

SINCERITY
COORDINATION
诚信·协同

2016

Sustainability Report

BAOSHAN IRON & STEEL CO., LTD.

**SINCERITY
COORDINATION**



**CREATION
BEYOND VISION**

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MESSAGE FROM TOP MANAGEMENT

Chairman

Chen Derong



In 2016, under the correct leadership of the Group Corporation, all the cadres and employees of Baoshan Iron & Steel Co., Ltd. (hereinafter referred to as Baosteel Co., Ltd.) made concerted efforts, grasped the opportunity of dissolving overcapacity of the steel industry and market recovering, directly faced up to such difficulties and challenges as international trade protectionism, exacerbated fluctuation of exchange rate, operations in multiple lines of business and internal construction, took the objective of “ensuring performance at the top of the tree in China” as the criterion for all our work, regarded the rigid realization of the cost reduction target as the most important focus at work with innovation and reform and extraordinary means functioning as guarantee of implementation, and took great pains to improve the market competitiveness and the capacity to adapt to the rigorous market. Eventually, Baosteel Co., Ltd. achieved annual total operating revenue of RMB 185.7 billion, thus overfulfilling the annual task of production and operations.

In 2016, Baosteel Co., Ltd. produced billet steel of 23.74 million tons, sold 27.4493 million tons which included 14.5387 million tons of uniquely-owned advanced products and 3.324 million tons of export products.

Total energy consumption throughout the year was 13.23 million tons of coal equivalent, which was 67,000 tons of coal equivalent less than the annual objective; the comprehensive energy consumption per ton of steel was 603 kg of coal equivalent, which was 1 kg of coal equivalent less than the annual objective.

The annual investment ratio of R&D, sales ratio of new products and pilot production proportion of new products were 1.95%, 23.95% and 71.69% respectively in 2016; we applied for 801 patents, among which patents for invention accounted for 75.16%; direct new returns generated from R&D amounted to RMB 1.462 billion. The annual fixed-asset investment reached RMB 14.7 billion (Baosteel Zhanjiang Iron & Steel Co., Ltd. included).

In terms of capital market, as of Dec. 31, 2016, the stock price of Baosteel Co., Ltd. was RMB 6.35 per share, increasing by 13.80% as compared to that at the beginning of the year (during the corresponding period, the stock market index of A shares dropped by 12.31%).

In 2016, Baosteel Co., Ltd. won the title of the first batch of “National Advanced Unit in Greening” among domestic iron & steel enterprises, and was successfully selected by the United Nations as the first “Vanguard Enterprise in Achieving Sustainable Development Goals” in China. At the Second China (Shanghai) Listed Company Social Responsibility Summit and Release Conference of the Blue Book of Social Responsibility of Listed Companies in Shanghai (2016), Baosteel Co., Ltd. won the title of “Outstanding Enterprise Award”, and Dai Zhihao, the General Manager, won the “Outstanding Entrepreneur Award” at the summit.

In 2017, our production and operations was faced with great challenges and pressures. First, the contradiction that supply exceeds demand on the iron & steel market cannot be changed fundamentally in a short time. For the objective of dissolving the overcapacity of more than hundreds of millions tons of steel, there is a long way to go; Second, along with the formal establishment of China Baowu Steel Group Corporation (hereinafter referred to as “Baowu Group”), Baosteel Co., Ltd. merged with Wuhan Iron & Steel Co., Ltd. (short for WISCO) by absorption, so we desiderate to rapidly exert the synergy and scale effect of alliance between giants and rapidly enhance its sustainable profitability; Third, Baosteel Co., Ltd. is faced with huge cost pressure and other issues such as reduction in the steel output and increase in environmental protection cost in Baoshan Base, incurrence of some costs due to going into full operation of Zhanjiang Dongshan Base and other uncertainties as exchange rate fluctuation; Fourth, the Nanjing Meishan Base and Tube, Pipe & Bar Business Unit are weak in profitability and such production lines as the heavy plate and welded pipe lines have a very narrow margin of profit.

Our general management principles in 2017:

One body with two wings, synergy of four bases, reform and innovation to seek development

Differentiated competition, reforms in costs, being green and lean to gain better achievements

Our general operations objectives in 2017:

To keep its business performance at the top of the tree in China and Top 3 around the world for tons of steel

To reduce costs by more than RMB 6 billion in an all-around way

To generate synergy returns of over RMB 1 billion from the consolidation of Baosteel and WISCO

To make all-round profits at Baosteel Zhanjiang Iron & Steel Co., Ltd.

To increase labor productivity of regular employees by over 6%

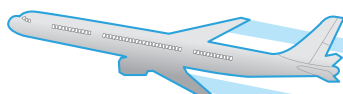


General Manager

Dai Zhihao

According to general requirements of the Group Corporation for Baosteel Co., Ltd. in 2017, we must focus on the following aspects to do the work well this year by focusing on our general management principles and general objectives.

- Promote consolidation and restructuring, and give full play to synergy effect. We must do a good job of consolidation and restructuring of Baosteel and WISCO, fully exploit its synergy effect, comprehensively optimize allocation of resources and enhance sustainable profitability. In the meantime, we need to further enhance the capability of technology in leading development, promote interaction among several bases and enhance manufacturing capacity, establish benchmarking system for four production bases as soon as possible, and form an internal virtuous circle for benchmarking improvement. In addition, we need to plan the IT-based framework for supporting the future operations of the four bases of Baosteel Co., Ltd. to provide support for multi-base synergetic operation.
- Focus on development of new products, lead the markets and users. We must adhere to the leading role of technology, and provide users with refined steel products with stable quality and reasonable cost and integrated solutions of materials. In addition, we need to give greater impetus to the R&D progress of firstly launched products and original technologies of all teams, intensify the industry-university-research-application cooperation, explore and establish the R&D mode of synergy between the Research Institute and localized technology centers, speed up transfer and coverage of core technologies, and give full play to the radiating effect of superior R&D resources of the Research Institute and Baoshan Base factories and departments.
- Intensify multi-base synergy and realize stable and high-efficiency manufacturing. For Baoshan Base, it is necessary to further strengthen whole-process control and improve manufacturing capacity. For Meishan Base, it is necessary to establish a stable and controlled production and operation system, and continuously improve the standardization and refinement level of such links as technology, management, field operation, and equipment operation & maintenance. For Dongshan Base, it is necessary to improve all production and technical indicators overall, and exploit potential points of cost improvement. The Tube, Pipe & Bar Business Unit needs to further expand markets and improve business performance.
- Adhere to the cost reduction objective, improve the cost competitiveness. We must constantly exploit new cost reduction items and potential points, promote in-depth expansion of cost reduction, and ensure no bounce-back of all costs on year-on-year basis and no degradation of indicators, so as to provide effective support for the Company in achieving its overall business performance objectives.
- Pay close attention to environmental improvement in building urban steel mills. For Baoshan Base, it is necessary to improve the process performance of environmental protection and system capacity in an all-around way and solidly promote improvement in reaching new standards of environmental protection and supervised clean air program. For Meishan Base, it is necessary to promote the landing of such environmental protection and greening projects as "upgrading" of the front area of the factory and "improvement" of the north area, propel the pollutant emission reduction, and strengthen sorting and control of risks related to waste gas and waste water discharge; for Dongshan Base, it is necessary to exert all strength to push forward the inspection and acceptance of environmental protection of the second blast furnace system, improve the environmental management system and system certification, broaden the channel for social comprehensive utilization, and improve the utilization value of secondary resources.
- Give play to the edge of variety competition and consolidate the role as the market leader. We must continue improving and optimizing the multi-base operation mode, do a good job of production organization of multiple bases; continually optimize our product structure, ensure and improve the market shares of quality steel; further enhance product development management, and promote the collection and transfer of new product demand and implementation efficiency of new product development requirement according to the demand for new products and the demand for use technology research.
- Innovate the human resources mechanism and trigger the vigor of the staff team. We need to carry out human resources top-level design in combination with the progress of consolidation and restructuring of Baosteel and WISCO and centering on the multi-base human resources management mode, explore diversified means of improving full-coverage labor efficiency, innovate the salary and welfare incentive mechanism and build the core talent team.
- Vigorously promote smart manufacturing with pilot projects as an impetus. For Baoshan Base, it is necessary to actively promote such renovation demonstration projects as operation in front of blast furnace and automation of cold-rolled products packaging by robots and construction and putting into operation of smart procurement platform. For Meishan Base, it is necessary to continue promoting production projects of intelligent centralized control over key areas and modular production of key processes. For the Tube, Pipe & Bar Business Unit, it is necessary to continue promoting the industrial robot and intelligent detection, and try to make breakthroughs in such technologies as product identification and tracking one by one, end-to-end personalized service for strategic users, surface detection of steel pipe under hot state and automatic thread judgment.



ABOUT THIS REPORT



Our Commitment

The Board of Directors of the Company and all its members guarantee that this Report is free from any false records, misleading statements or major omissions, and hereby undertake individual and joint liabilities for the authenticity, accuracy and completeness of the information contained in this Report.

Basis of the Report

This Report is compiled mainly based on Global Reporting Initiative (GRI) Sustainability Reporting Guidelines (Version G4) and Guidelines on Corporate Social Responsibility Reporting for Chinese Enterprises (CASS-CSR2.0). Meanwhile, the Report is compiled by making reference to the following documents including 2009 Report Work Memos of Listed Companies No. 1-Compilation and Deliberation of Internal Control Report and Corporate Social Responsibility Report issued by Shanghai Stock Exchange, the Guidance for Compilation of Report of Company Performance of Corporate Social Responsibility, the Notice on Strengthening Undertaking of Social Responsibility by Listed Companies and Issuance of Guidelines of Shanghai Stock Exchange on Environmental Information Disclosure of Listed Companies, Worldsteel Sustainability Indicator Reporting Guide 2014 and World Bank Eco2cities Sustainable Framework.

Scope of the Report

Unless otherwise specified, this Report mainly describes such business operations as economic, environmental and social work of all production units for the main steel business of Baosteel Co., Ltd. (including the Company Headquarters, the Tube, Pipe & Bar Business Unit, Shanghai Meishan Iron & Steel Co., Ltd., Baosteel Zhanjiang Iron & Steel Co., Ltd., Baosteel Huangshi Coating Sheet Co., Ltd., Baosteel-NSC/Arcelor Automotive Steel Sheets Co. Ltd.) and such organizations as the Baosteel Central Research Institute, Shanghai Baosteel International Economic & Trading Co., Ltd, Shanghai Baosight Software Co., Ltd. and Shanghai Baosteel Chemical Co., Ltd. from Jan. 1, 2016 to Dec. 31, 2016.

CNY is adopted as the unit of the financial data in this Report. For the purpose of convenient reference, you may use the exchange rate of 1USD=6.9370CNY for calculation (as per the benchmark exchange rate issued by the People's Bank of China on Dec. 31, 2016). If euro is adopted, it is recommended using the exchange rate of 1EUR=7.3068 CNY for calculation under the same standard.

Text Language and Issue Form

This Report is published in both Chinese and English. In case of any discrepancy between the two versions, the Chinese version shall prevail.

This Report is issued to readers in print and PDF electronic document formats. The PDF file can be downloaded and read from the website of Baosteel Co., Ltd. (<http://www.baosteel.com/>). To reduce impact on environment, we advocate that readers may download and read the electronic version as far as possible and we are going to reduce the quantity of printed version year by year.

Recycled paper is adopted for the printed version of this Report. In order to save the use of paper, we control the length of the Report to the greatest extent. For more information that is not included in the Report, you may visit the website of Baosteel Co., Ltd. or read the annual financial statements of the Company.

In case of any question about the content of this Report, please contact us by phone or letter at the following address:

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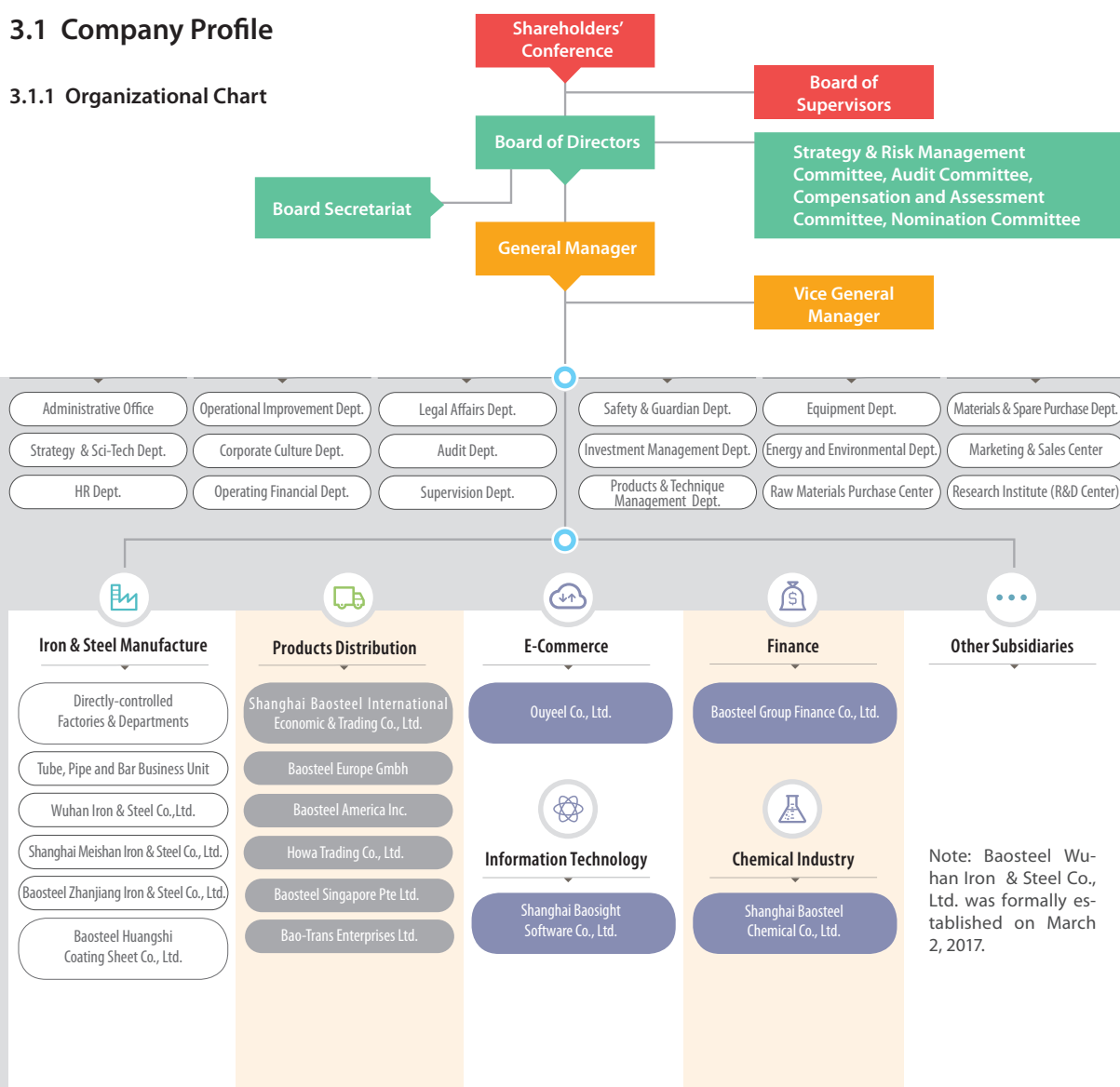
Fax: 0086-21-26649000

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COMPANY OVERVIEW

3.1 Company Profile

3.1.1 Organizational Chart



3.1.2 Controlling Shareholders and Actual Controllers

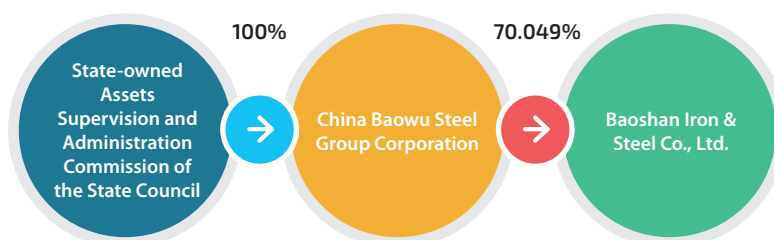
Description	China Baowu Steel Group Corporation
Unit leader or legal representative	Ma Guoqiang
Date of establishment	Jan. 1, 1992
Principal businesses and operations	Baowu Group is a government authorized investment organization and a state-owned holding company, mainly operates state-owned assets within the scope of authority of the State Council, and conducts relevant investment businesses; iron & steel, metallurgy & mining, chemical engineering (dangerous goods excluded), electric power, wharf, storage, transportation, businesses related to iron & steel, and technology development, technology transfer, technical service and technical management and advisory service, import and export business approved by the Ministry of Foreign Trade and Economic Cooperation, domestic and foreign trade (except those specifically specified) and service thereof.
Stock rights of other listed companies at home and abroad which Baowu Group as controlling shareholder and stakeholder	According to the report data of listed companies in 2016 Q3, Baowu Group directly or indirectly holds above 5% stock rights of other listed companies as following: Bayi Iron & Steel (50.02%, A-share), SGIS Songshan (53.37%, A-share), China Pacific Insurance (14.93%, A-share) and New China Life Insurance (15.10%, A-share).
Description of other situations	N/A

Controlling shareholders and actual controllers

Its actual controller is the State-owned Assets Supervision and Administration Commission of the State Council.

