



XIWANG SPECIAL STEEL COMPANY LIMITED 西王特鋼有限公司

(incorporated in Hong Kong with limited liability)

Stock Code : 1266



2018

ENVIRONMENTAL, SOCIAL AND
GOVERNANCE REPORT

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ABOUT THE COMPANY

Xiwang Special Steel Company Limited (the “**Company**”) was founded in December 2003, as a controlled subsidiary of Xiwang Group Company Limited (the “**Xiwang Group**”). The Company was listed in the main board of the Stock Exchange of Hong Kong Limited (the “**Stock Exchange**”) in February 2012. It was accredited by the Ministry of Industry and Information Technology as a Corporation that meets the industry standards in January 2014. The Company’s respective designed annual steel smelting and rolling capacity are 3,300,000 tons and 3,000,000 tons, and major products include high-quality carbon steel, structural alloy steel, pinion steel, spring steel and ball bearing steel and various high-quality steel rods and wires, high-strength building materials, special steel ingots and forged bars and etc, for high-end uses.

The Company maintains its transformation strategy of “from general steel to special steel, then to steel products and to products for public use”. It has cooperated with the Institute of Metal Research of Chinese Academy of Sciences to establish a clean and intelligent high-end special steel model production line. The production facilities and processes are becoming more and more stable and mature, and the steel production capacity is improving steadily. More than 80 types of high-end special steel products are placed on the market now and are highly recognized by high-end customers in the PRC and markets across Asia.

PROMOTION OF SOCIAL RESPONSIBILITY

The Company implements effective management of social responsibility. During its work, the Company has established a system for promoting social responsibility in which management is involved and various departments coordinate in order to guarantee the implementation and advancement of social responsibility tasks. This report contains information and data on the Company’s environmental, social and governance performance during the period from 1 January 2018 to 31 December 2018 (the “**Report**”). This Report has been prepared in accordance with the “Environmental, Social and Governance Reporting Guide” in Appendix 27 to the Rules Governing the Listing of Securities on The Stock Exchange of Hong Kong Limited. This Report sets out the approach, strategy, priorities and objectives of the Company’s management on Environmental, Social and Governance (the “**ESG**”) relating to its business, and measures and systems adopted by the Company to implement and monitor the ESG strategy. As the board of the Company (the “**Board**”) is responsible for assessing and determining the Company’s risk related to ESG, and ensuring that proper ESG risk management and internal control systems are in place, the Board, with the confirmation from the management, considers that the ESG risk management and internal control systems are effective.

We value your feedback on our sustainable development. If you have any comments and suggestions for this Report and our environmental, social and governance performance, please feel free to send us your feedback to wangjianxiang@xiwang.com.cn.

ENGAGEMENT OF STAKEHOLDERS

The Company considers that stakeholders of the Company include government, shareholders and investors, employees, customers, suppliers, peer and industry associations. Expectations and opinions from our stakeholders are important and valuable. The Company engages its stakeholders through utilizing different channels, such as publication of annual reports, official website, general meetings, training and seminars, feedback forms and industry conference. Through stakeholders engagement, the Company understands the expectations and concerns from stakeholders so as to facilitate the formulation of strategies for sustainable development.

HUMAN RESOURCES

I. Employment and Labor Standards

A. Employees

Xiwang Steel upholds the business philosophy of “Health, Integrity, Fortune and Happiness”, as well as people-oriented, harmonious development, paying attention to maintaining and safeguarding employees’ rights and interests. We adhere to staff standards, providing them with pleasant work environment, competitive salary and benefits and advancement path, nurturing healthy, pragmatic, innovative, hardworking and enterprising staff members.

The Company fully recognizes the importance of talents. In order to facilitate the transformation and upgrading of our products, we specifically hire senior metallurgical technicians from large steel enterprises to set up product research and development teams and enhance our technological R&D capabilities. At the same time, the Company visits major colleges and universities to recruit talents in specific disciplines, such as metallurgical materials and metal machinery, sets up college-enterprise cooperation model, strengthens its foundation and broadens its market, upgrades the overall education levels of staff members, and provides quality human resources for further transformation and upgrading of the Company.

In order to nurture our own talents team, the Company steadily carried out training for the improvement of management foundation, actively moved forward skills assessment of key technical positions with full launch after pilot testing in departments. A pool of trainers was developed to guarantee availability of trainers. Talents pool of four levels of the Company and talents reserve of 292 persons was selected, creating a group of talents reserve who are loyal, passionate and innovative.

An effective salary incentive mechanism has been established to stabilize and retain the talents needed by the Company, allowing employees to share the profit from the development of the Company. In accordance with relevant national and regional laws and regulations and relevant management systems of the Company, a salary management mechanism based on job performance and various allocations was established to guarantee the realization of employees’ value.

The Company takes “efficiency first” as the principle, and conducts assessments based on the completion rate of profits etc., and adopted total participation of employees in profit performance. The key performance assessment indicators of performance salary of production staff are output, quality and safety of products, while that of other functional management departments are personal key performance indicators, capabilities, behavior and attitudes. At the same time, salaries of all staff are linked to the operating profits of the Company so as to promote employees’ awareness of increasing efficiency and creating income, sharing corporate profits and benefits.

In accordance with the principle of “openness, fairness, and impartiality”, the Company has formulated “Requirements for Promotion of Junior Management Personnel”. In the selection of junior management personnel, comprehensive evaluation is conducted in various ways such as open competition, equal competition, recommendation by seniors, and personal application. A clear and smooth promotion path is in place, which is subject to the supervision of all staff members and is incentive-oriented, to encourage career advancement.

