurance and accident insurance for the front-line staff in after-sales service sector.

**"Development in Three-Tier Cities":** The Company collected the annual needs and plans for development of three-tier cities submitted by the after-sales service points, organized to formulate the office standardized management manual, gradually completed the standardization construction of eight offices in Xi'an, Lanzhou and other cities, and provided pillows, bed sheets, blankets, medical kits, fitness equipment and books to the offices. Labor competition was also included in the development in three-tier cities, and various activities such as dormitory culture competition and working skills competition were organized.

## Part IV Care for Staff

### 5. Care about Staff's Harmonious Development Both Physically and Mentally by Organizing Diversified Events

**Grateful Journey Season Two:** The Company organized the “Knowing CRRC, See You in the Future” Grateful Journey Season Two family tour, and nearly 100 staff of CRRC Times Electric and their children as well as student reporters from Zhuzhou Daily participated in the event. Through the on-site visit of “Culture Journey”, “Science Journey”, “Creation Journey” and “Discovery Journey”, driving simulation and high-speed rail drawing and assembling activities, the children of the staff gained knowledge about the history and cultural development of the Company and the works of their parents. After the event, many children of the staff submitted their thoughts and feelings about the visit.

**Female Workers Cultural Organizations:** The Labor Union of the Company carried out various activities in the form of “micro cultural organizations”. In particular, “Micro Sports” cultural organization carried out the Energetic “Workers’ Congress” activity, 13 teams comprised of over 100 staff participated in the “Energetic Cycling + First Quarter New Education Content Q&A” activities; “Micro Sports” “Yoga Group” delivered excellent welcoming performance in the form of “Partner Yoga”;



**“Micro Lifestyle” cultural organization** carried out the “Love Home Love Life” flower arrangement experience activity to organize three groups of female workers to participate in flower arrangement training and practicing experience, and exhibited their works on International Women’s Day;

**“Micro Classroom” cultural organization** carried out the “Who is the Beauty” makeup experience to organize the female staff to participate in makeup experience and teach them the makeup techniques; “Micro Charity” cultural organization carried out charity sales of unused items to organized women workers committee members to collect unused and useful items or books of the staff for charity sales or donation, and received over RMB300 from the sales which was delivered to the Youth League Committee for donation.



**“Micro Handicraft” cultural organization** organized over 30 staff to carry out “Delicious Life, Delicious Love” DIY baking experience activity. Through the learning of baking knowledge from the teacher, hands-on baking experience and relevant games and story sharing activities, the staff released the pressure from the work. In the “Know about Paper Cutting, Appreciate the Folk Art” activity, over 100 staff obtained knowledge of paper cutting history and basic skills and exhibited their innovative paper cutting works in various topics such as traditional patterns, patterns of flowers, birds, fish and insects, CRRC culture and studies on the theoretical and practical issues of Party building.





## Part IV Care for Staff

**“Micro Photography” cultural organization** organized over 60 staff to carry out the “How to Use DSLR Camera – See You in CRRC Times” photography training, and the activities included teaching of basic knowledge and night photography theory and watching sample photos, which reserved talents and information for photos of corporate promotion activities;



**Reading Activities:** The Company carried out the second Zhuzhou CRRC female staff reading serial activities. The staff actively wrote articles about reading and family culture and building of happy family, which included thoughts and feels from reading when travelling, support from reading to career development and touching letters to the family filled with gratitude and thoughts of family members. 14 articles of thoughts from reading, 11 letters to home and 5 materials of reading enthusiast families and most beautiful families were collected and submitted. With the women workers committee members' efforts in organization and recommendation, a total of 13 staff from Zhuzhou CRRC Electric were awarded in the International Women's Day writing contest organized by the Labor Union.

**Diverse Cultural and Sports Events:** Under the theme of “Culture will Bring Energy Together, Thoughts will Lead the Way to Future”, the Company further implemented its cultural organization system from key areas to all regions, with a view to provide diversified recreational and sports activities to our staff and bring together their vitality. During the year, the Company achieved satisfactory results in various competitions: champion in both men and women volleyball competitions, second place in table tennis competition and second place in badminton of CRRC. In addition, the Company held a friendly table tennis match with Aviation Industry Corporation of China and organized the staff to participate in the Zhuzhou Oceano Badminton Tournament, Zhuzhou Helong Cup Basketball Competition, Zhuzhou Evening Cup Football Competition and other matches, which facilitated the corporate promotion through recreational activities.