Changes in controlling shareholders and actual controllers

There was no change in the controlling shareholder or the actual controller during the reporting period.



Other institutional shareholders with more than 10% shares

As of the end of the reporting period, there is no other institutional shareholder with more than 10% shares of Baosteel Co., Ltd.

After the reporting period, in 2017 Q1, Baosteel Co., Ltd. took over WISCO through a share swap. As of the end of April 2017, the shareholding ratio of Wuhan Iron and Steel (Group) Corporation Limited reached 13.49%.

3.1.3 Changes in Share Capital

Refer to the annual financial report of Baosteel Co., Ltd. for changes in its share capital, and no more information is given here.



3.2 Business Ethics and Values

Core values: Sincerity & Coordination

Sincerity: be loyal and keep faith. The Company and its employees shall be loyal to the motherland, people, enterprise and mission; and keep faith with investors, shareholders, users and suppliers. The Company shall keep faith with its employees, employees shall be loyal to the Company, and employees shall keep faith with each other.

Coordination: to achieve a common goal shoulder to shoulder. Coordination contributes to effective integration of enterprise resources, giving play to the effect of integration, and realizing the maximization of overall profits and the integral value.



3.3 Key Performance Indicators

3.3.1 Operating Indicators

As of end of 2016, main product data and operating revenues are as shown in the table below:

Monetary unit: RMB 100 million

Item	2016	2015
I. Total operating revenue	1857.10	1641.17
II. Total operating cost	1755.95	1634.02
Including: operating cost	1618.51	1492.58
Selling expenses	22.68	21.53
Management cost	75.88	72.87
Financial expenses	21.86	23.93
Asset impairment loss	9.81	15.78
Investment income	13.77	10.38
III. Operating profit	115.95	17.59
IV. Total profit	115.20	17.63
V. Net profit	92.05	6.46

3.3.2 Social Contribution Value per Share

In 2016, social contribution value per share of Baosteel Co., Ltd. is RMB 1.958 per share:

	Basic earnings per share: RMB 0.544 per share
+	Tax revenue to the country within the year: RMB 0.669 per share
+	Salary paid to employees: RMB 0.608 per share
+	Interest on borrowings paid to creditors such as bank: RMB 0.136 per share
+	Value created for other stakeholders such as external donation: RMB 0.001 per share
-	Other social cost caused by environmental pollution, etc.: RMB 0 per share
	Social contribution value per share: RMB 1.958 per share



SUSTAINABLE DEVELOPMENT MANAGEMENT



4.1 Connotation of Sustainable Development Management

Our Mission

Creation beyond vision

Sustainable development vision

To be the leader in iron & steel technologies

To be the best practitioner of environmental friendliness

To be a corporate model of mutual development of employees and the company

Basic connotation of sustainable development

To be the leader in iron & steel technologies;

Establish the leading position in terms of iron & steel technologies, and improve the value contribution of technical innovation.

To be the best practitioner of environmental friendliness:

01. Strictly observe national energy conservation and environmental protection laws, regulations and standards and perform the international environmental convention. Complying with environmental protection laws and regulations is our minimum standard;

02. Implement the strictest internal control standards, improve production processes, optimize the energy structure, reduce energy consumption, lower energy cost, and continually reduce the energy consumption and environmental impact by the enterprise and in the course of product use;

03. Ensure that no substance harmful to the environment and health which is prohibited by relevant laws and regulations is added deliberately. Meanwhile, reduce the harmful impact on the environment caused by products within their service life;

04. Promote the reduction, reuse and reclamation of industrial wastes and help the cyclic utilization of urban wastes;

05. Give priority to suppliers and subcontractors with good environmental protection performance, improve the consciousness and performance of suppliers in terms of sustainable development, actively provide green solutions for customers, and devote itself to jointly building a green industrial chain;

06. Promote continuous improvement of partners in terms of energy conservation and environmental protection management and performance, issue product environmental statement based on life cycle assessment, publicize the environmental performance of core products to facilitate customers and other interested parties to compare impact during full life circle of different products;

07. Develop and promote products and systems with high energy efficiency and high resource efficiency, propel the R&D and promotion of energy conservation and environmental protection technologies to share with users advanced environmental design concepts and technologies, and provide the society with products and services with excellent environmental performance;

08. Keep a watchful eye on climatic change, take an active part in domestic and overseas energy conservation and environmental protection exchange and cooperation, improve the ecological environment on the earth; actively cooperate with governments, enterprises and conduct international cooperation, carry out popularization and application of international research achievements, and achieve synchronous development with advanced energy conservation and environmental improvement technologies of various countries;

09. Improve the awareness of environmental protection and ecological harmony among employees, and promote environmentally friendly behaviors of employees in terms of work, life, social participation, etc.

10. To be an urban steel mill jointly building wonderful life

- Actively respond to urban ecological red line protection and planning implementation, continue to improve the ecological landscape of industrial park, and synergistically improve the local environmental quality;
- Actively respond to the city's development strategy of resource conservation and environmental friendliness, and implement positive mechanism for controlling the amount of resource consumption and pollution reduction;
- Get into the swing of urban ecological civilization construction, and become an integral part of city service function and industrial culture;
- Get into the swing of community co-construction, pay close attention to the opinions and requirements of interested parties, and seek harmonious development.

To be a corporate model of mutual development of employees and the company:

01. Taking responsibility jointly: the enterprise and employees share joys and sorrows and jointly shoulder the responsibility related to employees' growth and development; employees and the enterprise are a community of common destiny, and jointly shoulder the responsibility of enterprise in facing up to challenges and seeking sustainable development. Taking responsibility jointly is an important basis for mutual development of employees and the company.

02. Co-creating value: the enterprise provides a stage and environment to help employees realize the value of life; employees make contributions to the enterprise to help the enterprise realize value maximization. Co-creating value is a prerequisite for mutual development of employees and the company.

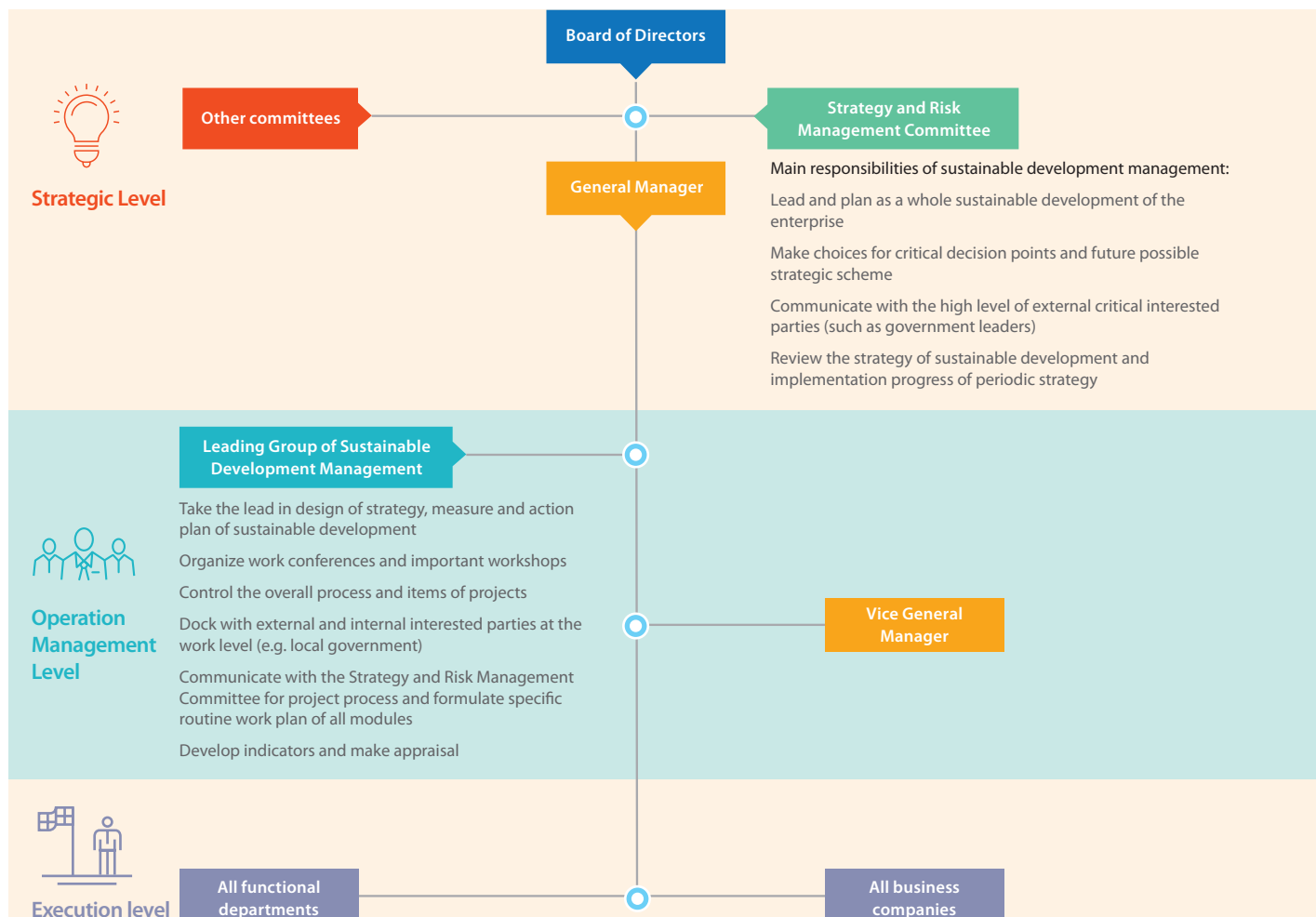
03. Sharing achievements: the enterprise and all employees creating value share development achievements, and the enterprise meets the material and cultural needs of its employees; employees and the enterprise share individual contributions and achievements to meet the needs of enterprise for improving operation performance. Sharing achievements is the internal impetus for mutual development of employees and the company.

04. Mutual promotion: the enterprise provides resources and platforms to promote improvement in skills and quality of employees; employees inspire their potentials up to the hilt to promote realization of the strategic target of the enterprise to improve capacity. Mutual promotion is the goal of mutual development of employees and the company.



4.2 System Support Related to Sustainable Development

4.2.1 Organizations for Sustainable Development



4.2.2 System Guarantee of Sustainable Development

Environmental Management System	ISO 14001
Energy Management System	ISO 50001 (GB/T 23331), GB/T 23331-2012
Quality Management System	ISO 9001, QS 9000, ISO/TS 16949
Occupational Health and Safety Management System	OHSAS 18001 (GB/T 28001)
Metering Management System	ISO 10012-1, ISO/IEC guideline 25, ISO/IEC 17025
Hazardous Substance Processing Management System	QC080000 (IECQ_HSPM):2012
Carbon Trading Pilot System	Baosteel Co., Ltd. started carbon emission permit trading since 2013.
Company Supervision and Integrity Management System	Baosteel Co., Ltd. improves the responsibility system, deepens source control and strengthens supervision system construction.
Clean Production Audit	The HQ of Baosteel Co., Ltd. passed the new round of clean production assessment and acceptance.

Note: Baosteel Co., Ltd. (HQ) passed certification of ISO14001: 2015 new standards in 2016.
Baosteel Co., Ltd. (HQ) passed certification of ISO9001: 2015 new standards in 2016.

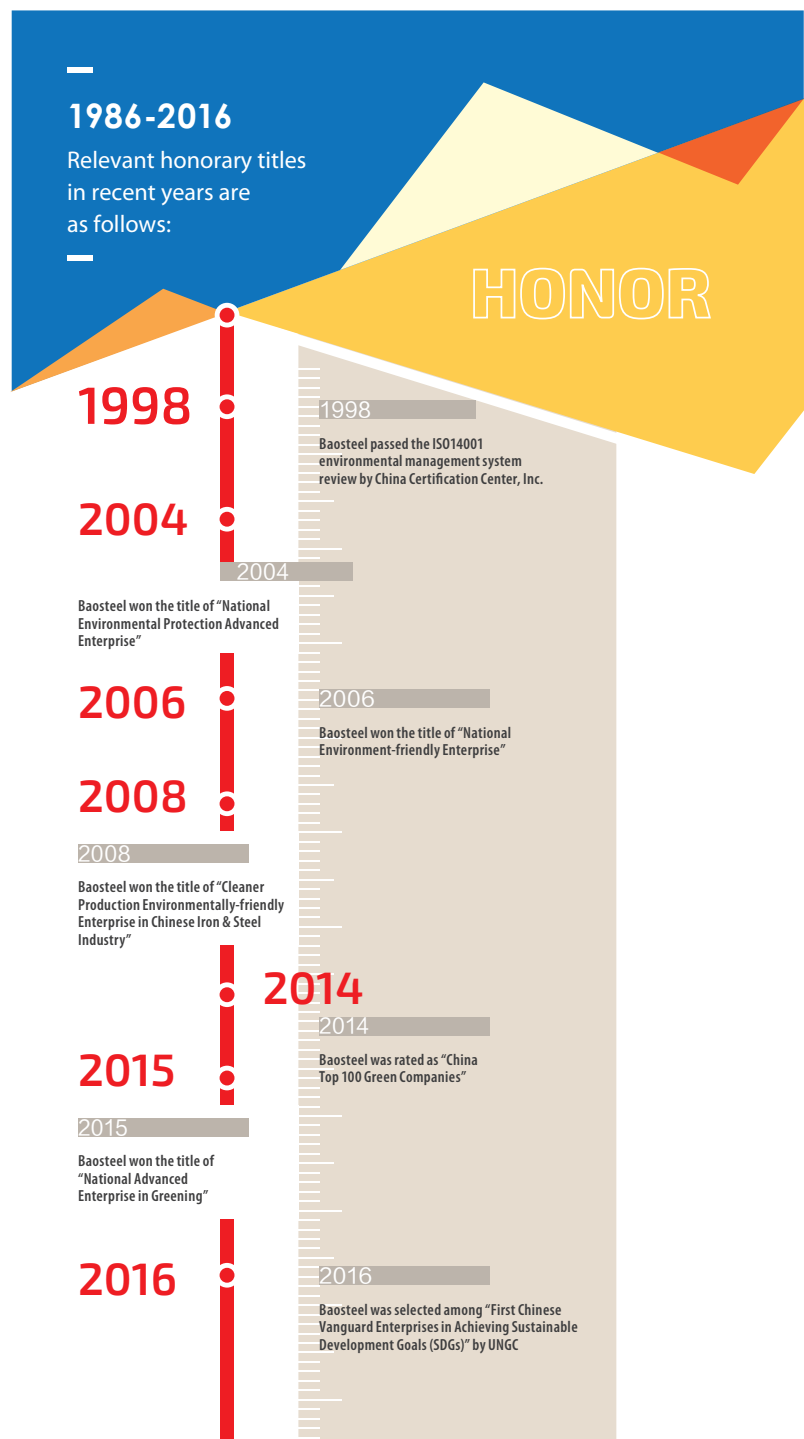
4.2.3 Training Guarantee of Sustainable Development

To support the implementation of urban steel mill planning, in 2016, Baosteel Co., Ltd. launched urban steel mill-series special trainings for Baoshan Base, all subsidiaries and units. Totally four trainings were provided, with contents covering the proposing, development and understanding of "Urban Steel Mills" and multiple aspects including the operation, construction technology and means of "Urban Steel Mills". The number of trainees was up to 234 person-times.



4.3 External Recognition of Sustainable Development

In the Chinese metallurgical industry, Baosteel Co., Ltd. was the first to pass the ISO14001 environmental qualification certification and is one of the first batch to pass (national energy management system standard) GB/T23331-2009 certification in 2010. Baosteel Co., Ltd. is among the first batch awarded titles such as "National Environment-friendly Enterprise", "Cleaner Production and Environment-friendly Enterprise" in the Chinese iron & steel industry and "Green Company in China" by the China Entrepreneur Association.