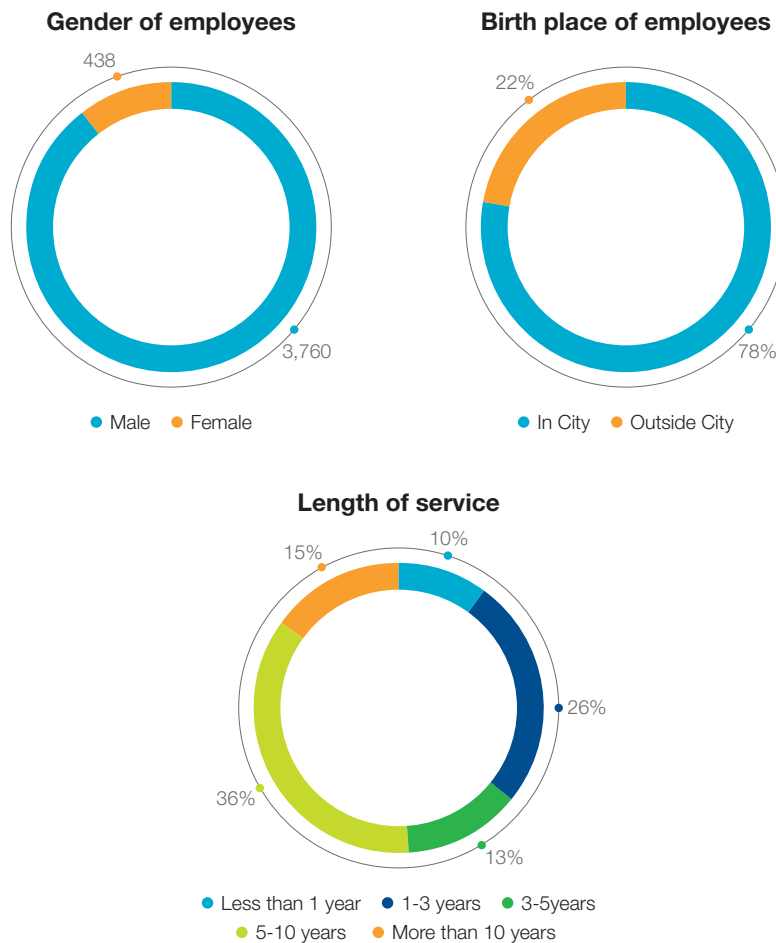
ENVIRONMENTAL, SOCIAL AND GOVERNANCE REPORT 2018

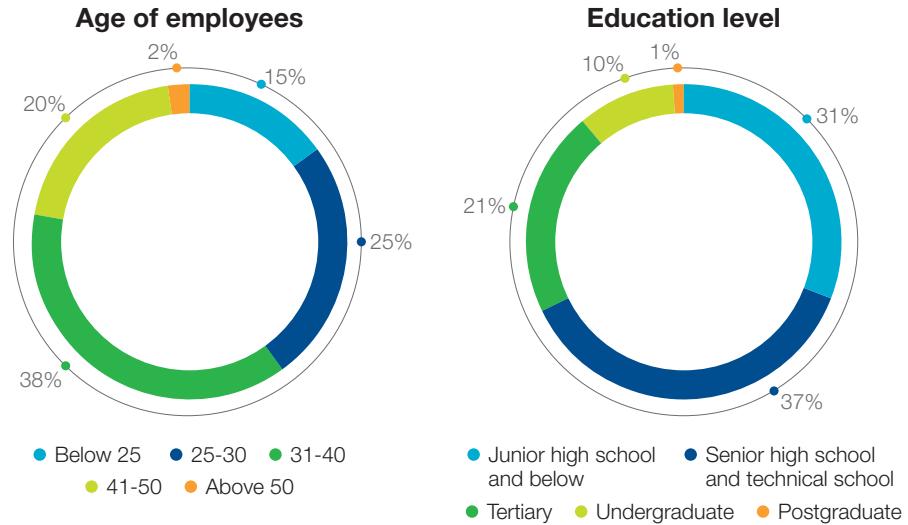
XIWANG SPECIAL STEEL COMPANY LIMITED

The Company strictly implements the Labor Law of the People's Republic of China, the Labor Contract Law of the People's Republic of China, the Social Insurance Law of the People's Republic of China, the Law of the People's Republic of China on the Protection of Rights and Interests of Women and other national laws and regulations, and has established relevant measures, such as "Employees Recruitment Management System", "Remuneration Management System", "Employees Leave Management Measures", "Social Security Management System" and "Employment Contract Management Measures". The Company standardizes the process of recruitment, appointment, selection, assessment and leave-taking of employees through various management requirements.

The Company strictly follows the requirements of relevant laws and regulations and policies of national and local social security by paying the social security contributions for all staff in full and on time in protecting the rights and interests of staff.

As of 31 December 2018, the Company has a headcount of 4,198, including 169 management personnel and 527 technicians. In terms of education level, 1,336 employees are tertiary educated or above.





As shown from the staff composition, our staff tends to be younger, with higher education level, is engaged for a length of service of 3 years or above, possesses certain particular work experience, and boasts strong creativity and productivity.

Turnover rate

The average turnover rate and percentage in 2018:

	Number of employees	Percentage
Gender profile		
Male	53	94.6%
Female	3	5.4%
Age profile		
Below 35	35	62.5%
36-50	21	37.5%
Education level		
Below technical school	40	71.4%
Tertiary or above	16	28.6%
Length of service		
Less than 3 years	32	57.1%
3-5 years	18	32.2%
More than 5 years	6	10.7%
By district of domicile		
In Zouping County	42	75.0%
Outside Zouping County	14	25.0%
Total	56	100%

B. Health & Safety

In order to better manage our occupational safety and health works, the Company strictly implements the Production Safety Law of the People's Republic of China, the Law of the People's Republic of China on the Prevention and Treatment of Occupational Diseases, the Fire Control Law of the People's Republic of China, Provisions on the Supervision and Administration of Production Safety of Shandong Province, Production Safety Regulations of Shandong Province and other national or local laws and regulations.

In 2018, there were no incidents of large scale in safety production and there were no new cases of occupational illness. The occupational illness reporting rate, on-site detection and evaluation rate of occupational hazard factors and employees' occupational health checkup rate were 100%. A series of activities including risks rating control, examination and management of hidden hazards, safety emergency exercise, safety education for all staff, monitoring and management of key hazards, contest on safety knowledge, "learning about the procedures and avoiding three violations" were continuously held to control and eliminate hidden hazards of production safety. The work on safety has achieved good results and provided strong guarantee for the realization of business objectives.



Fire emergency drill



Safety reminder

To avoid the incidence of occupational illness, in terms of system, a sound occupational health and safety management system is in place and occupational health safety management system certification have been awarded. In terms of process, each staff member is regularly provided with a series of protective supplies including uniform, shoes, helmet, mask and gloves. At the same time, workshops are furnished with necessary emergency medicine. In terms of prevention, the Company held an annual occupational health body check and regular training on occupational health to continuously enhance self-protecting capability of staff members against occupational hazards.