# Part V Social Harmony

## I. Supply Chain Management

### 1. Management measures

1. Resolving "meeting the direction of the Company's future development" as the guideline for selecting suppliers.
2. Signing annual performance agreements with key suppliers, monitoring key performance and arranging specialized supporting work.
3. Conducting regular business exchanges with key strategic suppliers quarterly to promote the improvement of both sides.
4. Dispatching quality engineers and quality inspectors to be on site to supervise those companies in which quality problems frequently occur to improve the level of quality management of suppliers.
5. Promoting e-procurement information platform and order collaboration with suppliers to improve information exchange with them and reduce transaction costs.
6. Conducting exchanges with suppliers to improve the supply chain management and promote the decrease in costs of supplies.

### 2. Suppliers assistance

1. Organizing annual supplier conference for suppliers relation management to share experience of management and promote synchronous improvement.
2. Implementing hierarchical management of suppliers, with three grading evaluation (strategic, important and general) on the suppliers in terms of their importance. Strategic suppliers are evaluated per quarter, while important suppliers are evaluated half a year. Promoting e-procurement information platform and order collaboration with suppliers to improve information exchange with them and reduce transaction costs.
3. Establishing a monthly information notification mechanism for key suppliers to urge them to improve the quality of management and control.
4. Conducting monthly inspection of the strategy suppliers' and important suppliers' technology and quality system to urge them to improve production and business management. Arranging for key suppliers to make investigations, conduct research and study in outstanding domestic enterprises from time to time, reinforcing construction of supply chain.



## Part V Social Harmony

### **2.1 Standardizing and specifying institutions for strengthening internal work**

The Company has established and improved a systematic and strict supplier management process. The Company formulated supplier performance evaluation system and the corresponding rewards and punishments system to standardize quality problems and handling process. The Company also specified the requirements of employee management and business ethics requirements and so on, and required the suppliers to have complete technology and quality assurance systems. The end-to-end control of the procurement supply process has been basically realized, covering supplier development, supplier management, procurement management, supplier performance evaluation, supplier exit and elimination and others which embody the concept of the two dimensions, the life cycle management of supplier and the cycle management of material production. The suppliers' capacity of self-management was gradually enhanced and common improvement was promoted through clear requirements of the systems.

### **2.2 Local procurement for promoting regional economic development**

The number of the suppliers which are located in Zhuzhou is 43, of which the larger-scale companies include Zhuzhou Shiling Transportation Equipment Company, Ltd., Zhuzhou Times Metal Manufacture Co.,Ltd., 株洲日望精工有限公司, Zhuzhou Huaxin Precision Industry Co.,Ltd., CRRC Zhuzhou Motor Co., Ltd, Zhuzhou CRRC Electromechanical Technology Co., Ltd., 株洲中車奇宏散熱技術有限公司, Zhuzhou Lince Group Co., Ltd., Engine Branch of CRRC Zhuzhou Locomotive Co., Ltd., 株洲市華誠科技實業有限公司, 株洲市弘偉工貿有限公司, 株洲中車軌道交通裝備有限公司, 株洲華芬實業有限公司 and 湖南東洲電氣科技有限公司.

As far as the procurement of outsourced parts, the Company gave priority to local suppliers. According to the proportion of the total amount of procurement, suppliers of Zhuzhou City accounted for 82.5%, while Changsha-Zhuzhou-Xiangtan Economic Zone accounted for 91.5%. The Company promoted the employment of outsourcing factories and enhanced the production capacity. The contributions to society led to the development of the local economy. Only through the Zhuzhou Day Seiko Co., Ltd., Zhuzhou Times Metal Manufacturing Co., Ltd., Xiangtan era Harness Co., Ltd. and other major supporting suppliers to promote it's The output value for 2016 of more than RMB300 million and the employment of nearly 3,000 people were achieved by the only means of cooperation with the main supporting suppliers including 株洲日望精工有限公司, 株洲時代金屬製造有限公司 and 湘潭時代線束有限公司.