Major award titles of Baosteel Co., Ltd. in 2016

Major event/title	Granting organization
Highest credit rating in global iron & steel industry	Three rating agencies: S&P, Moody's and Fitch Ratings
Being selected among First Chinese Vanguard Enterprises of "Achieving Sustainable Development Goals (SDGs)" by UNGC	UNGC
Winning the title of "National Advanced Enterprise in Greening". Only two enterprises in the iron & steel industry received this honor.	National Forestation Commission, Ministry of Human Resources and Social Security and State Forestry Administration

Besides, as an important holding company of Baosteel, Baosteel Co., Ltd. made tremendous contributions to Baosteel in winning the following honors.

Major event/title	Granting organization
Being honored as "China Charity Award · Most Caring Donation Enterprise" (9th)	Ministry of Civil Affairs of the People's Republic of China
Selection into Top 500 in consecutive 13 years, ranking 275th	Fortune
Ranking 57th in Top 500 Chinese enterprises in 2016	China Enterprise Confederation, China Enterprise Directors Association
Ranking 5th in "Shanghai Top 100 Enterprises"	Shanghai Enterprise Confederation, Shanghai Enterprise Directors Association, Shanghai Federation of Economic Organizations
Ranking 12th in "Most Appreciated Chinese Companies" in 2016 (the only company in the iron & steel industry)	Fortune
Selection into Top 500 in consecutive 13 years, ranking 275th	WORLD STEEL DYNAMICS

4.4 Disclosure of Supervision Information



Baosteel Co., Ltd. strengthens process management and control and environmental risk management and control. Reaching standard of the process of on-line discharges of key pollution sources reached 100% and there was no significant environmental risk event throughout the year.



GREEN STEEL

In the new round of planning, the Company further proposed the strategy of “green, quality goods and smart manufacturing” and “building an urban steel mill characterized by city-industry integration, ecological friendliness and harmony”, which is focused on five capacities (cost reform, technology leadership, service first, smart manufacturing and urban steel mill), so as to gain the new developmental impetus of building a world first-class steel company.

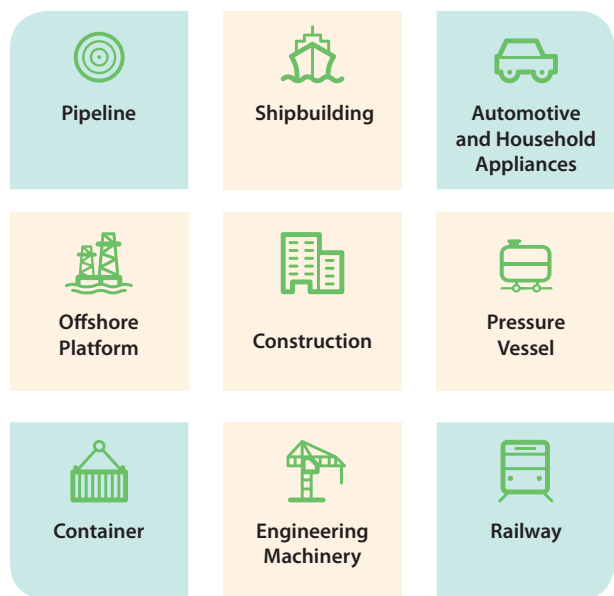
5.1 Green Products

5.1.1 Green Steel Products

Baosteel Co., Ltd. actively seeks the green development and low-carbon solution for the entire industrial chain. The Company specializes in production of such super-quality steel products as carbon thin steel, heavy plates and steel pipes with high technical content and high value-added. In addition, the Company has formed the strategic product group represented by high-grade automotive sheet, highly efficient and high-grade non-oriented silicon steel and oriented silicon steel with low temperature and high magnetic induction and tin plate packing material. Meanwhile, it occupies a leading position in such five domestic carbon steel product markets as cold rolled, hot rolled, heavy plate, steel pipe product markets.

Product structure

Baosteel Co., Ltd. owns domestically leading products of series: such main varieties as automotive steel and silicon steel occupy the leading position in the domestic high-end markets. The quality control level is among the forefront of the industry. Partial varieties including cold-rolled super-strength steel have reached the international leading level and some varieties have realized first launch around the world.



First launch of new products and cases of new products

In 2016, the sales rate of new products of Baosteel Co., Ltd. reached 24% and the development volume of new products amounted to 647,000 tons. The proportion of pilot production of uniquely-owned products was 71.7%, and the volume of uniquely-owned new products reached 464,000 tons. Such four products as high-magnetic induction oriented silicon steel B27R080, B27R080, 800MPa-level cold-rolled ferrite light-weight steel (HC420/780DTR5), super-high strength steel for oil pipe (CT110) realized first launch around the world.

Green products of Baosteel

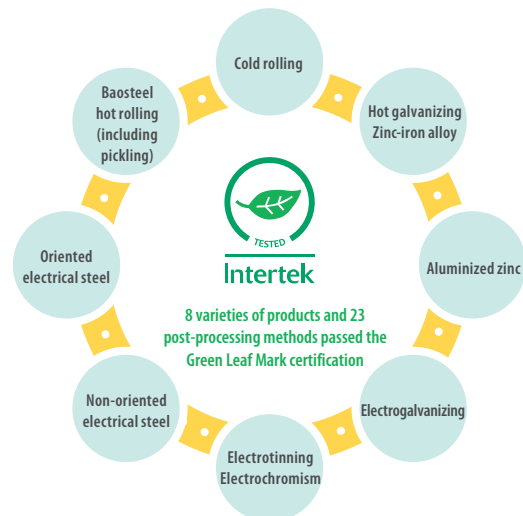
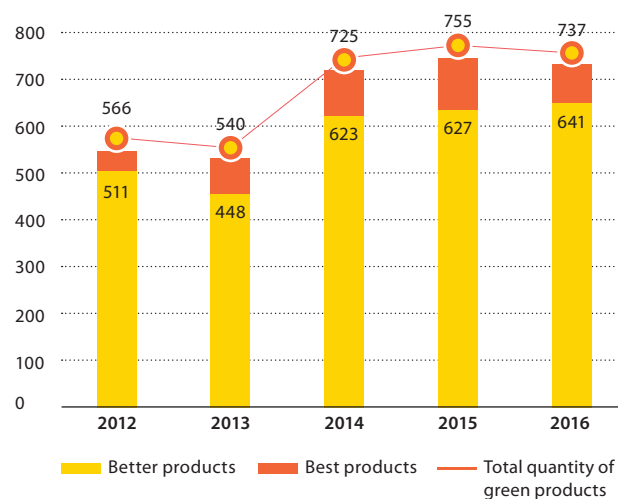
Baosteel Co., Ltd. pays close attention to the green demands of users and industry development trends, develops and popularizes products and systems with high energy efficiency and high resource efficiency, shares with users advanced environmental design concepts and technologies, and provides the society with products and services with excellent environmental performance; the Company issues product environmental statement based on life cycle assessment, publicizes the environmental performance of core products to provide objective data for comparison of environmental performance between the same products in the same industry and between different products from different industries.

For various products it sells, Baosteel Co., Ltd., based on assessment of environmental protection, control of poisonous and harmful substances, energy efficiency and resource utilization efficiency, and product life, packaging and recovery, selects third-party companies to conduct green product certification. All eight varieties of products of complete series of Baosteel Co., Ltd. passed the Intertek Green Leaf Mark certification. (Note: Intertek is one of the largest consumer goods testing, inspection and certification companies.) Meanwhile, Baosteel Co., Ltd., based on the environmental performance of products, divides products into BEST, BETTER and BASE types.

Defining green products (namely environmentally-friendly products)

Connotation	Saving energy, reducing consumption and emission, not harmful to environment and human body throughout the full life circle of product. (manufacturing, transport, use, recycling, reuse and discarding)
Extension	A series of additional benefits provided for users (ecological service, green solution and improvement in local and social environment, etc.)
BEST (cutting edge) type: superior environmental performance, internationally leading	
BETTER (good) type: good environmental performance, domestically leading	
BASE (basic) type: comply with environmental protection laws and regulations of various countries	

Sales of green products (Unit: 10,000 tons)



Typical green products

Baosteel Co., Ltd. uses the management method of full life circle of steel products and actively develops “environmentally-friendly products” represented by such high-efficiency steel as electrical steel, high-strength steel, coated and galvanized products and high weather resistance products to reduce the steel usage amount of downstream users, extend the steel service life and improve the utilization efficiency of social resources. The products are widely used in such green energy fields as solar energy, nuclear power and wind power generation and other fields such as automotive, food packaging and railway carriage.

Electrical steel

Electrical steel is mainly divided into highly efficient non-oriented electrical steel and high magnetic induction oriented silicon steel.

The iron cores of electric motors made from highly efficient non-oriented electrical steel instead of traditional electrical steel are characterized by obvious decrease in no-load current, improvement in motor efficiency and improvement in comprehensive operating indicators. Oriented silicon steel is the ideal material for iron core used for low-energy-consumption transformer. Oriented silicon steel is one of the varieties with the greatest difficulty in manufacturing among iron & steel products. The capacity of producing oriented silicon steel is an important sign of measuring the manufacturing level of a steel enterprise.

High strength steel plate (AHSS): weight reduction and energy saving

High strength steel plate, characterized by high strength and long life, is a kind of sustainable green product. If high strength steel is used for automobile manufacturing, not only materials can be saved but also impact passive safety of automobile can be improved. Therefore high strength steel is the preferred material of automobile “weight reduction and energy saving”. According to studies by the World Steel Association, take the typical model of five-seat familiar car (car body weight of 360kg) for example, the car body weight can be reduced by 9% and CO₂ emission can be reduced by 2.2t/car if AHSS is used, which is equivalent to the CO₂ emission produced by manufacturing the steel for a car.

High weather resistance products: low-carbon and weather-resistant

The high weather resistance products of Baosteel are widely used in manufacturing containers, railway carriages and automobile carriages.

The new high weather resistance steel products researched and developed by Baosteel, under the same weather-resistant conditions, have higher strength; thus, high-strength emission reduction of containers are achieved, and the energy conservation and emission reduction of containers during service is improved.



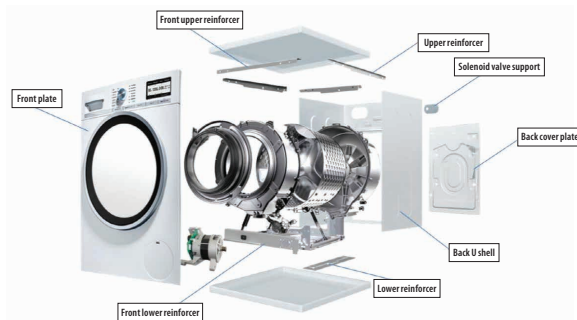
5.1.2 Green customer solutions

Solutions based on customer demand

Baosteel Co., Ltd. gives full play to the technical advantages of green steel products in R&D, forming, analysis and research into users' application technology, focuses on such aspects as technical service, product expansion, early vender involvement (EVI), integrated solution (package arrangement) and win-win scheme to meet special demands of customers and touch customers. “Early Vender Involvement” refers to that the material manufacturer involves in the early R&D phase of the downstream users to fully understand requirements of the user for raw material performance, so that materials with higher performance and personalized service can be provided for customers.

[Case] Integrated solution for the roller washing machine field

Aiming at two requirements closely related to steel material, namely “green design” (light weight and use environmentally-friendly material) and “low noise and low vibration”, Baosteel launched the integrated solution for roller washing machine-based customers. Via “optimization of material selection”, Baosteel adopts new high-strength steel products for household appliances to conduct high-strength and lightweight design of roller washing machine, and weight of the roller washing machine is reduced by 15% structurally.



Sustainable customer service concept

Baosteel Co., Ltd., by following the sustainable customer service concept, actively follows up domestic and overseas changes in laws and regulations and growth of green demands of users, carries out various certifications and assessments for various products, and timely follows up the EU REACH directives, organizes internal assessments, updates and issues the REACH compliance statement for Baosteel products; besides, the Company grasps the dynamics of personalized demands of users, timely organizes the second-party certification and makes corresponding commitments. Nearly 20 users from six industries such as automobile, household appliances and electronics, metal packaging and container, energy, communication and transportation, power transmission and distribution and building are involved.

In recent years, Baosteel Co., Ltd. has successively organized the third-party product inspections and published 138 third-party inspection reports, with 8 varieties covered, such as pickling, cold rolling, hot galvanizing, electrogalvanizing, aluminized zinc and electrical steel. Results of the reports have shown that all products comply with laws and regulations of China RoHS, EU RoHS directive, REACH regulations, etc. In the meantime, the Company actively follows up the production schedule of Baosteel Zhanjiang Iron & Steel Co., Ltd., and simultaneously launches the assessment of compliance of the products of Zhanjiang Iron & Steel with green and environmental protection laws and regulations, publicizes to users the inspection results of compliance with environmental protection laws and regulations by the products to improve the credibility of the products of Zhanjiang Iron & Steel with regard to greenness and environmental friendliness. On the basis of publicizing to users the inspection results, the Company launches the work of printing green marks on product warranties and labels, constantly improves the green product system construction and prevents operating risks relevant to environmental protection-related laws and regulations.

5.2 Green Manufacturing

Baosteel Co., Ltd. stands on the three functions of whole-process integrated steel mills (manufacturing of steel products, energy processing and conversion and comprehensive utilization of resources), sticks to the principle of giving priority to resources utilization efficiency and cyclic utilization "3R" (reduction, reuse and recycling), constantly reduces the resource and energy consumption during production via seeking low-carbon process path with continuous improvement; based on the full life-cycle environmental management concept, from the source prevention, process management and control to end treatment, advanced production processes and pollution control measures are adopted in an all-around way and process management is strengthened so as to complete the production process of steel products with lowest consumption and minimum discharge.



5.2.1 Indicators of Comprehensive Utilization of Resources and Energy

Energy indicators

The level of comprehensive utilization of energy and resources of Baosteel Co., Ltd. has always been at the advanced level in the industry.

Main resource consumption in 2016

Type of Resource	Unit	Consumption
Finished product minerals of iron ore	10,000t	2365.8
Scrap steel	10,000t	92.1
Coal equivalent	10,000t	941.6
Natural gas	100,000,000 M ³	1.4
Outsourced electric power	100,000,000 KWh	28.52
Raw water	10,000 M ³	6272

Main energy indicators in 2016

Type of Resource	Unit	2014	2015	2016
Comprehensive energy consumption per ton steel	KGCE/T-S	624	606	603
Total recovered volume of complementary energy	10,000 TCE	121.6	126.9	135.3
Raw water consumption per ton steel	M ³ /T-S	4.4	4.2	4.1

Indicators of comprehensive utilization of by-product resources

Comprehensive utilization rate of by-product resources reached 99.2% and the back-to-production utilization rate of by-product resources reached 26.4%.

Schedule of management indicators of comprehensive utilization of secondary resources of Baosteel Co., Ltd.

Item	Unit	2011	2012	2013	2014	2015	2016
Comprehensive utilization rate	%	98.8	98.9	98.9	99.2	99.4	99.2
Back-to-production utilization rate	%	27.3	27.9	27.4	26.8	26.9	26.4

Compliance of hazardous wastes disposal

Baosteel Co., Ltd. constantly improves the compliance of hazardous wastes disposal process. Hazardous wastes disposal is entrusted to organizations with qualification of hazardous wastes disposal, putting on records with the environmental protection bureau is carried out, and traceability of safe disposal of all hazardous wastes is achieved. In 2016, the HQ of Baosteel Co., Ltd. produced various hazardous wastes of 12,100 tons and compliant disposal rate of hazardous wastes reached 100%.

To promote the urban steel mill building, Baosteel Co., Ltd. gives full play to potentials of solid wastes treatment and recycling. In 2016, the Company put 12,146 tons of paint buckets into furnace, including 3,173 tons of internal paint buckets and 8,973 tons of external paint buckets. Besides, Baosteel Co., Ltd. incinerated 240 tons of self-produced oily metallurgical wastes. Via a series of measures, the Company constantly promotes self-disposal to achieve zero waste of solid wastes. Throughout the year, more than 2,500 tons of metal materials were recycled.

Safe disposal of hazardous wastes

Item	Unit	2014	2015	2016
Safe disposal rate of hazardous wastes	%	100	100	100

5.2.2 Energy-saving Management and Carbon Emission Reduction

Baosteel Co., Ltd. closely follows the cutting-edge technologies of low-carbon processes in the iron & steel industry, and sticks to the constant improvement path of whole-process technical energy-saving, optimization of energy structure and productization of gas and chemical engineering. A wide range of advanced technologies in enhancement of heat transfer, recovery of low-grade complementary energy, fluid system optimization, industrial furnace energy-saving, etc. are adopted. The application scale of new energy (photovoltaic power generation) and the proportion of low-carbon fuel (natural gas) are being raised step by step.