The Safety Division of the Company has entered into the "Commitment to Safe Production Objectives Management" which covers every aspect of operations and every staff members of the Company, in order to optimize the safe production accountability system and enhance the strength of implementation of responsibility, which is the key to safety management. The subject responsibility of safe production of various levels is further defined and the principle of "the head of a production unit is the first responsible person of safe production" is strictly complied with for enhancing the implementation of safety responsibility. The Company has guided and supervised various departments to continuously carry out safety production and occupational health examination according to the respective actual safety production. Inspection on safety supervision of production plants was conducted daily in 2018, with a total of 161 safety supervision orders issued and more than 1,670 hidden safety hazards rectified.

Employees Health and Safety Data Indicators		2018	2017
Number of trainees	Training for all staff	4,198	4,140
in safety production	Special training	2,790	2,600
Number of job-related deaths		0	0
Proportion of job-related deaths to total workforce (%)		0	0
Lost work days as a result of job-related injuries		0	0

C. Development & Training

Development and training is one of the key factors for our success. To satisfy the development needs of staff of various levels, different departments of the Company have organized 294 hours of training and an aggregate of 9,785 persons participated in 2018, and all the participants have finished the related courses. In order to enhance our staff's management standard, operation capability, technical operation, manner and awareness as well as to promote the performance of the organization, various learning platforms have been set up at the company level, such as "Skills Assessment for Key Technical Positions", "Business School Training", "Training Course for New Management" and "Master of Engineering Training Course".

Training	Training hours	Enrollment/competition status
1 st Elites Training Course	52 hours	101 trainees graduated
Training for New Management	22 hours	53 trainees graduated
Training for CPC Membership Applicants	10 hours	67 trainees graduated
Training for General Technical Positions	128 hours	370 trainees participated
Training for Key Positions	30 hours	1,335 persons participated
Business School Training	42 hours	1,668 persons participated
Lectures by Doctors	10 hours	320 persons participated
Total	294 hours	590 persons per training class with 9,785 persons participated

In 2018, a total of 101 trainees have successfully completed the "1st Elites Training Course", which has provided a strong force for our talent pool and the building of our talented team. We have accomplished our annual target of nurturing 300 elites within three years.

Leveraged on the senior talents from the Institute of Metal Research of Chinese Academy of Sciences (中科院金属所), we have launched a program named "Lectures by Doctors" where our professional trainees have a chance to learn new technologies, ideas and methods. A total of 6 sessions have been organized to date, and have provided training to 320 persons.

In addition, the Company has actively built up our lecturer team, and has started internal recruitment to maintain a stable pool of lecturers. The Company has recruited a total of 54 lecturers internally and formed 11 teaching and research groups, namely comprehensive management, pre-iron making, converter melting, electric furnace melting, steel rolling, heat treatment, safety and environmental protection, equipment, electric and quality management and corporate culture, all these have secured the lectures for our internal training.



Yellow River trip of Elites Class



Training by doctors (PhD) of Chinese Academy of Sciences

For the training of new staff, the Company has introduced a “Mentoring Management System”, all new staff recruited from tertiary institutes will be assigned with a mentor when they report for duty to the production unit. Under the system, all new staff will need to sign a mentoring agreement, and they will receive support on safety, skills and living from their respective mentors.



A team of trainers was developed to ensure availability of teaching staff



One-to-one mentorship

For external training, the Company has joined hands with Laigang Steel Group Party School (萊蕪鋼鐵集團黨校) for the first time to organize a 16-days General Skills Training Program which included 128 hours of training on electrical engineering, bridge crane operation and steel fitting, which has enhanced the theoretical knowledge and operation ability of our employees. For the “Master of Engineering Training Course” jointly held with the Institute of Metal Research of Chinese Academy of Sciences (中國科學院金屬研究所), a total of 11 trainees have completed the professional course in accordance with the teaching schedule and they are now drafting their final paper. Our aim is to provide resources and platform for the nurturing of talents for senior positions, as well as to enhance the level of academic sophistication of our staff, allowing them to put what they have learnt to good use.



Training by instructor from Laigang Group (萊鋼集團)



On-job training of master students at Institute of Metal Research in Shenyang

D. Labor Standards

All employees of the Company are located in China and there is no breach of the Labor Law or any other applicable standards and regulations during their employment. Salary, overtime pay and benefits are based on local minimum (and maximum) standards. Employees are generally aged between 18 and 45, with special employees aged between 45 and 60. Any form of child labor or forced labor is forbidden in the Company. We adhere to open, fair and impartial recruitment according to the principle of equal competition, selection of the best and internal candidates first before external ones, with the employment mechanism becoming more scientific and reasonable.

The Company implements the 8-hour work system and its production frontline staffs are on 3 shifts. The Company strictly complies with the national statutory holidays and the day-off system stipulated by the Company in order to safeguard employees' proper working hours and rest days.

The Company adheres to equal employment policy and treats each staff member equally. Their nationality, race, gender, religion, age, sexual orientation, political affiliation and marital status will not affect their employment, compensation and promotion. An inclusive win-win work environment is created.

"The Law on Employment Contracts" is strictly complied with and employment contract is entered into with each staff member on the day they join the Company. Contributions into basic pension insurance, basic medical insurance, unemployment insurance, injury insurance and maternity insurance are paid according to the laws. Financial gains of the Company are shared by the staff, contributing to harmonious labor relations.

For timely identification of problems in the Company, staff satisfaction survey or solicitation for advice is conducted on quarterly basis to provide staff with a platform to participate in the management of the Company, better identification of problems and make suggestions. A record of staff suggestions or advice will be kept in the departments concerned on a quarterly basis and corrective measures will be formulated by the departments within a week and the progress of the correction published.

II. Business Management

A. Supply chain management

The Company has developed the "Procurement Management Procedure or Manual" in accordance with the Contract Law of the People's Republic of China, the Bidding Law of the People's Republic of China, the Special Equipment Safety Law of the People's Republic of China, the Regulations on the Safety Administration of Dangerous Chemicals and other laws and regulations which specify the criteria for selecting suppliers: (1) Good financial performance in the industry, with financial statements available. Priority will be given to suppliers with continuous results with large steel factories; (2) Suppliers with solid financial strength and registered capital ranking in the top 10 in the industry as one of the priority considerations; (3) Suppliers recommended by other steel factories, with credit standing, service quality, delivery term being factors considered by consulting steel factories which the Company has close relationship with. Before making the final selection, the prospective supplier is asked to provide a sample for examination or trial to ensure the quality of the parts supplied; field survey of the supplier to confirm its delivery capability, the soundness of quality assurance system and financial strength etc.