## **II. Public charity**

The Company knows well the importance of growing together with the community. In 2016, the Company actively launched different kinds of theme activities of social responsibility and dedication, including social assistance, student support and environmental practice. The Company gracefully made return to society and actively fulfilled our social responsibility, striving to spread the concept of corporate social responsibility across every corner of the community.

### 1. Employees' launching the activities of "Social Responsibility and Dedication Month"

With the atmosphere of Lei Feng Month in March, the young employees of the Company's launched a series of activities on "Social Responsibility and Dedication Month" in the company-wide areas, calling and guiding all the employees to cultivate the awareness of dedication and to practice social responsibility. The community tree planting activity "Action of Shades of Trees" was launched along the bank of Xiang River in Hexi District of Zhuzhou City. A total of almost 200 employees participated in the activity and planted more than 100 trees for adding some green to the city. Organization of youth youth volunteer team, to the site to carry out on-site public welfare activities, to Shifeng District homes for the elderly to carry out counseling, blood donation site to carry out voluntary blood donation. The employees also organized many youth volunteer teams to go to different places to launch public welfare activities including visiting and extending their regards to retirement homes of Shifeng District homes, and organizing voluntary blood donation in blood donation sites.



## Part V Social Harmony

### 2. An employee of the Company Liu Yulong's donation of hematopoietic stem cell to highlight corporate social responsibility

Liu Yu Long, an ordinary company employee, takes a keen interest in sports that one can find his running figure in major sports arenas. He also has ardent love for charity activities that he has continuedly participated in voluntary blood donation, for 7 years since 2009. In mid-June 2016, Liu Yu Long received a notice from Zhuzhou City Red Cross which inform him that the matching between his hematopoietic stem cell and a leukemia patient's was successful. When he knew this information, he proceeded to donate his hematopoietic stem cells without hesitation. The process of donating hematopoietic stem cells is very complex. Donors are required to be injected with mobilizing agents used before the operation for 4 days in succession. In the process of the surgery which lasts for more than 4 hours, the two arms of the donors cannot be bent. He finished the surgery with tenacious perseverance. Liu Yu Long's decision at that time is not only a good representation of corporate culture of the Company, but also further development and promotion of core values of the Company. Being the leader in the rail transit industry in Hunan Province, Zhuzhou CRRC Times Electric Co., Ltd. will certainly bear the responsibilities and meet the commitment which society entrusts, dedicate love to the community and transmit warmth.



In 2017, the Company will persevere in the strategy of concentric and diversified development. It will therefore comprehensively strengthen the awareness of “customer, cost, innovation and responsibility” awareness, further consolidate the whole industry chain structure of “basic device, equipment and system, and complete machines and engineering” and enhance the brand promotion and quality improvement, laying a solid foundation for the development of the 13th Five-Year Plan.

1. Ensuring the delivery of the existing national rail transit project and continually expanding the domestic and overseas markets of CRRC Corporation Limited; promoting the trial and assessment of key projects including push-pull trains and double-deck multiple units; strengthening the influence of the independent traction system brands.
2. Making good use of the technical advantages of the Company's IGBT chip and the module and clarifying the technical route and the rules of the industry development, and combining with the application depth to accelerate industrial development.
3. As far as the rail construction machinery industry is concerned, the Company will grasp the market opportunities for new products and forge a series of high-end products.
4. Following closely China's rail transportation equipment enterprises' pace of “go out”, the Company will enhance the influence of self-owned brand “Core Power” in overseas market.
5. Promoting the adjustment and optimization of the organization structure. These are to improve the management efficiency, enhance the core competitiveness and achieve the goal of “slimming and fitness”.
6. Establishing the management model of product line that is applicable to the industrial characteristics of the Company, improving the planning capabilities of products business sector, optimizing and improving the process of product development and promoting the introduction of the product line management to various business units (subsidiaries).
7. Implementing excellence management consistently, promoting the work of excellence management and integration system of informatization and industrialization and further promoting the strategy of “organizational efficiency”.