Management of energy-saving



As for the energy saving and emission reduction, Baosteel Co., Ltd. promoted the energy management system of "energy flow, manufacturing flow, value flow and equipment status". In 2016, its electricity consumption reduced by 402 million kilowatt-hours, and the waste heat power generation increased by 72 million kilowatt-hours, and the discharge rate of fuel gas and oxygen hit a record high. In addition, it saved raw water of 1.728 million tons via reduction of loss in water pipe network.

Technical energy-saving

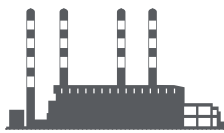
Baosteel Co., Ltd. applies the industrial BAT technology in an all-round and whole-process manner to constantly reduce the energy consumption during steel production. From 2011 to 2016, Baosteel Co., Ltd. put 141 energy-saving projects into operation in total, including 83 technical renovation projects and 58 EMC projects, including 96 power-saving projects (annual electricity saving quantity of 0.579 billion), 21 new waste heat recovery projects (annual afterheat steam recycling quantity increased by 1.08 million tons), 21 gas-saving projects (they are implemented by technical renovation channel mostly, with annual average natural gas saving quantity of 83.34 million m³) and three new energy projects (all of them are implemented by EMC, with installed capacity of 70MWh and annual generating capacity increased by 58 million kWh).



Process	Measures of application of energy-saving technologies and complementary energy recovery of key equipment
 Iron-making procedure	High-temperature and high-pressure dry quenching in coke oven and auxiliary power generation
	Coal moisture control technology for new coke oven
	Sensible heat recovery of raw gas of coke oven ★
	Sintering flue gas waste heat boiler
	Technology of waste gas ignition of sintering machine
	Technology of waste gas and hot air sintering of sintering machine
	Recovery of waste heat of cooling waste gas of sintered ore (power generation)
	Blast furnace dry dust removal and TRT power generation (#2/4 blast furnace)
	Dry granulation and sensible heat recovery of high-temperature melted slag ★
	Recovery of waste heat of flue gas of hot blast stove
 Steel-making procedure	Steel-making evaporation cooling OG system
	Mechanical vacuum pumping technology
	Electric furnace flue gas waste heat boiler
	Low-heating-value gas regenerative baking
	RH energy storage expansion optimization
 Captive power plant	Steel ladle capping
	Recovery of radiant heat of billet steel ★
	Transformation for energy efficiency improvement of boiler flue gas system of 3x350MW power plant

Process	Measures of application of energy-saving technologies and complementary energy recovery of key equipment
 Steel-rolling procedure	High-efficiency combustion technology of furnace (regenerative combustion technology, etc.)
	Air-gas preheating technology
	Alternative energy for technological energy-saving ★
	Recovery of waste heat of low-temperature flue gas
	Evaporation cooling of heating furnace
	Oxygen-enriched combustion of heating furnace
	High-temperature flue gas waste heat-based band steel technology
 Energy public & auxiliary facilities	Technology of recycling of disperse protective gas
	Inter-stage compression heat collection and utilization of air compressor ★
	Sensible heat recovery of smoke discharged from boiler
	Low-temperature waste heat-based seawater desalination technology used for strong brine treatment ★
	Recovery of waste heat for sludge drying ★
	Technology of accumulation of cold with ice in blast and oxygen production areas
	Such technologies as regional energy network ★
	Water supply by different quality and cascaded utilization of water resource
	Recovery of rainwater in the district and reduction in water intake quantity (Zhanjiang Base)
	Overall application of large water pumps and fan variable frequency driving
	Energy-saving LED lighting system
	Water supply by different quality and cascaded utilization of water system

Note: ★ standing for breakthrough technologies



Schedule of indicators of emission levels of pollutants of Baosteel

Item	Unit	2011	2012	2013	2014	2015	2016
SO ₂	KG/T-S	0.57	0.51	0.43	0.38	0.30	0.30
Smoke and dust	KG/T-S	0.46	0.48	0.47	0.45	0.38	0.33
NO _x	KG/T-S	/	2.05	1.93	1.51	1.34	1.34
Waste water	T/T-S	0.88	0.74	0.55	0.66	0.49	0.70
COD	G/T-S	26	28	27	27	16	22
Oil	G/T-S	1.0	1.0	1.0	1.0	0.6	0.7

Energy-saving technologies in the process flow

Baosteel Co., Ltd. adopts the smelting process energy-saving and energy substitution technologies to reduce the temperature reduction of melted iron and molten steel, optimize the rolling process, reduce the tapping temperature and time in the furnace, increase the proportion of grades of steel which can be transported under hot condition and hot transporting and hot charging to help explore the low-carbon process path.

[Case] With the thin-strip casting technology, molten steel can be directly cast into strip steel in only 25 seconds

In 2015, the thin-strip casting technology of Baosteel first made a stage pose at the "Sixth Baosteel Academic Annual Conference". It is learned that products produced by the first continuous thin-strip casting and rolling industrialized demonstration production line in China have been launched on the market in bulk and have been recognized by users. The entire rolling process only takes 25 second, and the energy consumption reduces by 80% as compared to traditional process.

Exploration and practice of low-carbon process path

Starting with the steel manufacturing process, Baosteel Co., Ltd. actively explores the whole-process technological energy-saving to response to low-carbon process improvement and carbon emission reduction.

[Case] Project of photovoltaic power generation on the mill roof

Currently, the total installed capacity of photovoltaic power generation of Baosteel Co., Ltd. (Meishan Steel included) reaches 90MWp, the annual power generation can be up to more than 70 million kilowatt-hours, which is equivalent to saving 24,000 tons of coal equivalent and reduction in carbon dioxide emission of 60,000 tons. Based on this technology, the Company continues to develop the Baosteel photovoltaic power generation resources (currently, the building integrated photovoltaic project on the stock yard OCOD2.4MWp has been approved and initiated) and explore the feasibility of further developing wind power generation resources.

5.2.3 Industrial Environment Control

In 2016, via various engineering, management and technical means, Baosteel Co., Ltd. constantly strengthened the environmental protection process management, discharge of pollutants was compliant and controlled roundly and main environmental protection indicators improved continuously.

Key control measures

Roundly responding to the national and local clean atmosphere action

The raw material yard of Baoshan Base, covering an area of nearly 1.9 million square meters, is the largest bulk raw material yard in Eastern China. As an active control project of Baosteel Co., Ltd. for reducing un-organized emission, the project of full enclosing of the stock yard was originally planned to be completed in six years (2014-2020). To respond to the plan of undertaking atmospheric controlling within a prescribed limit of time in the Yangtze River Delta region, the Company overcame various difficulties and shortened the construction period to four years. It is expected to be built in 2018. In 2016, 30 raw coal silos were put into operation as planned. Maximum storage of single silo is about 14,000 tons and the total effective storage is about 330,000 tons; The OC/OD enclosed framework yard is put into operation ahead of schedule. For single-sided material strip, the maximum pile width is 30.5m, maximum pile height is 18.2m and maximum storage is 575,000 tons.

Renovation of ultra-clean emission of three 350MW self-contained coal-fired generator sets of Baoshan Base is listed into the clean air action plan of Shanghai. Currently, the Company promotes the renovation as planned to ensure meeting the ultra-clean emission standards "5-35-50" (dust: 5mg/Nm³, SO₂: 35mg/Nm³, NOx: 50mg/Nm³) for thermal power generating units in a whole-time and whole-process manner.

The raw material enclosing project in Meishan Base has been launched in full swing in 2016.

Engineering application of industrial demonstration technology

Dongshan Base of Baosteel Co., Ltd. (Zhanjiang Iron & Steel) adheres to the highest starting point and the highest standard of environmental protection in construction, and takes the lead in independent engineering integrated application of cutting-edge exploration technologies and demonstration technologies of many industries. Environmental protection technologies such as comprehensive treatment of flue gas from large coke oven, integrated flue gas treatment of sintering, whole sealing of raw material system, metallurgical dust & sludge rotary hearth furnace, coking wastewater wetland treatment, sea water desalination as well as rainwater collection and reusing represent the most advanced environmentally friendly factory technologies of the present steel industry.

By utilizing a series transformation opportunities for sintering machines, the Baoshan Base comprehensively applies the integrated sintering flue gas treatment technology, and has realized "semi-dry process circulating fluidized bed desulfurization LSJ + series SCR denitration" of the existing 600m²-scale sintering machine unit, and newly built a new process demonstration route of integrated activated carbon treatment technologies. Utilizing the opportunity of Phase I coke oven transformation, Baoshan Base put the integrated coke oven flue gas treatment technology of the industrial demonstration nature into engineering application, and realized the first application of low-temperature desulfurization and denitrification technology in the industry.

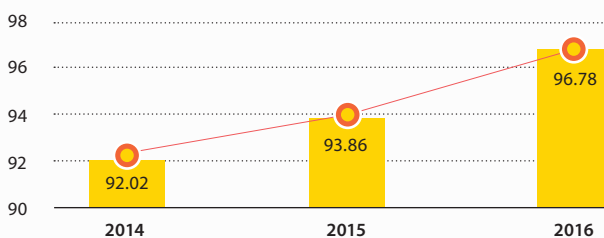
Effectively improve process control level of factory and ensure the stability and high efficiency of environmental protection facilities.

On the one hand, Baosteel Co., Ltd. constantly optimizes the production process and takes efficient pollution control means, and on the other hand, constantly improves the equipment operation and maintenance level, strengthens the process control level during production process, so as to ensure stable and efficient operation of environmental protection facilities. The Company prepared related environmental protection equipment management documents, and implement them in a strict manner. According to the characteristics and importance of various environmental protection facilities, control of various important environmental protection facilities (such as sintering desulfurization and denitrification plant, power plant desulfurization and denitrification plant, etc.) is strengthened, and their operation, maintenance and management are conducted with support of various professional teams, so as to constantly optimize the equipment operation status, and provide support for pollutant emission compliance and total emission reduction of the Company.

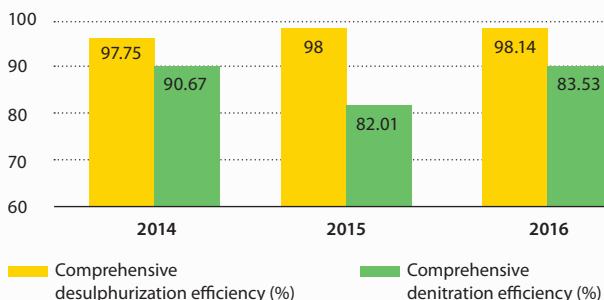


The figures below respectively show the annual comprehensive desulfurization and denitration efficiencies of the sintering machines and the generating set of Baosteel:

Comprehensive desulfurization degree of sintering machines (%)



Annual comprehensive desulfurization and denitration efficiencies of generating set



Note: the data of the Company in 2014 only includes the comprehensive denitration efficiency of 1# denitration unit.



Endeavoring to realize “zero waste” of solid wastes and byproduct resources of metallurgical plant

In recent years, the comprehensive utilization rate of solid wastes of Baosteel Co., Ltd. has kept higher than 99% basically, including more than 25% solid wastes for recycle. All granulated blast furnace slag is utilized in a comprehensive manner, of which more than 90% is utilized deeply as superfine slag powder. For steel slag, after metal extraction and being recycled, the remaining part is all used in cement, building materials, ships, etc. The iron-containing dust and sludge is recycled in blast furnace to the greatest extent. All pulverized fuel ash and gypsum are for comprehensive utilization in architectural material industry.

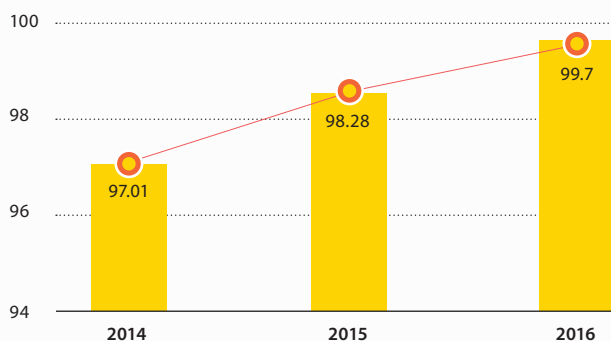
Based on the industrial experience at home and abroad, Dongshan Base (Zhanjiang Iron & Steel) built up a 0.2MMTPA rotary hearth furnace, which was put into operation simultaneously with the No. 2 blast furnace. The products with a metallization ratio of 50-60% can be used in the rotary hearth furnace and blast furnace.

Comprehensively improving industrial pollution source monitoring level and regional ecological environment monitoring level

Baosteel comprehensively promotes flue gas treatment and upgrade of on-line monitoring. Transformation of desulfurization and denitrification technologies is conducted on such processes as sintering and coke oven, and on-line monitoring facilities are provided for particles, SO₂ and NO_x. On-line monitoring for hydrogen chloride and non-methane hydrocarbon characterization factors is provided for incineration facilities. At the same time, the Company intensifies automatic pollution source monitoring and information disclosure, conducts all-factor monitoring on waste water, and monitoring Dioxin, mercury, fluoride and blackness on the basis of normal pollutant monitoring of waste gas. Baosteel receives social supervision via official website of the Company and by real-time publication of monitoring data to the public. Besides, the Company steadily promotes construction of on-line environmental protection management platform, establishes a centralized control center integrated with energy and environmental protection, and forms the E2MS management system. Through the 7*24h comprehensive monitoring system, the terminal control of environment is transformed into process control.

See the figure below for synchronous operation rate trend of the Company's key environmental protection facilities in recent three years:

Synchronous operation rate of key environmental protection facilities



Strengthening system construction and constantly improving environmental risk management level

In 1998, Baosteel Co., Ltd. became the first steel enterprise passing the ISO14001 environmental protection system certification in the steel industry of China. In 2016, under the framework of ISO14001 new environment management system and in combination with the new requirements for life cycle management, Baosteel organizes supplement of environmental identification factors, and revises the management documents of the Company related to environment factors. The Company integrates the life cycle concept into product design, material saving, purchasing, sales business, etc., and revises related professional management documents, so as to ensure the control over purchasing activities related to important environmental aspects.



5.3 Green Supply Chain

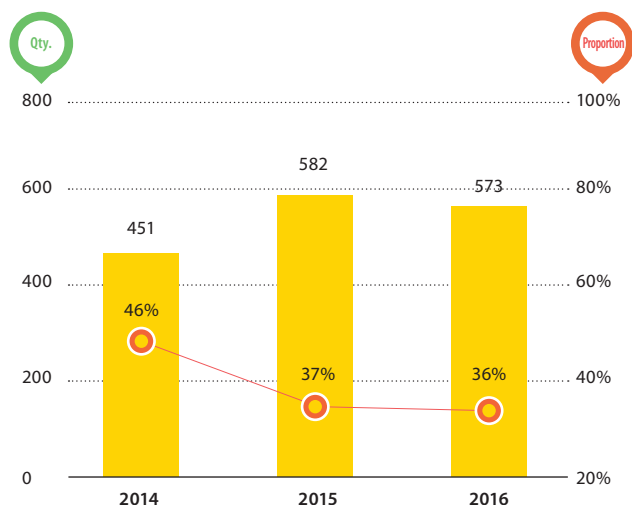
Baosteel Co., Ltd. implements environment-friendly management, and extends the environmental protection and sustainability concepts to all links of supply chains such as raw material supply and equipment procurement. Through formulating a series of procurement policies and advocating the concepts of resource saving, environmental friendliness and product life cycle value maximization, the Company delivers the concept of green operations to upstream/downstream enterprises, guides the suppliers to pursue civilized, healthy and clean production as well as coordinated development of economic benefits, environmental benefits and social benefits, and works with the suppliers together to build a green supply chain with vitality and responsibility sharing.

5.3.1 Management of Green Supply Chain

Green management of suppliers

Baosteel constantly propels suppliers to conduct certification of relevant environment management systems (e.g. ISO14001 environment management system). For introduction of new suppliers, the suppliers who have passed the environment management system certification will be preferred. For selection of a ship carrier, Baosteel requires that the carrier shall pass the ISM/NSM system certification or the carrier's ship must be managed by the ship management company certified by ISM/NSM system. In 2015, 100% of key carriers passed the ISM/NSM system certification. Meanwhile, during purchase of various materials, equipment and spare parts, the Company dynamically identifies green products and purchases them preferentially. In 2016, the ratio of green materials, equipment and spare parts purchased by the headquarters of the Company and Zhanjiang Steel was 5.5%.