The e-commerce platform was upgraded in 2019. Suppliers meeting our conditions are managed in a centralized manner by setting up a procurement and trading platform where price inquiry, tender invitation and signing of procurement contract are conducted. Suppliers' services are tracked throughout the procurement process for monitoring and evaluation of the suppliers based on their financial strength, delivery capability, advance payment capability, quantity and quality of delivery, contract performance, after-sales service and business integrity. Prospective suppliers will be determined whether they meet the entry requirements according to the results of evaluation and "contract supplier register" will be established. Suppliers not meeting the requirements will be disqualified. As at December 2018, there was a total of 13,120 suppliers, 30% of which are located in the same province as the Company and 70% in other provinces.

The Group continues to improve its supply chain management and quality of the supplier team. In order to ensure stable production and cost effectiveness, we have established a communication system with suppliers and conducted benchmarking against outstanding enterprises in the industry. Supply-chain related environmental protection laws, quality management system requirements and industry entry standards formulated by the government and applicable to the Company are all incorporated into our procedures for supplier entry and dynamic management with a 100% coverage. The survival of the fittest principle is applied to our selection of suppliers in order to prompt suppliers to enhance their compliance and competitiveness, enabling the Company to further prevent social and environmental risks relating to supply chain.

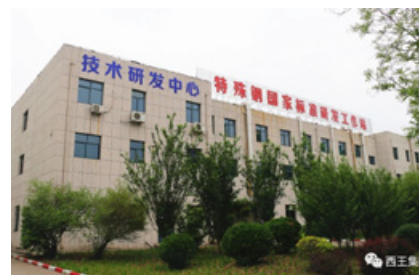
B. Product Responsibility

1. Maintenance and Protection of Intellectual Property

The Company strictly complies with laws and regulations such as the "Trademark Law", the "Patent Law", the "Copyright Law", the "Law against Unfair Competition", the "Foreign Trade Law" and the "Intellectual Property Law". Continuous innovation and excellence is pursued and development, use and protection of intellectual properties are continuously enhanced. The effects of proprietary intellectual properties are fully leveraged in expanding markets at home and abroad as well as adjusting industry structure, effectively enhancing our core competitiveness. The first "R&D Workstation of Special Steel of National Standards" in PRC was established in 2018 to facilitate conversion of new products and technologies into productivity and guide transformation and upgrade of the steel industry through standards. Up to now, the Company has acquired 12 scientific and technological innovations, passed 10 new appraisals for products and new technologies and applied for 112 invention and utility model patents, with 101 said patents granted.



First prize of Technology Innovation Competition of Shandong Province



R&D Workstation of Special Steel of National Standards

2. *Quality Testing and Products Recall*

As the Company attaches high importance to product quality, systems and relevant procedures for quality testing of products are formulated and implemented in accordance with the Product Quality Law of the People's Republic of China, the Standardization Law of the People's Republic of China, the Metrology Law of the People's Republic of China and its Rules for Implementation, the Law of the People's Republic of China on the Protection of Consumer Rights and Interests, the Regulations of the People's Republic of China on Certification and Accreditation and other laws and regulations. The Quality Test Center of the Company is certified by CNAS national laboratory, which proves its accurate and reliable test data. We depend on advanced management system and products certifications to guarantee capabilities, with the following certifications awarded: ISO9000 Quality Management System, GJB Quality Management System, Armament Quality Management System, IATF16949 Quality Management System as well as general hot rolled steel bar products certification of MCC (Beijing) Metallurgical Product Certification Centre Co., Ltd (中國中冶(北京)冶金產品認證中心有限公司), LZ50 axle products certification and Supplier Qualification of CRRC Changchun Railway Vehicles Co., Ltd. (中車長春機車有限公司). Information management system of the Company was built by Baosight Software of Baosteel Group. A dedicated quality management and testing system is embedded within the business management and control system for making available the functions of applying metallurgical specification and quality design to the process, automatic collection, transmission, determination and analysis of data and formulating warranty and reports. Products are manufactured in the production process according to the metallurgical and product specifications in the information system and the standards established for each process. Those passing the appearance and performance indicators test will be automatically determined to be stored while unqualified products will be subject to material blockade in the information system and handled according to "Unqualified Product Management System". There has been no single incidence of recall of any products sold or delivered due to safety and health concerns so far.

3. *Products and Customer Complaints*

As the Company attaches high importance to customer complaints, it has formulated and strictly implemented the "Rules of Customer Service Management". In order to strictly manage customer information, since the launch of the Baoxin System (寶信系統) in May 2017, all customer directory information has been uploaded to the system. All new customers are added by the Ministry of Information to guarantee confidentiality. Authority to access the Baoxiu System is assigned according to job duties. In case of any violation, loss or divulgence, the persons concerned will be dealt with seriously by their immediate superiors. The Company focuses on after-sales service and feedback from customers on their use of products and provides customers with professional technical support. There have been no significant litigations or complaints arising from product quality or service since 2018.

As the Company puts much emphasis on prevention of legal risks relating to advertising and promotion of products and services, it strictly implements the Advertising Law of the People's Republic of China, the Regulations on Control of Advertisement, the Implementation Rules for the Regulations on Control of Advertisement, the Anti-Unfair Competition Law of the People's Republic of China and other laws and regulations. As of the date of this report, there were no significant litigations or complaints arising from advertising and promotion of products and services.

C. Anti-corruption

There were no cases of corruption, bribery, fraud, illegal fundraising, or money laundering in the Company this year. In order to strengthen supervision of staff and combat financial crimes, the Company has established the Inspection Office under the administration of immediate general managers. Staff members may report by mail, telephone or face-to-face any breach and dereliction of duty, abuse of power, fraud, money laundering and offering and acceptance of bribe as may be committed by various staff members of the Company. An online “Xiwang Forum” has also been established to allow the supervision of the Company by staff members. In order to fight corruption of the management and to eradicate such behaviour, the Company has introduced “Code of Ethics of the Management” and implemented five “Anti-corruption Declaration of the Management”.

III. Society

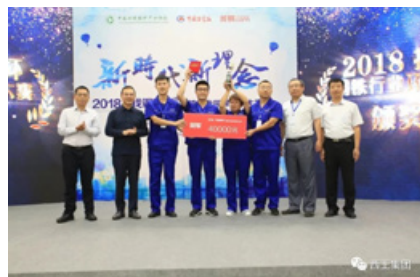
A. Social Responsibility

As part of our commitment to social responsibility, the Company has assumed more social responsibilities and made further contributions to the society while growing its business.

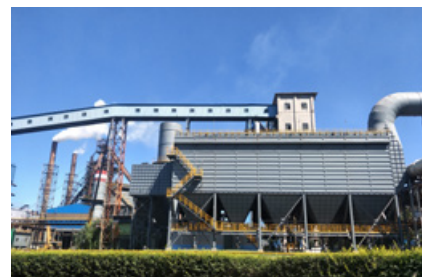
1. *Environmental Protection*

Xiwang Steel adheres to the environmental protection philosophy of “saving energy and reducing consumption, developing circular economy, creating environmental-friendly Xiwang”, strictly fulfilling the requirements of the “Environmental Protection Law of the People’s Republic of China”, “Law of the People’s Republic of China on Prevention and Control of Air Pollution”, “Law of the People’s Republic of China on Prevention and Control of Water Pollution”, “Law of the People’s Republic of China on Prevention and Control of Soil Pollution” and “Law of the People’s Republic of China on Prevention and Control of Solid Waste Pollution”. We implemented the consultation paper on the “Ultra-low Emission Renovation Plan for Steel Enterprises” issued by the Ministry of Ecology and Environment of the PRC and other laws and regulations, standards and local regulations for environmental protection. We faithfully fulfilled corporate social responsibility, actively controlled pollution generated in production, with the discharge volume of major pollutants lower than national special emission limits of the current standards of the State and Shandong Province; the implementation of environmental management has significantly increased, with significant improvement in the appearance of factory; air quality has continuously improved with air indicators such as sulfur dioxide, nitrogen oxide and PM10 all meeting national standards and requirements and total emission of pollutants continuously decreased.

Xiwang Steel adheres to “Environmental Protection is the First Priority in Corporate Development” (企業發展·環保先行), with the goal of improving environmental quality and creating a beautiful environment. We actively respond to the stricter requirements of the new environmental protection law on steel companies. A number of intensive environmental control measures have been implemented, including all raw fuels stored in closed storage, low temperature oxidation and SCR denitrification for smoke emission of sintering machine heads, wet desulfurization with lime and plaster desulfurization twin towers, electrostatic + wet electrostatic dust removal to remove particulates coupled with de-whitening on smoke emission, achieving ultra-low emission and removal of white steam on sintering machine heads. Efficient Gore filter bags were used for dust removal of other dust collectors. Cast Iron field of Blast Furnace was fully closed. Gas from both blast furnace and converter was recycled using dry dust removal, equipped with recycling systems of residue heat in sintering and cooling steam in converters. Through deepening of organized emission control, strengthening unorganized emissions control and implementing clean transportation, sintering, ironmaking and steelmaking and other bulk material transportation all achieved an ultra-low emission level. As Xiwang Steel actively builds green factories, implements Industrial Green Development Plan (2016–2020) (工業綠色發展規劃 (2016–2020年)) and “Green Manufacturing and Engineering Implementation Guide (2016-2020)”, it was rated as a “Green Factory” (Third Batch of Green Manufacturer List) by the Ministry of Industry and Information Technology.



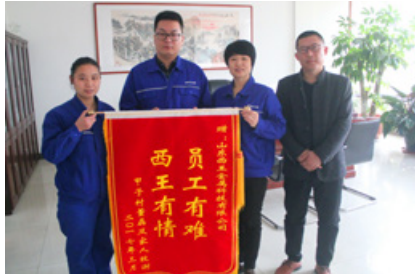
Winning the national quiz competition on environmental protection in the steel industry



Factory of Xiwang Steel

2. Social Charity

With respect to charity work, the Company combines charity work with its business development strategy and spiritual development, and continuously enriches its development. "Donations and Poverty Relief Activities" are held annually, supporting communities with difficulties including the disaster-stricken, children deprived of education and employees with financial difficulties. Staff members donate more than their daily average salary in the donation activity. The atmosphere of charity is strong in the Company, with solidarity, harmony and mutual support between staff members. Open, equal, impartial and effective support is given to those with difficulties. Values of giving back to the society, caring about charity, sharing of social responsibility have been internalized in the "Code of Conduct" of the Company and have grown to become "spontaneous action" of our staff members.



When in need, Xiwang gives a hand



Disaster relief by Xiwang Group

B. Caring for Employees

In order to enrich the spiritual lives of the management and staff members, and motivate them to advance their careers and enhance cohesiveness of the Company, we care about staff members in terms of hard and soft environment.

In terms of physical environment, the Company provides a comfortable, bright, safe and healthy work environment, with amenities including dormitory, canteen, bathrooms, library, toilets, badminton and table tennis courts for employees to create a safe, carefree and comfortable Xiwang Special Steel community. Staff committee was established to organize meetings regularly for listening to employees' opinions.

In terms of soft environment, staff activities are regularly organized to promote exchanges, learning and growth of staff members as well as their physical and mental health, enriching their lives and inspiring their creativity.



Serving cool refreshments to staff in the summer



Staff canteen of cleanliness and safety



Recording of Xiwang video news



Basketball competition of the Company

ECOLOGICAL COMMUNITY

The Company adheres to the environmental protection philosophy of “saving energy and reducing consumption and waste, developing circular economy, creating environmental-friendly Xiwang” in protecting the environment and giving back to the society.

The Company strictly fulfills the requirements of the “Environmental Protection Law of the People’s Republic of China”, “Law of the People’s Republic of China on Prevention and Control of Air Pollution”, “Discharge Standard of Pollutants for Iron and Steel Industry of Shandong Province” (DB 37/990-2013) and “Comprehensive Emission Standards for Regional Air Pollutants in Shandong Province” (DB 37/2376-2013) and implements the documents such as “Jingjinji Air Pollution Prevention and Control Enhancement Measures (2016-2017)” and the “Phase II Action Plan (2016-2017) of 2013-2020 Air Pollution Prevention and Control Plan of Shandong Province” and the “Implementation Plan of Environmental Intensive Treatment of Steel and Iron Industry of Shandong Province” (Letter of Lu Environmental Office [2016] No. 159), “Opinion on Promoting the Implementation of Ultra-low Emissions in the Steel Industry” (HuanDaQi [2019] No. 35) and other laws and regulations, standards and local regulations for environmental protection. The discharge volume of major pollutants is lower than the current standards of the State and Shandong Province.