Environment management system certification conditions of qualified suppliers of materials, equipment and spare parts for the headquarters of Baosteel Co., Ltd. and Zhanjiang Steel



Notes: Before and in 2014, qualified suppliers only refer to conventional suppliers; since 2015, qualified suppliers also include one-time suppliers (control level suppliers); therefore, the total number of qualified suppliers is increased greatly than before.

Sunshine procurement

Baosteel implements "sunshine procurement" strategy. Through signing honesty and integrity agreement, perfecting punishment means against adverse events, invitation for bids and procurement pursuant to law and promoting open purchasing, the Company and suppliers create an honest, fair, just and open supply chain environment jointly. As of the end of 2016, all 1,581 qualified suppliers of materials, equipment and spare parts for the headquarters of the Company in 2016 have signed an honesty and integrity agreement. In 2016, the amount of open purchasing of materials, equipment and spare parts for the headquarters of the Company and Zhanjiang Steel on the Internet reached RMB 2 billion, accounting for 19%.

E-commerce development

In 2016, Baosteel launched the upgrade and renovation project of purchasing and supply information system as planned. The latest information and technologies will be used in the upgraded system, so as to meet the new requirements of procurement management and support smart manufacturing of the Company. Meanwhile, for procurement of materials, equipment and spare parts, electronic collaboration of suppliers is continuously advanced. In 2016, the proportion of electronic tag application reached 62% of arrived goods, the proportion of electronic contracts increased to 95%, and that of uploaded electronic quality assurance certificates of important articles reached 33%.



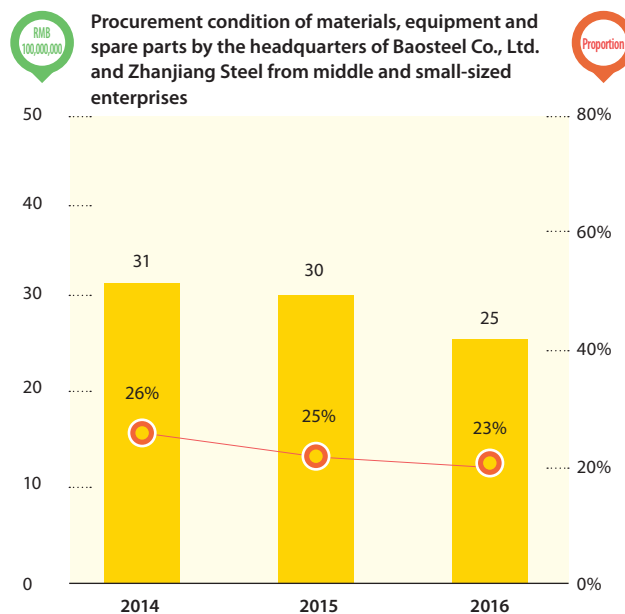
5.3.2 Promotion of Partner Development

Promotion of green development

Baosteel is committed to “becoming the driver of green industrial chain and the best practitioner of environmental friendliness”. For the partners in the supply chain, the Company selects some suppliers in better conditions for research and cooperation, evaluates their basic data about the environment based on the full life circle theory (LCA), gradually establishes the LCA database for environmental performances of the products supplied by the suppliers, regards the LCA evaluation results as the important reference for access of products, and gives priority to the products with good environmental performance. By this way, Baosteel provides basis for the green purchasing of the Company on the one hand and guides relevant partners in improvement of their green development level.

Improvement of partners' benefits

See the figure below for actual performance data of the materials, equipment and spare parts purchased by the headquarters of the Company and Zhanjiang Steel from middle and small-sized enterprises in recent three years. (The middle and small-sized enterprises are defined as those with a registered capital of not more than RMB 10 million.) ▶▶▶



5.3.3 Customer Service Innovation

In 2016, in order to implement the strategic target of “from manufacturing to service”, Baosteel constantly perfected service system construction, conducted certification of service quality, comprehensively planned and carried forward smart service projects such as automatic answer for inquiry and on-line processing of an objection to a product. Based on the “customer-focused” operation concept and focused on differentiated competitive tactics, Baosteel actively explore and carry forward the EVI projects of all industries. In the whole year, 57 EVI projects related to six industries (including automobile, household appliances and electronics, power transmission and distribution, metal packaging and containers, engineering/machinery and building as well as energy transportation) were advanced. Besides, in order to realize fast response to users' demands, the Company promotes departments of research & development, manufacturing and production to constantly improve their products and service quality, further strengthens track and management of the information related to users' demands and complaints, and intensifies the management of information collection and passing by channel departments, so as to know the dynamic conditions of market in time and understand the demand of user for new products.



See the table below for actual performance of customer satisfaction of 2012-2016 (by quarter)

Year	Target	Actual results of Quarter 1	Actual results of Quarter 2	Actual results of Quarter 3	Actual results of Quarter 4
2014	91	91.5	91.2	92.3	91.8
2015	91	92.4	92.6	91.9	91.8
2016	91	91.7	91.5	91.2	92.0



GOING WITH THE TREND

The year 2016 was the first year of implementation of the Thirteenth Five-Year Plan for National Economic and Social Development, and the development planning for urban steel mill in 2016-2021 developed by the Company was launched in an all-round way and was accelerated in implementation.

Against the general background of structural adjustment of domestic steel industry as well as dissolving overcapacity and cost reduction, Baosteel Co., Ltd. seizes opportunities of the market, ensures stable production, comprehensively implements cost reform, and thus creates outstanding operation performance in the industry. The Company further intensifies R&D of new products and technologies as well as industry-university-research collaboration, so as to constantly improve its product competitiveness. In combination with the strategy of China Manufacturing 2025, taking smart production line and smart factory as a point of breakthrough, the Company forcefully promotes smart manufacturing. The Company persists in being responsible to its shareholders and investors, and constantly develops investor relations by a series of human-oriented measures.



6.1 Main Actions

6.1.1 Research & Development of New Products and Technologies

Focusing on top-level design; deploying, promoting and planning implementation of key tasks

In 2016, aiming at the goal of making six kinds of strategic products including automotive sheet and silicon steel in the lead by at least one generation, the Company was focused on top-level design, laid emphasis on deploying the research and development of key strategic new products such as hot-galvanized alloyed QP steel with high elongation and oriented silicon steel with thin gauge and high energy efficiency, promoted breakthrough and application of key technologies such as coated iron technology and smart manufacturing technology in process innovation, and oriented optimization, arrangement and implementation in aspects such as project task deployment, funding and evaluation and incentives.

Optimizing research & development mechanism and further improving product research & development efficiency.

Taking “benefits and risks sharing” as a basic principle, Baosteel plans and implements the incentive plan for technology value-creation team. Composite board product value-creation team is selected as a pilot so as to use the composite rolling technology to the greatest extent to develop and expand the new product space of the Company. In 2016, the Company developed high-strength anti-corrosion composite checkered plate BHW01, and tried it on the coal injection platform of the iron works. From Jan. 2016 to Nov. 2016, the Company sold 3264.467t composite boards of all types in total, which met the diversified demands of various customers. The Company succeeded in mass production of the steel with thin coating and thin gauge (316L+Q345B(2+8/1.5+6.5x3000xL)) used for gas piping as well as batch production of super-austenitic stainless steel clad plates (S31254+Q345B(3+9/3+17mm)) used for gas piping of blast furnace.

Successful export of composite rolled plates of Baosteel

In Feb. 2016, Baosteel produced the composite rolled plates of 410S coating material for the first time, and realized supply for the first export contract of 272 tons of 410S+SA516Gr65 rolled steel clad plates. The rolled steel clad plate is new material integrating with composed property of multilayer functionality and base constitutive property, which can provide reliable material support for upgrading of multiple industries such as petroleum, chemical engineering, railway, bridge, building, maritime work, shipbuilding and power generation, and is one of the key breakthroughs of steel and iron materials of “China Manufacturing 2025”.

6.1.2 Forcefully Popularizing the Application of Energy-Saving and Environmentally Friendly BAT Technologies as well as Demonstration of New Technologies

In 2016, the Company implemented 74 environmental protection projects in total, which were focused on upgraded treatment of flue gas from sintering machine, coke oven and power plant, upgrading and renovation of process dusting facilities and furnace facilities (replacing old facilities with new ones), upgrading and updating of environment monitoring facilities, fugitive emission control and recycling of metallurgy wastes.

From 2011 to 2016, Baosteel put 141 energy-saving projects into operation in total, including 83 technical transformation projects and 58 EMC projects. Specifically, there were 96 power-saving projects (annual electricity saving quantity of 579 million), 21 new waste heat recovery projects (annual afterheat steam recycling quantity addition of 1.08 million tons), 21 gas-saving projects (they were implemented by technical transformation channel mostly, with annual average natural gas saving quantity of 83.34 million m³) and three new energy projects (all of them were implemented through EMC, with installed capacity of 70MWh and annual generating capacity addition of 58 million kWh).

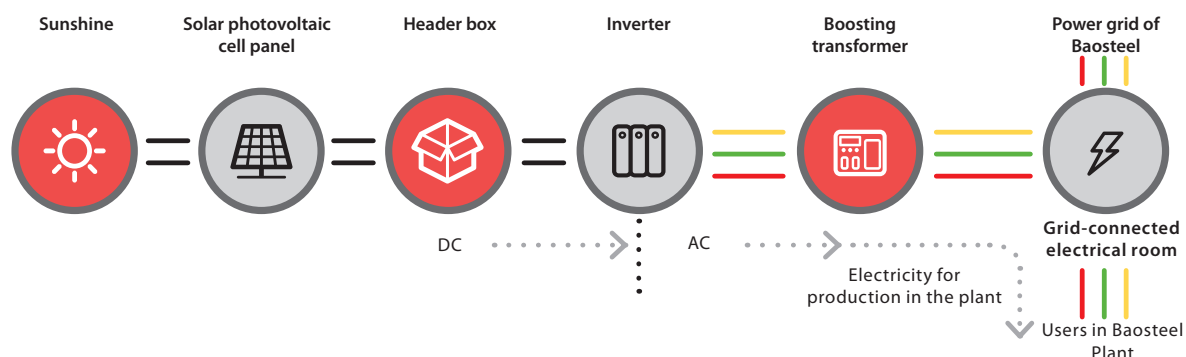
Sintering low-temperature waste heat power generation system of Baosteel

Baosteel has newly built an Organic Rankine Cycle (ORC) low-temperature waste heat power generation system and supporting facilities, which recycles the low-temperature exhaust gas residual heat from the exhaust funnel of 600m² sinter-circle-cooling machine and the surplus secondary low-pressure steam heat generated in the dual-pressure waste heat boiler, for low-temperature waste heat power generation. The project with the installed capacity of 3MW will be the first MW-level low-temperature waste heat ORC power generation demonstration project of China after completion. The predicated annual total generating capacity of this project is 2240x10⁴kWh, and the quantity of coal equivalent saved is 5,368t/a.



Clean energy demonstration base project

Baosteel Co., Ltd. comprehensively applies and promotes the plant roof photovoltaic power generation technology, and regards it as an important part of construction of “clean energy demonstration base of urban steel enterprise” of the Company. The total installed capacity of the roof photovoltaic power generation at Baoshan Base and Meishan Base has reached 90MW, which is the world’s largest roof photovoltaic power generation project at present, with annual power generation capacity up to 70 million kWh, which accounts for 20% of the total installed capacity of Shanghai. Besides, the Company is researching the feasibility of exploiting wind power generation resources further.



Upgrading and improvement of incineration facilities as well as "zero waste" utilization technology

In 2016, Baosteel conducted upgrading and improvement on the original oily sludge incineration facilities, which ensures all flue gas emission meets the new local standard (DB31-767-2013) of Shanghai. All incineration bottom ash is recycled as sintering raw material, thus realized dual results of clean production and resource recycling.

Treatment facilities for sintering flue gas and coke oven flue gas of Baosteel

In 2016, Baosteel implemented the integrated technology demonstration project of comprehensive flue gas purification for four 600m² sintering machines and two 7m coke ovens. The sintering machines purify flue gas by LJS+SCR and activated carbon adsorption technology respectively, so efficient emission reduction of SO₂, NO_x and Dioxin in flue gas is realized. The desulfurization and denitrification demonstration technology for coke oven flue gas makes the coke oven flue gas become the first to meet the special emission standard of the industry. The above engineering application plays a role of demonstration in the whole industry, and the purification efficiency is in the lead within the industry in the world.



Sintering flue gas treatment technology	Baosteel LJS+SCR	Activated carbon technology of Baosteel
Comprehensive desulphurization efficiency	>92%	>92%
Denitration efficiency	>85%	>80%
Dioxin removal	<0.1NG-TEQ/M ³	<0.1NG-TEQ/M ³

Coke oven flue gas treatment technology	Baosteel SDA+SCR
Desulphurization efficiency	>85%
Denitration efficiency	>80%
Concentration of NO _x at the outlet	<150MG/M ³
Concentration of SO ₂ at the outlet	≤30MG/NM ³
Concentration of particles at the outlet	≤15MG/NM ³

Steel slag processing center of Zhanjiang Steel

The iron-containing solid waste treatment center of Zhanjiang Base of Baosteel Co., Ltd. is provided with rotary hearth furnace, OG mud cold-compacted bulk, sludge homogenization, scale separation, etc. With diversified treatment means and securer results, maximized utilization of iron-containing sludge in the plant is thus realized. It is the first facility for iron-containing sludge treatment of the Company, of which the rotary hearth furnace can consume 200,000t iron-containing sludge in one whole year.



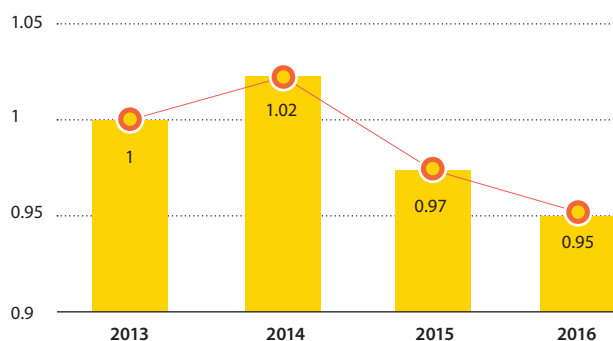
6.1.3 Carbon Management

Since 2013, Baosteel Co., Ltd. has actively participated in formulation of relevant policies and standards of Shanghai, organized technical exchange with related professional institutes, and taken part in the pilot work of carbon emission trading of Shanghai Municipal Government. Related carbon trading quota account, capital account and transaction account are registered as regulated by the Shanghai Carbon Exchange. The Company receives the carbon emission data check conducted by the third party every year, and completes quota settlement in time in June of every year. The Company issued the first edition of Measures of Baosteel Co., Ltd. for Carbon Asset Management. in Sept. 2014, which clarifies the internal carbon asset management process. Besides, it started the carbon cost accounting data system project in the fourth quarter of 2014, which strengthens the carbon emission data management.

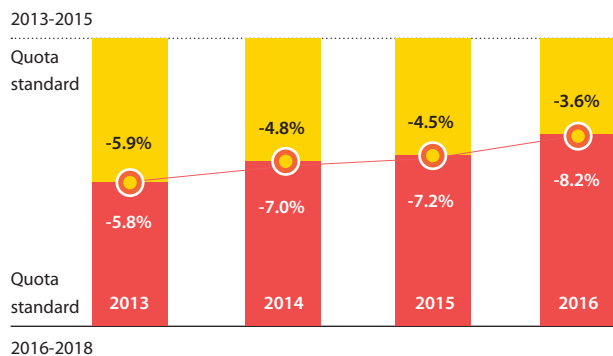
During Phase I of the pilot project (2013-2015), carbon emission of Baosteel decreased year by year, and the accumulated carbon emission was 5% lower than the carbon emission quota of Baosteel.

Since 2016, the uniform carbon market of China has been in substantial initialization phase, connection and mating of local carbon market and national carbon market are being accelerated, and the Company is in active cooperation in basic work such as preparation of various data for startup of national carbon market, and will participate in the national carbon emission market more actively. In the future, the Company will adopt multiple ways of carbon quota procurement such as CCER, agreement transfer, carbon market purchasing and compensation bidding flexibly, reduce the implementation cost of carbon trading, and conduct carbon asset management mode research project as a joint-stock company, so as to establish a unified carbon asset management mode.