1. Environmental protection performance

Xiwang Steel strictly implements the philosophy of “Environmental Protection is the First Priority in Corporate Development” and continues to increase its investment in environmental protection and the relevant comprehensive control and management, with its efforts well recognized by the government and the community. We were honored with the title of “Green Factory” by the Ministry of Industry and Information Technology of the PRC and became an exemplary enterprise in terms of environment protection and governance in the industry. The company team won the national quiz competition on environmental protection in the steel industry. In January 2018, we successfully passed the review of ISO14001: 2015 environmental management system. In May 2018, we successfully passed the review of ISO50001: 2011 Energy Management System. In October 2018, we successfully passed the review of “Clean Production”.

In 2018, there were no cases of major environmental and public pollution incidents in the Company. Safe use of radioactive sources and disposal of hazardous wastes in compliance with regulations has eliminated environmental risks. The implementation of environmental management has significantly increased, with significant improvement in the appearance of factory; total emission of pollutants has continuously decreased and air quality has continuously improved, with the emission of dust at 0.23 kg/ton steel, sulfur dioxide at 0.17 kg/ton steel and nitrogen oxide at 0.65 kg/ton steel, far below the emission levels of dust at 0.6 kg/ton steel, sulfur dioxide at 0.8 kg/ton steel and nitrogen oxide at 1.2 kg as required by the “Implementation Plan of Environmental Intensive Treatment of Steel and Iron Industry of Shandong Province” (Letter of Lu Environmental Office [2016] No. 159), as shown in Table 1:

Table 1: Emission of pollutants per ton steel

2018

Type of pollutants	National emission standards (kg/ton steel)	Actual Emission of Xiwang Steel (kg/ton steel)	Reduction in emission (kg/ton steel)
Smoke dust	0.6	0.23	0.37
Sulfur dioxide	0.8	0.17	0.63
Nitrogen oxide	1.2	0.65	0.55

2017

Type of pollutants	National emission standards (kg/ton steel)	Actual Emission of the Company (kg/ton steel)	Reduction in emission (kg/ton steel)
Smoke dust	0.6	0.577	0.023
Sulfur dioxide	0.8	0.179	0.621
Nitrogen oxide	1.2	0.689	0.511

2. Sewage permit

In November 2017, the Company passed the review of Binzhou Environmental Protection Bureau (濱州市環保局) and was granted a sewage permit (certificate no.: 913716006705049378001P), with total air emission limits set at 1,591 tons/year for particulates, 1,517 tons/year for sulfur dioxide, 4,313 tons/year for nitrogen oxide.

3. Intensive environmental treatment projects

A. Environmental protection investment

Since 2013, total investment of the Company amounted to approximately RMB1.05 billion, with a number of intensive environmental treatment projects implemented, resulting in the actual emissions of pollutants in various processes being far below the national special emission limits. Current operation cost of environmental protection is RMB145 per ton steel.

B. Sintering process

On 31 December 2018, Xiwang Metal Science & Technology Company Limited* (西王金屬科技有限公司) adopted for its 360m² sintering machines such sintering processes as heating SCR denitrification, desulfurization with lime and plaster desulfurization twin towers, high voltage double chamber and four electric field + wet electrostatic dust and particulates removal, de-whitening on smoke emission, achieving an effective ultra-low emission with the “four become one” feature (i.e. desulfurization, denitrification, removal of particulates, flue gas whitening) with good results, fully meeting the ultra-low emission standards of the steel industry, and is the first steel enterprise in the province to simultaneously achieve ultra-low emission and non-white smoke emission in the steel industry.

Closed conveyors such as closed belts and corridors are used in the transportation of raw materials and fuel used in the sintering process and transportation of ingredients, blends and finished products. Closed cover and dust removal facilities are equipped at the unloading and receiving points of conveyors while the existing dust removal facilities are upgraded and US Gore dust bags, which are of international advanced standard, are used for effective collection of smoke dust. The concentration of particulates is lower than 10mg/m³.

Through deepening of organized emission control, strengthening unorganized emissions control and implementing clean transportation, sintering, ironmaking and steelmaking and other bulk material transportation all achieved an ultra-low emission level, with concentration of pollutants emission stably lower than the national limit for that of air pollutant emission, as shown in Table 2.

Table 2:

2018				
Production facilities	Type of pollutants	DB37/990-2013 Special Emission Limits under the Pollutants Emission Standard for Iron and Steel Industry in Shandong Province (mg/m ³)	Opinion on Promoting the Implementation of Ultra-low Emissions in the Steel Industry (HuanDaQi [2019] No.35) (mg/m ³)	Concentration of pollutants emission (mg/m ³)
Sintering machine heads	Particulates	20	10	7
	Sulfur dioxide	100	35	28
	Nitrogen oxide	300	50	42
Sinter machine tails	Particulates	20	10	6
2017				
Production facilities	Type of pollutants	GB28662-2012 Special Emission Limits under the Air Pollutants Emission Standard for Steel Sintering and Pellet Industries (mg/m ³)	DB37/990-2013 Special Emission Limits under the Pollutants Emission Standard for Iron and Steel Industry in Shandong Province (mg/m ³)	Emission after intensive treatment (mg/m ³)
Sintering machine heads	Particulates	40	20	8.7
	Sulfur dioxide	180	100	55.3
	Nitrogen oxide	300	300	200
Sinter machine tails	Particulates	20	20	6.7

C. Ironmaking process

Closed design is used for storage tanks, coke troughs, trough transport equipment of blast furnace ironmaking raw material system, shakers under ore and coke trough, belt conveyors for returning ore and coke and discharge ports, weighing equipment for furnace ore and coke. Top suction hoods are equipped for outlets of cast iron, tanks and nozzles. Covered or closed design is used for iron and slag trenches while cast iron field of blast furnace is completely closed and configured with particulates collection and treatment measures and existing dust removal facilities is upgraded and transformed, and US Gore dust bags, which are currently of advanced international standard, are used for effective collection of smoke dust. Particulates concentration is lower than 10mg/m³, ensuring the concentration of particulates emission is lower than the national limit for that of air pollutant emission. All emission values of the ironmaking process are lower than the national special emission limits, as shown in Table 3.