Emission of CO₂ from 1t steel (on the basis of 2013)



CO₂ emission reduction rate (on the basis of the quota allocated by the government)



6.1.4 Strengthen Industry-University-Research Collaboration

Baosteel constantly pays attention to the reporting guidance for government projects, interprets related system of government projects, and actively integrates itself into the national innovation system. In 2016, the national fund support obtained by the Company exceeded RMB 36 million. Besides, the Company combines focusing on internal demands and identifying external advantages, so as to accelerate the industry-university-research collaboration. Based on the technological innovation development planning of Baosteel Co., Ltd. and the principle of "complementing each other's advantages, benefit sharing and mutual development", the Company further consolidates and deepens the development of industry-university-research collaboration. Focused on the advantageous fields of educational institutions and based on the demands of Baosteel for cooperation, a long-term stable scientific and technological cooperative relationship is established from a higher starting point and at a higher level.

[Cases of industry-university-research collaboration]

With Northeastern University: Planning is conducted by focusing on the on-line cooling equipment and automatic control system for seamless steel tube, and on-line cooling equipment has developed, which meets the control and cooling process requirements of hot-rolling seamless pipe; related automatic control system for hot-rolling seamless pipe has been developed; the on-line cooling equipment and control system meet the organization control demands of typical hot-rolling seamless pipe and product process development demands, and the organization control of structural pipes and pipeline tubes, performance improvement and on-line quenching of sleeve have been achieved.

With Anhui University of Technology: deep cooperation is carried out in technology fields such as energy conservation and environmental protection, comprehensive waste utilization technology, coking coal quality evaluation, coke chemical technology improvement and rolling technology; periodic progresses have been made in low-nitrogen fuel selection, NOX generation inhibitor research, seamless alloy tube wall shrinkage and medium-thick type longitudinal thickness tolerance control technology research.



6.2 Enterprise Competitiveness

6.2.1 Enterprise Investment

Research & development investment

In 2016, the R&D investment rate was 1.95%, the sales volume of new products was 23.95%, the proportion of pilot production of uniquely-owned products was 71.68%, there were ten new products launched initially and important technologies, ten high-tech achievements were accredited, and Baosteel applied for 801 patents, including 75.16% of invention patents and 31 international patent applications.

Investment in environmental protection

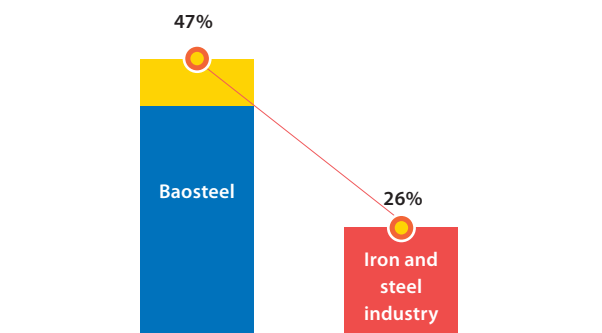
The environmental protection cost composition of the Company in 2016 is shown in the table below, including expense cost and capital cost, which are respectively RMB 23.87 and RMB 1.59 billion. C type closed transformation of material strips of OC and OD mine fields (Phase I and Phase II) as well as silo reconstruction and putting into operation of material strips of E and F coal yards were completed. The total proportion of environmental protection facility operation and depreciation cost in the expense item reached 75.1%.

Environmental protection cost category and environmental protection cost item

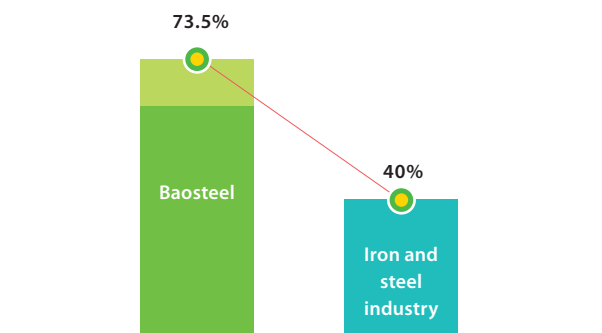
Environmental protection cost category	Environmental protection cost item
Expense item	Pollution discharge fee
	System audit fee
	Environment monitoring fee
	Operation cost of environmental protection facilities
	Depreciation cost of environmental protection facilities
	Environmental protection labor cost
	Transportation cost of harmful materials
	Afforestation fees
	Cost of solid waste disposal
	Investment in environmental protection improvement of new projects, transformation projects and expansion projects
	Environmental research & development cost
	Others
Capital item	Investment in technical transformation of environmental protection of new projects, reconstruction projects and expansion projects
	Investment in "three-simultaneity" environmental protection matching works

Investment in technical equipment

The Company applies multiple BAT technologies recommended by the world steel industry in energy saving and environmental protection fields. The utilizing rate of technology is higher than the average level of the steel industry.



BAT energy saving technologies in world steel industry



BAT environmental protection technologies in world steel industry



6.2.2 Industry Lead

Patent conditions

In 2016, the Company applied for 801 domestic patents, including 602 invention patents, accounting for 75%; 586 domestic patents were authorized, including 418 authorized invention patents; 31 international patents were applied for, 37 patents were authorized; the applied international patents include 14 patents of the Golden Apple Project, seven patents of the "thin-strip casting" cutting-edge technology, four patents of on-line heat treatment technology for steel pipes and three patents of new material technology.

Awards for technological innovation

Four Shanghai Science and Technology Progress Awards: Double Cold-reduced (DCR) Product and Core Technology Research of Baosteel (First Prize); Development and Engineering Application of High-strength Quenched and Tempered Steel Plate SA738Gr.B Used for Containment of AP-1000 Nuclear Power Station and Research and Application of Cold-rolled High-strength Thin Strip Steel Plate Welding Technology and Declaration (Workers' Award) (Second Prize); Research and Manufacturing of Coiled Sheet Used for CT80-CT100 Level Coiled Tubing (Third Prize).

Five Metallurgy Science and Technology Progress Awards: Integration and Product Research & Development of Thin-strip Casting and Rolling Process, Equipment and Control Engineering Technology (Grand Prize); Research and Application of Key Technologies of Drill Rod for Complex Ultra-deep Well (First Prize); Research, Manufacturing and Application of Electromagnetic Stirring Device for Slab Continuous Casting Crystallizer (Second Prize); Independent Integrated Development and Research Technologies for Special Line Continuous Casting Machine and Comprehensive Maintenance Technology for Heavy Plate Mill Rack (Third Prize).

High-tech achievements: ten new product projects were identified as the high-tech achievements by Shanghai in the whole year, including Development of Ultra-high Strength High-toughness Sleeve Products; Steel (LZ45CrV and EA1N) for New Track Axle; GI Steel Plates for Inorganic Solid Lubrication; 250MPa-level High Magnetic Inductivity Low-cost Cold-rolled Pole Sheet; BHC Fast Screw-on Screwed Joint; Steel Plates for Nuclear Power Container; High-strength Steel Plates for Special Hull Structure; Ultra-high Strength Steel with High Performance and Easy Weldability; Iron and Nickel-based Alloy Oil Casing; Research and Development of Light-weight 980MPa Cold Rolled Dual-phase Steel for High-performance Automobile;

Chinese Patent Award: after being assessed by the Patent Award Assessment Committee of China and checked by the State Intellectual Property Office of The P.R.C. and World Intellectual Property Organization (WIPO), the State Intellectual Property Office of the P.R.C. and WIPO decided to grant the 18th Chinese Patent Excellence Award for the invention patents High Magnetic Inductivity Oriented Silicon Steel and Its Production Method and High Yield Ratio Steel for Hot-galvanized Structural Member and Its Manufacturing Method declared by Baosteel Co., Ltd.

Invention and Creation Patent Award of Shanghai: The invention patents declared by Baosteel Co., Ltd., i.e. High Grade Non-Oriented Silicon Steel and Its Manufacturing Method and Device and Method for Integrated Flue gas Treatment are awarded the Second Prize and the Third Prize of the Eighth Invention and Creation Patent Award of Shanghai respectively; the patent Air-tight Seal Sleeve Joint is awarded the utility model patent prize.

Research & development achievements and industrial leading technologies

A. Industrialization of process, equipment and on-line detection technologies of brand new coated iron products; scale production of two coated iron products such as foundation lid and drawn can; mass production A4 type evaluation of key domestic users has been completed.

B. Initial Launch of international advanced ultrahigh-strength steel CT110 used for coiled tubing;

C. For acid-free dephosphorization BMD technology, the industrial test line has built, multi-batch trial-production and user trial-using of fine-blanked steel, automobile beam and wheel are completed, and the BMD core technology with Baosteel brand is formed.

D. Low-cost steel based on controlled cooling process such as Q420-Q620 structural pipe and N80-1 oil well pipe succeeded in trial-production.

E. A breakthrough is made in two technical routes of chemical absorption method and pressure swing adsorption method for acquisition of CO₂ in blast furnace gas, and the acquisition cost is lower than RMB 260yuan/t. Phased achievements have been made in technical research of CO₂ utilization, the new idea of value-added utilization of CO₂ in blast furnace and converter as well as generating biological energy by microalgae carbon sequestration is proposed, and the annual consumption of CO₂ is more than 200,000t.

F. Baosteel actively promotes smart manufacturing, explores and researches the transformation from manufacturing to "smart manufacturing", and starts a series research & development projects such as research & development of new technologies of 3D inspection on product surface quality, metallurgy robot and flexible manufacturing. For the new technologies of 3D inspection on product surface quality, it is based on the 3D image reconstruction and parallel image computing technology, the detection and measuring systems for different steel products of different types of units to be used on thermal-state seamless steel tube, thermal-state slab, mandril surface, finishing surface of heavy plate, surface of silicon steel product, square billet surface, etc. For key technologies of metallurgy robot, application of the first automation robot used for sampling, temperature measurement, commissioning of covering agent and casting powder, oxygen burning and slag removal of water outlet is realized. For key technologies such as flexible manufacturing, the industrial application of intelligent optimization system is realized, the continuous casting scheduling optimization level is improved, and the quality optimization level of the remaining materials is improved.

[Case] Practice makes perfect and bring out the best

9Ni steel is an alloy steel with the nickel content of 9%, which has the good reputation of "pearl on the crown" in the heavy plate field. At the extremely low temperature of -196°C, other steel products may be broken by blow or flip, while the 9Ni steel still has good toughness and high strength. Such characteristic enables it to become the irreplaceable material to be used in large LNG (liquefied natural gas) storage tank. However, ultrahigh production difficulty and product performance requirements result in only a few steel works with the capability of stable batch production. After seven years of bold exploration, Baosteel broke through difficulties and finally realized that "practice makes perfect (9Ni steel) and bring out the best" in 2016.

6.2.3 Products Having Broad Influence

World premiere of high magnetic inductivity oriented silicon steel B27R080 and B30R090 is realized.

The high magnetic inductivity oriented silicon steel B27R080 of Baosteel is successfully applied on the 200kVA distribution transformer of Hefei Jingxi Electrical Equipment Co., Ltd. It is not only with excellent performance, but also can save man-hour, and the comprehensive cost can be reduced by 2%. B30R090 is successfully applied on the 240MVA power transformer of Baoding Tianwei Group Co., Ltd., of which the test results of no-load performance and noise performance totally meet the technical demands of the user.

World premiere of cold-rolled ferrite light steel and parts is realized.

The first global trial-manufacturing of the 800MPa level cold-rolled ferrite light steel (grade: HC420/780DTR5) and parts for new generation of automobile of Baosteel is successfully completed. Such type of steel with the longitudinal elongation higher than 30% boasts high strength and high plasticity matching (higher than 22000MPa*%). Compared with the traditional C-Mn steel, the density of such steel is reduced by more than 5%. The part for trial-production is the bumper bar for rear door of a certain type of automobile.

World premiere of ultrahigh strength steel CT110 for coiled tubing is realized.

CT110 products of Baosteel with international advanced performance were supplied to the markets in North America and Iran for the first time, which made a milestone-type breakthrough in the overseas market.

Ultrahigh strength steel products

It is predicated that the annual sales volume of ultrahigh strength steel of the Company reaches 380,000t, with a growing rate higher than 40% compared with that in 2015. The market share exceeds 60%. The cold-rolled steel QP980 and QP1180 with high elongation succeeded in passing the Nissan material certification. The Company becomes the first supplier of China (the fourth supplier of the world) for supplying such products to Nissan.

It is not a science fiction film, but smart manufacturing of Baosteel

At the exchange meeting for smart manufacturing of the steel industry in 2016 held on Nov. 23, 2016, Baosteel shared the construction conditions of the hot-rolling 1580 smart workshop. Baosteel Co., Ltd. selects "hot-rolling 1580 workshop" (the core link of steel manufacturing) for construction of smart plant, which is the only smart manufacturing demonstration site of steelmaking industry selected in 2015. The smart workshop will be completed in 2017. After completion, indicators of the hot-rolling 1580 workshop such as product quality and labor efficiency will be increased greatly, and the predicated annual economic benefit exceeds RMB 32 million.



6.2.4 Global Layout

In the context of depressed domestic market, the Company conducts global development layout. Including the following progresses:

Expansion of overseas processing center

In Mar. 2016, the Company registered and established the Indonesian Steel Processing Center of Baosteel, and conducts project construction of processing base, with the designed steel processing capacity of 130,000t/a, which will provide the Indonesian plant of the strategic user of the Company with supporting cutting processing services.

Export of steel products

In 2016, the export volume of steel products of the Company reached 3,199,500t (based on financial settlement), and the proportion of sales volume was 13.7%.

6.2.5 Driving Force for Other Growth

Development of Zhanjiang Steel

On Sept. 25, 2015, the No.1 blast furnace of Zhanjiang Steel was ignited, which marked the official operation of the Zhanjiang Base of Baosteel Co., Ltd. The Zhanjiang Base is located in Donghai Island of Zhanjiang, including steel production system, quay berth and main common/auxiliary supporting facilities, with the designed production capacity of 10MMTPA. The project is integrated with multiple advanced and proven technologies for energy saving and environmental protection, with the comprehensive energy-consumption index at the leading level in China.

At present, the Zhanjiang Base completes the transformation from construction to operation, and the production and operation results are better than expected. The base construction progress is accelerated constantly. In Jan. 2016, 2030 cold-rolling thermal-load commissioning was realized; in Mar., whole-line operation of the No. 1 blast furnace system was realized; in Jul., smooth ignition of the No. 2 blast furnace was realized, the construction objectives of Phase I Project was achieved successfully, and control over engineering safety, quality, progress, investment and integrity was realized. As all production lines are put into trial production successively, the index level of the base is increased constantly based on the production and operation objectives; No. 1 blast furnace, hot rolling, cold rolling continuous annealing, etc. reach the monthly production capacity successively, which succeeded in passing ISO9001 certification of BSI and ISO/TS16949 conformance certification, and the products have been supplied to more than 50 automobile customers. Meanwhile, the base seizes the favorable market opportunities, accelerates ramping up in capacity, and strives to seek the cost improvement potential with backflush accounting at the core. The general gross profit of products is good, positive contribution margin was achieved in Mar., positive operational cash flow was achieved in Apr., and the cost competitiveness is increased steadily.



Enhancement of innovation and R&D capabilities

1. To ensure the industry leading edge of the Company's technology and make quick breakthroughs in the variety, specifications, quality and output of the new products to push them to the market, convert them into the business performance of the Company to help the Company make steady benefits, the Company plans and implements incentive scheme for the science and technology value-creation team by following the principle of "benefit sharing and risk sharing", solicits opinion extensively, selects pilot projects, establishes a value-creation team for composite board products and makes the maximum use of the composite rolling technology to develop and expands new product space of the Company. Company leaders grant licenses for the composite board value-creation team on the pilot project, sign an assignment and stimulate technicians' initiative to scale up the new product rapidly.

2. The Company vigorously promotes the industrialization of scientific and technological achievements and explores the combination mode for multiple management mechanisms to convoy for the industrialized transformation of such scientific research projects as BMD and VRB. Scientific research projects and management channel between the internal promotion and external technology trade are linked in an organic and efficient way. The initiative of the project team and effectiveness of achievement transformation are promoted to the maximum extent in terms of project layout, management service and incentive mechanism to realize the economic value of transforming science and technology into productivity to the greatest extent and in the fastest way.

Academic exchange and cooperation at home and abroad

The Company adheres to the principle to be all-embracing and improves internal strength of the enterprise continuous through participating in and conducting various domestic and foreign academic exchanges to facilitate image promotion.

1. Actively participating in exchange activities held by the World Steel Association

Baosteel makes use of the resources from the World Steel Association by participating in the exchange activities held by the World Steel Association so as to serve the internationalization strategy of Baosteel. Fourteen delegations or teams were dispatched for exchange in 2016 (23 persons involved), which covered technology, economy, raw materials, environment (clean air), safety, education, sustainable development (LCA), automobile, etc.

Participating in the working group meeting of World Steel Association on clean air

The working group meeting of World Steel Association on clean air was held in Buenos Aires, Argentina on 3-5 Oct., 2016. Baosteel Co., Ltd., as the chairing organization of the project, dispatched Li Honghong to participate in the meeting, on which Li introduced new national policy regulations on environmental protection and emission reduction measures of Baosteel.

Indian Tata Group visited Baosteel to make exchanges on slag processing technology

Indian Tata Group and Baosteel carried out exchanges on slag processing technology in the steelmaking process on September 7, 2016, during which they understood the utilization situation of subsequent resources of the drum slag and then inspected the production site.



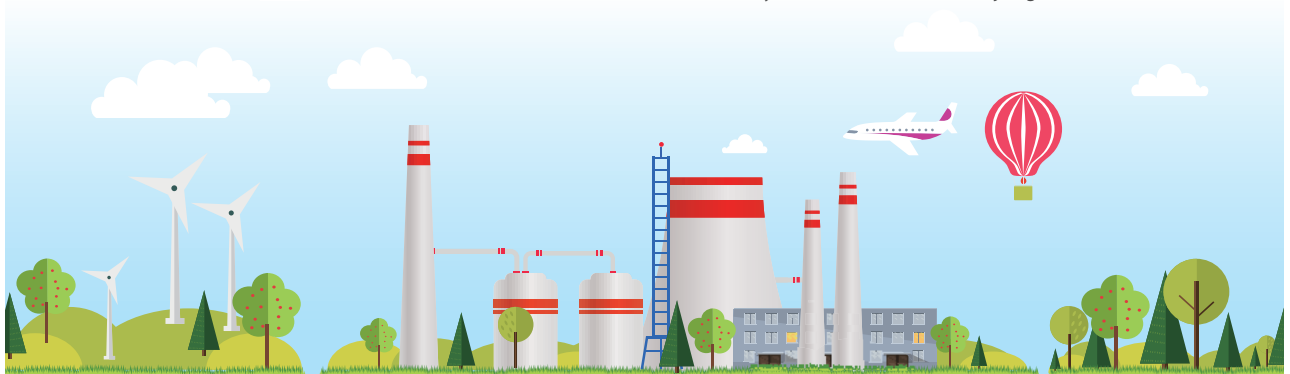
2. Actively communicating with international counterparts

The Company tracked the developments of domestic and foreign metallurgical meetings closely in 2016 by focusing on the era characteristics, technical hot points and problems in the development process of the steel industry. Platforms for exchange with domestic and foreign counterparts are set up for the scientific and technical personnel of the Company to obtain information about advanced steel technology in a timely manner, and internal sharing and communication activities are carried out to improve the overall academic level of the Company, improve the innovation capability and help the Company to reduce cost and improve efficiency through technological innovation.

Groups were formed inside the Company and 16 groups were dispatched throughout the year, with 26 persons participating in international academic conferences. Twenty seven groups involving 206 persons participated in domestic academic conferences, who submitted 124 conference papers for publication, and 30 reports were released based on special invitations.

Exchanging visits and communicating with China Steel Corporation in Taiwan

The seventeenth exchange activity between Baosteel Co., Ltd. and China Steel Corporation was held in Baosteel on 3-6 May. Song Zhiyu, president of China Steel Corporation, and He Changying, vice general manager led a group of 16 persons for exchange with Baosteel Co., Ltd. The subject of this technical exchange was ironmaking and steelmaking. Both parties released 20 papers. The China Steel Corporation group visited Baosteel Co., Ltd. and senior leaders from China Steel Corporation also visited Ouyeel E-commerce and Zhanjiang Steel.



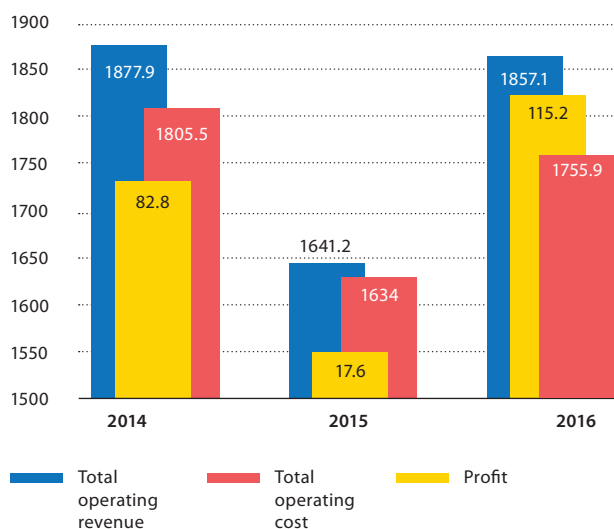
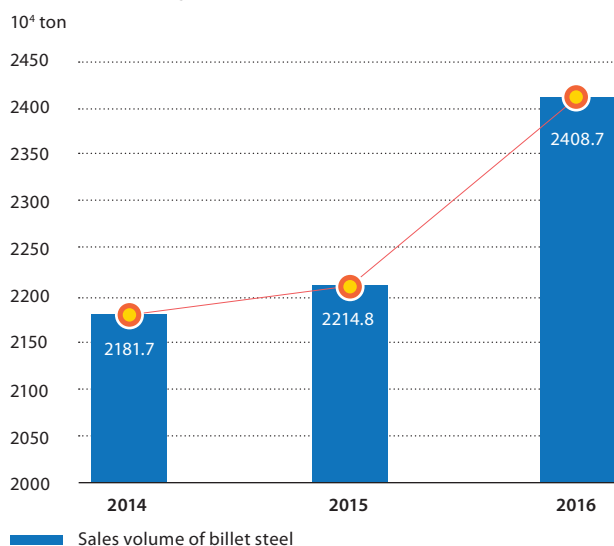
6.3 Economic Value Created and Distributed

6.3.1 Operating Revenue and Operating Costs

The 5-year turmoil and decline in the steel market during the 12th Five-Year Plan period came to an end in 2016, and the whole industry entered into the shock upstream channel, and turned around the situation and made meager profit. Under the impact of the continuous rebound in steel price and the dilated impact imposed by the production enthusiasm of the steel enterprises, there was slight increase in the steel output. The domestic crude steel output was 808 million tons in 2016, with a year-on-year growth rate of 3.2%, being the first rebound after two consecutive years' of decline.

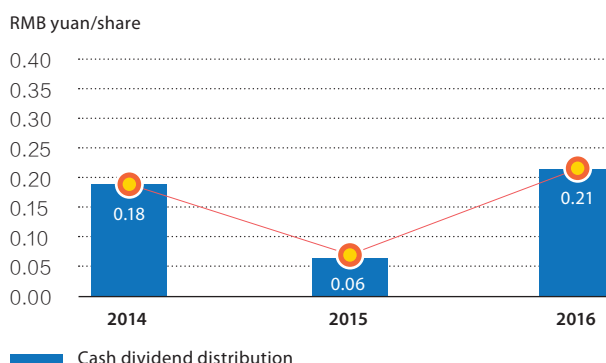
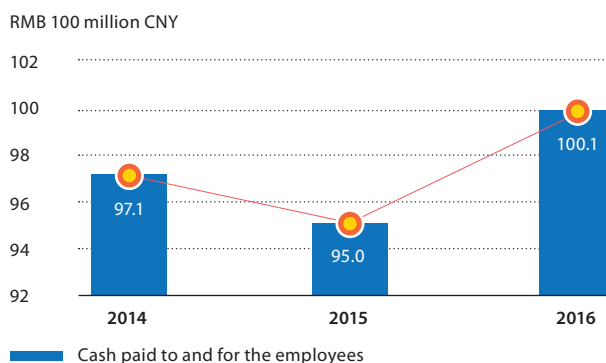
The Company realized total profit of RMB 11.52 billion compared with the profit of RMB 1.76 billion in 2015, with an increase of RMB 9.76 billion and a growth rate of 553%, which was achieved by seizing the opportunity of dissolving overcapacity in the steel industry and the market's turn for the better, strengthening the production-distribution collaboration and three-place collaboration, and carrying out whole system cost reduction.

The sales volume of billet steel of the Company in the past three years is as shown in the figure below.



6.3.2 Employee Remuneration

Cash paid by the Company to and for the employees amounted to RMB 10.01 billion in 2016. The situation in the past three years is as shown in the figure below:



6.3.3 Retained Earnings and Dividend Distribution

As a legal entity, the Company realized net profit of RMB 6.889 billion in 2016. According to provisions of the Articles of Association of the Company, net profit of 10% realized by the Company as a legal entity was set aside as legal reserve, i.e. RMB 0.689 billion to realize the long-term and continuous sustainable development and return the investors in a better way; net profit of 10% realized by the Company as a legal entity was set aside as public reserve fund, i.e. RMB 0.689 billion in 2016; The Company always attaches importance to returning its shareholders and sticks to the principle of cash dividend distribution, so it proposes to distribute cash dividend of RMB 0.21 per share (tax inclusive) to all shareholders listed on the date of registration of stock rights as confirmed in the dividend distribution announcement. The total amount for cash dividend distribution is RMB 4,641,557,954.25 (tax inclusive; by taking 22,102,656,925 shares after consolidation and the share swap as the criterion), accounting for 51.77% of the net profit that belongs to the shareholders of the parent company.

6.3.4 Fund provider

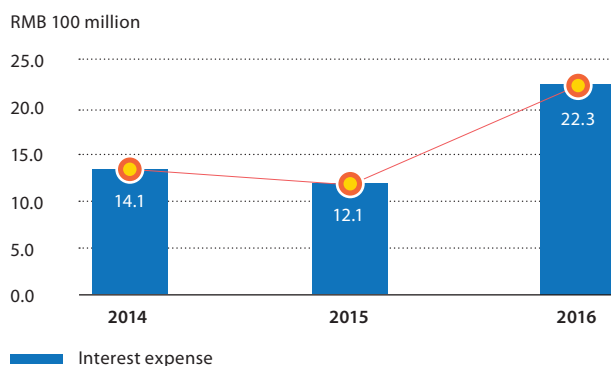
The Company deals with changes in the financial environment vigorously, expands direct financing channel, studies and judges profit and exchange rate trend and continuously implements debt structure optimization scheme.

The Company adopted the financing strategy mainly of RMB financing in 2016 and released financing bills of RMB 28 billion in ultra-short term and medium term note of RMB 5 billion in the form of rolling release with the legal person of the Baosteel Co., Ltd. as the main body based on the judgment of the direct financing channel and the need for liquidity management. Meanwhile, it replaced some RMB loans with relatively higher cost

while meeting the needs of operating capital. The Company keeps being sensitive to the foreign exchange market and carries out foreign currency financing timely on a small scale by following the management principle of “interest rate of foreign currency financing + exchange rate locked-in cost” being less than the comparable RMB financing cost.

Baosteel pays constant attention to the risks with exchange rate and interest rate in terms of risk management; the Company formulated management plan in 2016 at the beginning of the year and adjusted the risk strategy dynamically in the subsequent operation. According to the overall strategy of the plan, the Company carried out long-term foreign exchange purchasing for some payment exposures at the beginning of the year, locked and hedged against the risk in the general trend of RMB devaluation, maintaining some exposures at the same time, and conducted spot transaction flexibly in the process of bidirectional fluctuation of exchange rate.

Baosteel selects financial institution cooperators according to comprehensive conditions of financial institutions, such as the credit status, business strength and market credibility, and coordinates the cooperative relationship with the financial institution in an integrated manner. As the Company always attaches importance to developing cooperative relationship with banks, currently, it has signed cooperation agreements, overall credit granting agreements and agreement on lending and returning at any moment with leading commercial banks, which guarantees the financing channel and financing amount. The Interest expense for the corporate merging was RMB 2.23 billion in 2016.



6.4 Investor Relations

The Company attaches importance to developing investor relations and takes “becoming a listed company offering the greatest investment value” as the goal of business operation. In the process of decision-making for various major events, the Company obtains the understanding and support from the investors on the capital operation of the Company through active communication; the Company pays back investors actively and shares dividend from corporate development with the investors by adopting dividend distribution mechanism that dares to break through the convention; the Company sticks to positive and transparent operations and creates excellent capital market image through deep communication with investors.

Communication

Baosteel Co., Ltd.’s merger with WISCO was a matter of primary importance for the Company in 2016. To help the investors grasp details of the project scheme in a timely and accurate way, the Company organized various investor communication at the first moment after the release of the plan for Baosteel Co., Ltd.’s merger with WISCO through a share swap.

A. After the merging and consolidation plan was published on the website of the stock exchange, the Company held a teleconference of investment institutions such as the securities trader and fund investor on the very night, at which the management of the Company and the person in charge of the project interpreted the plan to help investors get a better understanding of it.

B. From the announcement day, the management of the Company led a group to visit Shanghai, Beijing, Shenzhen and Guangzhou, to have interviews with the fund institutions and QFII, etc. Both parties communicated in depth on such hot issues as the merging and consolidation plan, future synergistic effect, stock ownership incentive.

C. The Company prepared news release for the shareholders and media agencies to disseminate extensively on paper media and network media to ensure that information of the Company could be sent to investors at the first moment.

On the whole, the plan for Baosteel Co., Ltd.’s merger with WISCO gained understanding and support from investors. As it is shown by the poll results that various sub-proposals of the restructuring scheme passed with an overwhelming majority of supporters, approval rate of the public shareholders reaching 99.5%.

Dividend distribution mechanism

The steel industry was in depression in 2015, which also affected the Company’s operations, leading to month-on-month decrease of 82.5% in the benefit of that year, with net profit of RMB 1.013 billion. In spite of the risk of the industry entering a depression period, the Company still thought of returning the shareholders to the maximum extent when it submitted the annual dividend distribution plan at the beginning of 2016, used almost all the distributable net profit that was realized in 2015 for cash dividend which accounted for 97.6% of the total net profit, RMB 0.06 for each share of dividend.

Image maintenance

As the window of the Company toward the capital market, the investor relation team always persists in delivering the value of the Company to the investors. The Company received 51 batches of investors for investigation and survey, altogether 262 person-times; received eight batches of investors for visit, altogether 44 person-times; actively participated in 13 investor meetings held by famous domestic and foreign investment banks such as Merrill Lynch, Credit Suisse Group, Citigroup.

The Company held the 2015 general meeting of shareholders and explanation session of analyst performance in April 2016, which attracted numerous investors, 31 investment institutions, analysts and seven media organizations. Moreover, the Company held four performance presentations online to coordinate the release of periodical reports, on which the company leader and investors made in-depth exchanges on the operating performance, cost reduction measures, Zhanjiang Steel, industry trend and supply-side structural reform, which further built the good image of the Company on the capital market.

Data support

Rating agency	2014	2015	2016
Standard & Poor’s	A-	A-	BBB+/STABLE (BB+)
Moody’s	A3	A3	A3/STABLE (BAA2)
Fitch	A-	A	A-/STABLE (BBB+)



PEOPLE AS TREASURE

The Company is a people-oriented enterprise which pays attention to demands and voice of all stakeholders.

7.1 Staff as Treasure

Baosteel Co., Ltd. is dedicated to becoming a model of seek joint development of both employees and the company, provides competitive welfare and remuneration for its employees, gives a full play to the strengths of the employees, and provides sufficient vocational skill training and broad career development space for its employees.

7.1.1 Staff Team

There were 37,183 in-service employees at the end of the report period, including 21,068 maintenance personnel, 12,921 technicians and business personnel and 3,194 management personnel.

There were 28,567 employees with junior college education background or above, which accounted for 76.8% of the total of employees.

There were 7,487 employees with an intermediate professional title or above, which accounted for 46.5% of the total of technicians and business personnel.

There were 11,297 employees who obtained a certificate for senior technician or above, which accounted for 53.6% of the number of maintenance personnel.

Employees of the Company are mainly distributed in Shanghai, Jiangsu, Guangdong, Shandong and Hubei and some overseas areas.

The Company provides equal employment opportunities for employees of different sexes and ages. Male/female ratio is 6.8: 1 due to the characteristics of the steel industry. Female employees are mainly on the management and technician and business posts.

The Company has a young staff team which is full of vitality and has reasonable age structure: 45 years old or below, accounting for 69.7% of the total.