Table 3:

2018

Production facilities	Type of pollutants	GB28663-2012 Special Emission Limits under the Air Pollutants Emission Standard for Steel Sintering and Pellet Industries (mg/m ³)	DB37/990-2013 Special Emission Limits under the Pollutants Emission Standard for Iron and Steel Industry in Shandong Province (mg/m ³)	Emission after intensive treatment (mg/m ³)
Feed Launder Dust Removal in Blast Furnace	Particulates	10	10	2.5
Cast Iron Dust Removal in Blast Furnace	Particulates	15	15	3.8

2017

Production facilities	Type of pollutants	GB28663-2012 Special Emission Limits under the Air Pollutants Emission Standard for Steel Sintering and Pellet Industries (mg/m ³)	DB37/990-2013 Special Emission Limits under the Pollutants Emission Standard for Iron and Steel Industry in Shandong Province (mg/m ³)	Emission after intensive treatment (mg/m ³)
Feed Launder Dust Removal in Blast Furnace	Particulates	10	10	2.9
Cast Iron Dust Removal in Blast Furnace	Particulates	15	15	3.4

D. Steelmaking process

Dry-type electrostatic dust removal technology is used for primary smoke of converters, and after upgraded, the concentration of particulates is kept steadily below 50mg/m³. Secondary dust removal of converters, dust removal of refining furnace and dust removal facilities of electric furnace are upgraded and reconstructed, and US Gore dust bags, which are currently of advanced international standard, are used for effective collection of smoke dust. Particulates concentration is lower than 10mg/m³. Tertiary dust removal system of converter is constructed for elimination of unorganized emission of smoke dust, ensuring no escape of factory smoke dust. The reconstruction of feeding system for steel-making lime and light-burning dolomite effectively collect smoke dust, leading to all emissions of the steel-making process being lower than the national special emission limits, ensuring the concentration of particulates emission lower than the limit for that of air pollutant emission for the steel industry of Shandong Province (15mg/m³) as shown in Table 4.

Table 4:**2018**

Production facilities	Type of pollutant	GB28664-2012 Special Emission Limits under the Air Pollutants Emission Standard for Steel Sintering and Pellet Industries (mg/m ³)	DB37/990-2013 Special Emission Limits under the Pollutants Emission Standard for Iron and Steel Industry in Shandong Province (mg/m ³)	Emission after intensive treatment (mg/m ³)
Primary dust removal of converter	Particulates	50	50	10-30
Secondary dust removal of converter	Particulates	15	15	3.5
Tertiary dust removal of converter	Particulates	15	15	2.8
Dust removal of electric furnace	Particulates	15	15	2.0
Dust removal of refining furnace	Particulates	15	15	2.3

2017

Production facilities	Type of pollutants	GB28664-2012 Special Emission Limits under the Air Pollutants Emission Standard for Steel Sintering and Pellet Industries (mg/m ³)	DB37/990-2013 Special Emission Limits under the Pollutants Emission Standard for Iron and Steel Industry in Shandong Province (mg/m ³)	Emission after intensive treatment (mg/m ³)
Primary dust removal of converter	Particulates	50	50	10-30
Secondary dust removal of converter	Particulates	15	15	4.7
Tertiary dust removal of converter	Particulates	15	15	1.3
Dust removal of electric furnace	Particulates	15	15	1.5
Dust removal of refining furnace	Particulates	15	15	2.8

E. Unorganized emission treatment

Closed treatment of raw materials. Various kinds of raw materials, such as iron ore concentrate, coal and coke powder, are all fully enclosed in the site, and the exit of the site is equipped with cleaning devices for cleaning of wheels and body of vehicles. Waste water from cleaning will be recycled after sedimentation. Ground and roads are hardened and fixed sprinklers are increased, and wind and dust-proof nets are constructed.

Treatment of coke. Strategic partnership of coke supply was established and logistics management has been strengthened. Direct feeding of coke from coking factory to the blast furnace feeding system has been achieved.

Treatment of iron ore. Production units are optimized, direct proportionate ratio of iron ores with sintering ingredients increased, the amounts of sintering ore on the ground and secondary dust are reduced.

Cleaning of road surface. Five road sweepers, three water-spraying vehicles and one fog cannon dust-suppression vehicle were purchased for continuous cleaning, water spraying and dust suppressing on the road surface of factories to control road dust effectively.

Road vehicles management. Most of the internal vehicles and forklifts of the Company use LNG new energy. Stagger shift of transport plan is strictly implemented during the heating season. The exit of the site of raw materials is equipped with vehicle cleaning devices.

F. Online monitoring

According to the "Implementation Plan of Intensive Environmental Treatment for the Iron and Steel Industry of Shandong Province" (Lu Environmental Office Letter [2016] No. 159), online monitoring equipment of advanced domestic standards have been installed in the 10 monitoring points for flue gas at the heads of sintering machines, dust removal at the tail of the machines, dust removal from ore tank and blast furnace of iron site, secondary dust removal of converters and dust removal of electric furnace. Online networking with provincial, municipal, and county environmental protection departments were implemented as required for 24/7 online monitoring of pollutants discharge.

G. Greening of factory area

To create a green landscape, green area of the Company is currently more than 25%.

4. Comprehensive utilization of resources

A. Solid waste treatment

Treatment of slag of blast furnace. Slag produced during the ironmaking process of blast furnace is all ground to produce slag powder use for industrial purpose such as construction.

Treatment of Steel Slag. Steel slag produced in steel smelting goes through a hot stew device. Magnetic filtered slag steel and steel granules are directly used for smelting again while steel slag powder is used as raw materials for sintering. Magnetic filtered slag steel and steel granules are directly used for smelting again while magnetic filtered steel slag is used for the production of slag powder.

Recycling of Dust. Dust containing iron is used again as raw materials for sintering. Pneumatic conveying and suction trucks are used in unloading and transport of dust to eliminate secondary dust pollution.

Disposal of Hazardous Wastes. The Company attaches high importance to the generation and disposal of hazardous wastes. All wastes produced in 2018 were disposed of properly. For example, only companies with qualifications in handling hazardous wastes were engaged to handle those wastes such as waste oil and oil drums produced in the production process of the Company. 50.18 tons of waste mineral oil was disposed of in a compliant manner in 2018, which was 0.017 kg per ton steel.

Measures for reducing hazardous wastes include: (1) improving mineral oil quality to reduce consumption; (2) enhancing management to prevent dripping and seepage; and (3) increasing recycling of mineral oil.

Achievements: Consumption of mineral oil decreased significantly. 86.08 tons of waste mineral oil was disposed of in a compliant manner in 2017. The amount of waste mineral oil in 2018 was reduced by 35.9 tons as compared to 2017.

A total of 1,085,976 tons of blast furnace slag was produced in 2018, which was 414 kg per ton steel; and a total of 321,207 tons of steel slag was produced in 2018, which was 108.9 kg per ton steel.

Measures for reducing non-hazardous wastes include: (1) improving quality of raw materials, such as quality of lime and overall grade of blast furnace feed; and (2) enhancing smelting standards.

Achievements of reducing non-hazardous wastes: Output of blast furnace slag and steel slag decreased. At the same time, the blast furnace slag and steel slag produced by the Company were further processed as powder for use as construction raw materials

B. Water recycling

Processing, cascade recycling and cycle utilization rate of cooling water of internal process and equipment of the Company are all $\geq 95\%$. Waste water produced in the production process is collected and processed in a centralized manner, and subsequently used for slag flushing in blast furnaces and dust reduction in raw material yards, while waste water generated in daily lives is collected and transported to water treatment plant of the Group. The treated waste water is in compliance with the "Comprehensive Discharge Standards for Water Pollutants in Xiaoqing River Drainage Area of Shandong Province" (DB37/656-2006) and its amendments. Water treated by the water treatment plant will be recycled to the Company for flushing slag in blast furnace and converters. Fresh water consumption is 1.95 tons per ton steel. The Company was not involved in any issues about sourcing water fit for purpose in 2018.

C. Gas recycling

Gas from both blast furnace and converter is recycled using dry dust removal technology to improve gas recycling rate. Recycled gas from blast furnace and converter is used internally in baking of hot metal tank, steel ladle and intermediate ladle, heating of billet in heating furnace for steel rolling, hot-blast furnace and fume furnace of the coal injection system, and lime production by calcination in limestone kiln, or externally supplied to power plants for power generation.

D. Comprehensive utilization of residue heat

The steam generated from residue heat in sintering, electric furnace, converters, furnace for steel rolling will be completely fed into the main steam pipeline of Xiwang Group, for use in corn processing. Low-quality residual heat such as that of flushing slag of blast furnace and low-temperature smoke will pass through cooling and heating cogeneration project of the Company for generating hot and cold water, which are used for production and heating in office and the communities.

E. In 2018, the consolidated electricity consumption in total was 391.5kWh/ton steel.

F. In 2018, the oxygen consumption of steelmaking process was 54.9 m³/ton steel.

5. Reduce energy consumption and carbon emissions

- A. Energy management system and energy management departments have been established, which are responsible for comprehensive energy management. A three-tiered management system, “The Company-Energy Management Department-Production Plant” is being implemented.
- B. High-performance, energy-efficient and environment-friendly technology and equipment is used in project construction. The Company aggressively develops cyclic economy by combining the industrial features of intensive corn-processing business of Xiwang Group with that of the steel production industry, and achieved comprehensive utilization of resources such as steam, water and gas, forming a unique external and internal recycling system.
- C. In terms of raw materials, only iron ore powder of high grade, low sulfur and low content of hazardous elements imported from Brazil and Australia, and small amount of domestic iron ore powder are used for raising the grade of sinter and blast furnace feed while lowering the water content of coke fed into blast furnace and energy consumption.
- D. In terms of technologies, thick layers sintering, hot air sintering, mixture pre-heated by high-temperature steam, and steam generated by residue heat of smoke of sintering flue and ring cooler are applied to reduce energy consumption in the sintering process. For blast furnace, high pressure, high temperature of furnace top, high injection of coal and high content in oxygen, use of residual heat from flushing water of blast furnace and BPRT technology improve utilization rate of blast furnace gas and reduce energy consumption in blast furnace process. The use of one tank of molten iron from start to finish in blast furnace increases the physical heat in converters. The system is optimized and smelting technologies with less slag is used for lowering energy consumption in converters. Energy consumption is reduced by the use of technologies such as hot loading and conveyance of continuous casting billet, dual regenerative heating furnaces for steel rolling and recycling of water.
- E. In May 2018, the Company successfully passed the 2016-2017 greenhouse gas inspection of Shandong Provincial Development and Reform Commission. In 2016 and 2017, 1.867 tons and 1.905 tons of carbon dioxide was emitted per each ton of steel, respectively. The Company strictly complies with the Interim Measures for the Administration of Carbon Emission Permit Trading (Order No. 17 of the National Development and Reform Commission of the People’s Republic of China), the Notice of the General Office of the Ministry of Ecology and Environment on Exerting More Efforts in Formulation of the 2018 Carbon Emission Report and the Inspection and Emission Monitoring Plan (Letter of Climate of Environmental Office [2019] No.71) and other relevant regulations to manage carbon dioxide emissions.
- F. The Company was not involved in any issues about packaging materials used in finished products in 2018.

6. Formulate emergency plans for environmental pollution to ensure environmental safety

The Company attaches great importance to environmental safety. In order to prevent the occurrence of environmental pollution incidents, relevant technical personnel are organized to look into the factors and production segments which are prone to environmental pollution incidents in various production processes, and more than 10 emergency rescue plans for environmental pollution were formulated according to factors that are prone to environmental pollution incidents and the features of production processes, such as “Emergency plans for environmental pollution incidents”, “Emergency plans for radioactive sources”, “Emergency plans for coal gas incidents”, and “Emergency plans for special weather for production bodies”, and drills were organized.

Adhering to the spirit of “Environmental Protection is the First Priority in Corporate Development” with the goal of improving environmental quality and creating a beautiful environment, Xiwang Steel has actively responded to the stricter requirements of the new environmental protection law on steel companies and duly fulfilled its social responsibility.

ABOUT THE REPORT

2018 Environmental, Social and Governance Report of the Company states the principle adopted by Xiwang Special Steel Company Limited and its subsidiaries in 2018 in fulfilling social responsibility and the performance of the work, including the topics about sustainable development of economy, environment and society that attract attention of important stakeholders.

BASIS OF COMPILATION

The Report is compiled based on “Environmental, Social and Governance Reporting Guide” in Appendix 27 to the Rules Governing the Listing of Securities on the Stock Exchange.

RANGE OF REPORTING

Range of coverage:	The Report is mainly about Xiwang Special Steel Company Limited and its subsidiaries.
Range of Data:	All data in the Report shall be collected from the Company, unless with special explanations.
Range of Period:	1 January 2018 to 31 December 2018.
Duration of Publication:	The Report is an annual report.

DESCRIPTION OF DATA

All data and cases are collected based on the original records and financial report about the actual operation of the Company and its subsidiaries.