Distribution of the age of staff (number of people)

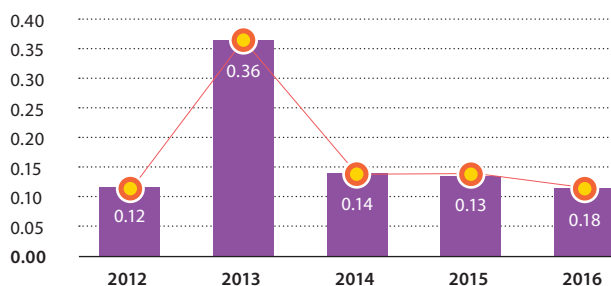
Age group	Total	≤25	26-30	31-35	36-40	41-45	46-50	51-55	≥56
Number of people	37183	4081	5910	6002	4771	5136	4830	4875	1578

7.1.2 Safety and Health

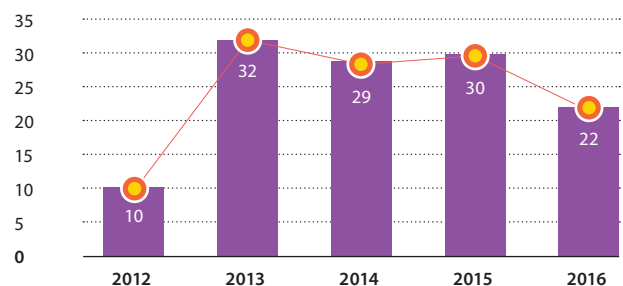
Employee safety

The Company lays great emphasis on employee safety and continuously improves essential safety management work. The safety situation of the Company was stable on the whole in 2016.

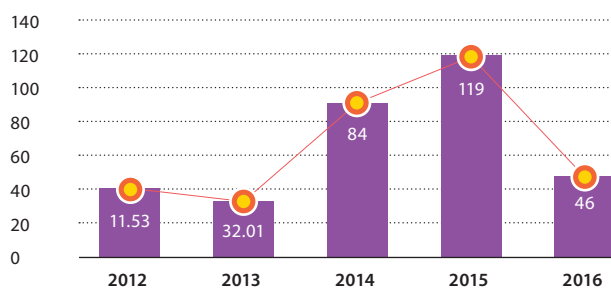
Frequency of injury (number of people injured/million man-hour)



Number of people injured



Injury severity rate (number of lost work days/ million man-hour)



Physical and mental health

To meet the demand of employees for physical and mental health, the Company continuously enriches and optimizes the health security plan for employees and provides diversified health security service programs for the employees to select according to their personalized demands. Meanwhile, employees are entitled to the rest day, holidays and festivals, paid annual leave, family leave and other holidays as provided by the national laws and regulations and company system. Salary for working overtime and work on various holidays are paid in strict accordance with regulations of the national policies and company system.

7.1.3 Harmonious Labor Relations

The Company abides by such laws and regulations as the Labor Law of the People's Republic of China, Labor Contract Law of the RPC, Trade Union Law of the PRC and Social Insurance Law of the PRC as a model, respects the human rights of employees, cares for employees, protects interests of employees in a practical way and enters into and performs labor contract with employees in accordance with law.

The Company meticulously implements the comprehensive contract system for all employees, collective contract system, system of congress of workers and staff; gives a full play to and strengthens the advantage of the workers congress system as a "platform" through establishing and strengthening the labor union organization, labor dispute mediation organization, labor law supervision organization, and supervision and inspection organization for labor protection; promotes the work of consultation on an equal footing and collective contract work in depth and extensively, which ensures the stability of the staff members and promotes construction of a harmonious enterprise.

7.1.4 Welfare and Remuneration

The Company adopts a remuneration system that is competitive externally and fair internally. It stimulates the employees to raise efficiency, reduce cost, create optimum performance in the industry and realize increase in income by linking the remuneration of employees with the operating performance of the Company and individual performance. It provides competitive salary for the employees through the performance-oriented salary incentive policy.

Meanwhile, the Company establishes multilevel insurance and welfare system to provide effective security for the employees and enhance the cohesion of the company. Apart from paying various social insurances timely and in sufficient amount, the Company also provides enterprise annuity plan, supplementary housing fund, health security plan, physical examination and free working luncheon. Moreover, in order to relieve the housing pressure of young workers, the Company provides monetized subsidy for renting a house and payment discount and loan plan for purchasing the first suite for the employees who meet the application conditions according to regulations of relevant policy, which promotes mutual development of the employees and the company.

7.1.5 Care for Employees

Employee relationship

Baosteel establishes rules and regulations and advocates mutual assistance to ensure that the work of helping household in hardship is carried out steadily. The Company ensures emotional stability of the employees in difficulty through further improvement of the Management Measures of Helping Families in Financial Difficulties and Visiting Underprivileged Homes and adjusting the standard of helping families in financial difficulties; allocates 15% of employee donation that year to the grassroots trade union to intensify the help with employees in difficulties through formulating the Management Measures for Using of Daily Donation; intensifies employee assurance by arranging the employees to apply for the journeymen fraternity insurance in Shanghai.

Balance between life and work

To create an excellent working environment, the Company must perform important renovation project construction by layer and by category by following the principle of "being compulsory, feasible and reasonable" according to the practical situation of each department. It creates excellent working environment for the employees through various effective and practical measures to help the employees to keep balance between life and work.

Family letter heartwarming activity →

Employee activity



↑ The ninth group wedding ceremony



↑ Employee football game



Diversification and equal opportunity for all

Baosteel practices the management concept of equal opportunity for all, by following the principle of fairness and equity in the process of formulating various policies and plans, and advocating the concept that all people are equal. Discrimination against sex, age, nationality, religious belief and political positions is strictly prohibited during recruitment, promotion and appraisal. The system of equal pay for equal work is implemented for male and female employees. The Company encourages graduates who have returned from abroad to work in Baosteel Co., Ltd., tracks information of the people studying abroad and vigorously introduces high-level overseas talented professionals.

Meanwhile, the Company lays great importance to employees of ethnic minorities and gives certain allowance to some ethnic minority employees. Some ethnic minority employees hold important management positions in the Company; moreover, the Company pays attention to taking care of special groups, such as concerning about the physical and mental health of women employees, implementing the maternity leave and breastfeeding leave; and implementing the policy of giving financial difficulties allowance to the poor.

Employees getting involved in corporate governance

The Company lays great emphasis on the democratic management, implements democratic management work through workers congress and plant condition briefing and makes proposals involving the immediate interests of employees. Democratic procedures are performed to ensure the participation right and right of the employees to know the truth. During enforcement of various proposals, the Company will organize multiple staff representative symposiums, take opinions repeatedly and ask relevant department to modify and improve the scheme to ensure that relevant policies that have been issued by the Company are acknowledged and accepted by vast staff members.

7.1.6 Employee Development

Development path and training for employees

Baosteel takes “becoming the model enterprise seeking joint development of employees and the company” as its vision, regards human resources as the most important asset of the Company, takes capacity building as the core, continuously promotes talent development work in a targeted, layered and classified way, constantly improves cultivation system for employee growth and speeds up growth of key talent with future-oriented boutique training programs. A professional platform for independent cultivation and recommendation of chief officer (director officer) is formed through virtual team activity on professional technology within the corporate scope, to push the cultivation of spirit of craftsman.

Identifying development demand accurately

Circular demand analysis mechanism is established from four perspectives of strategy driving, post competency, career development and knowledge extension; the Company pays attention to personal development demand while emphasizing the company's demand. Annual training plans are formulated by combining the corporate demand and personal demand to provide support for the joint development of the employees and the company.

Continuously enriching development resources

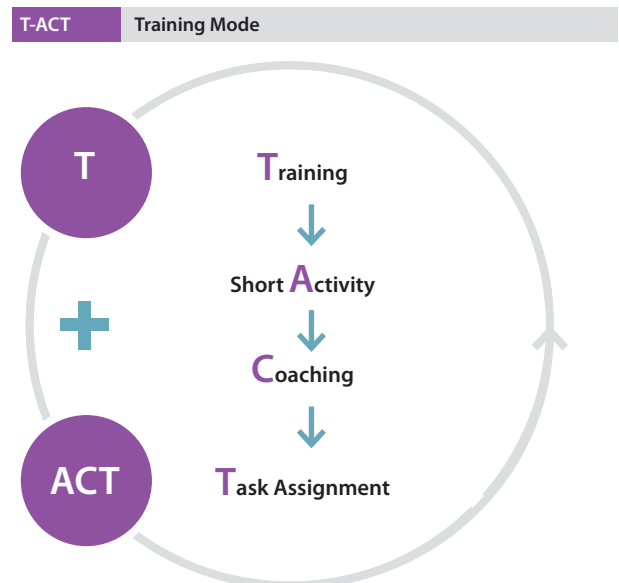
The Company selects domestic professional training institutions and colleges and universities like Academy of Talent Development of Baowu Group and Shanghai Jiao Tong University as cooperators, continuously expands overseas training resources and channels, selects and sends key staff regularly to engage in advanced studies, research and studies on special projects to broaden the internationalized vision of employees. Besides, the Company establishes an experienced internal trainer team, sets up multiple shared learning platforms for technology sharing, mobile learning and simulation operation and uses the Internet to enhance the convenience and effectiveness of employees' knowledge acquisition.



↑ 2016 graduate group photos of dual system of Baosteel Co., Ltd. - Shanghai University of Engineering Science

Creating boutique projects with originality

The “T-ACT” cultivation mode is adopted by the Company to form relatively complete layered and classified talent training system, and “learning map” that facilitates employee growth is established by taking the knowledge that shall be acquired by employees at different career development stages as a point of breakthrough. Apart from the traditional training mode of “experts giving lectures and masters giving instructions and teaching to apprentices”, such teaching methods as “flipped classroom and action learning” are introduced to consolidate the training effect by virtue of mutual stimulation between students and practice and application of knowledge. Multiple programs like “administrative staff subject exercise” and “skill master training camp” are formed to support the company's strategy and enhance the employee's comprehensive quality.

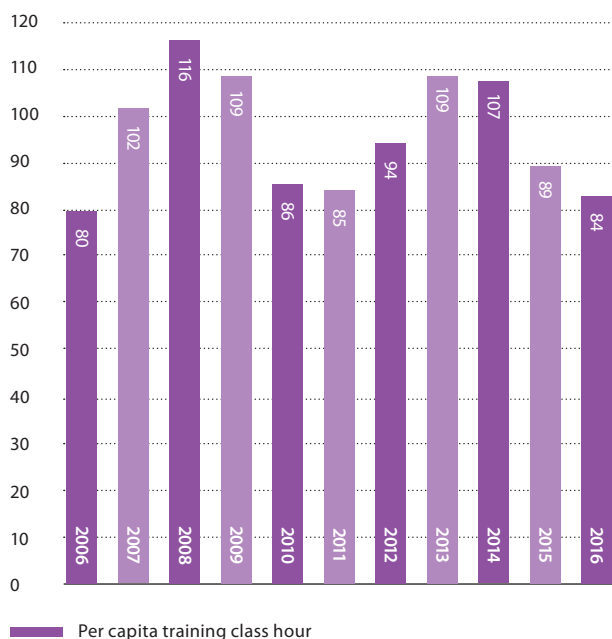


↑ Company leaders issue certificates for outstanding students of youth training camp

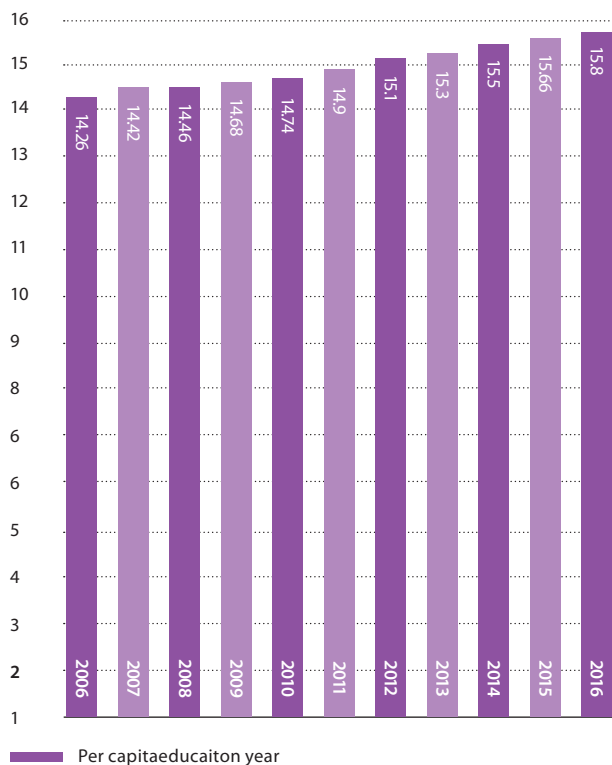
Summary of training situation

Emphasis was placed on relevant contents of “a new round of planning” in 2016 by centering on the development strategy and production and operations of the company, to continuously optimize the project design, improve the growth stimulation mechanism, expand high-quality training resources, dig the potential talents in depth and carry out talent cultivation work in an accurate manner. The employees enjoyed an average of 84 class-hours training and participated in for 156,000 person-times. In this way, the average years of education of the employees increase year by year. The average years of education of the employees reached 15.8 years at the end of the report period.

Class hour



Number of Years



7.2 Community as Treasure

By adhering to the concept of “integrating itself into the local ecological environment and realizing symbiosis with the communities”, the Company strengthens publicity of environmental protection, performs its due social responsibility vigorously, contributes to the society and makes every effort to create and consolidate stable and harmonious society-enterprise relationship.

The Company carried out donation for adjacent communities in 2016 and paid Party membership dues on July 1, which were used for the community environment renovation, reconstruction of public facilities and helping and subsidizing disadvantaged groups, which brought blessings of Baosteel Co., Ltd. to nearby residents and thus won unanimous acknowledgement of the government departments and vast residents nearby. The Company sends Baosteel Daily to adjacent communities to make residents to be informed of the development trend of the company to further eliminate their concerns over environmental protection, reflecting the company's posture and fulfillment of responsibility. Moreover, interaction with the local government department is further strengthened by participating in the sessions of the people's congress of Yuepu Town and regionalized joint meetings for Party building held by the Yuepu Town, and the system of reciprocity and mutual benefit and support is established to achieve win-win cooperation through co-construction, sharing and joint development. The Company also sticks to building platform interaction mechanism, communicates with people in Yuepuercun village, Shexiang area regularly, and has planned to send environmental protection information regularly and carry out environmental improvement and humanistic care as required.

Volunteers from Baosteel participating in learning-from-Lei Feng activities

During the process of learning-from-Lei Feng activities, the Company organized volunteers to participate in the activity of “entering communities to conduct learning-from-Lei Feng activities” on March 5 which was themed by “service entering the community, volunteers providing heart-warming service”. They carried out activities for the convenience of the residents of Yuepu Town, such as maintenance for bicycles and help-move-vehicles, repair and maintenance of leather shoes, care for the old and childless and give green plants to the local residents.



↑ Community activities conducted by volunteers from Baosteel

Thousand people visiting Zhanjiang Steel

The activity of “Thousand People Visiting Zhanjiang Steel” was organized by Baosteel Zhanjiang Steel in 2016, during which the citizens gained completely new understanding of Zhanjiang Steel through live demonstration and explanation. Twenty one batches of citizens visited Zhanjiang Steel in 2016, amounting to 1,016 person-times.



7.3 Shareholders as Treasure

The Company has been adhering to the policy of a high proportion of cash dividend distribution since the day when the Company went public. This is not only an important means for the Company to return its investors but also strong reflection of the investment value of the Company. A proposal was passed at the annual shareholders' general meeting in 2004, in which it stipulated that the proportion of the annual dividend shall not be less than 40% of the net profit attributable to the shareholders of the parent company. This number was further increased to 50% in the annual general meeting in 2012; the performance of the Company in 2015 was poor, but the Company still used almost all the distributable cash profit that year for cash dividend distribution. Baosteel persistently pursues the dividend policy of high proportion cash dividend distribution, which reflects the great emphasis laid by the Company on its shareholders' interest.

To communicate with its shareholders in a better way, the Company has established multiple channels for the interaction with its shareholders. At present, the common communications include investor relations hot line and mailbox, online performance show or analyst explanation session, receiving the investors to communicate and pay a visit to the Company, engaging in call conference with investors, online platform for interaction of investor relationship, participating in investor exchange meeting held by intermediary agencies, WeChat Official Account and WeChat group. Besides, for the convenience of domestic and foreign investors to consult the operation data of the Company, periodical reports such as annual reports and semiannual reports are prepared and English version announcement is printed and released, preparation, printing and binding work of Chinese and English version of Company Memoir (2016) were completed and it has been uploaded to its official website. All of these are to enable shareholders of various types to find communication mode suitable for him/her and the company, know about the company

information in a more convenient way and provide reference for his/her investment decisions. As for the Company, its maximum efforts to cover the shareholder group can help it take the investor's opinions so as to provide better service for the shareholders. The Company improves service details continuously and enhances the publicity and communication effect during the publicity and communication process.

For example, picture and text demonstration has been added to the information disclosure mode. During disclosure of annual report, core content of the annual report is extracted, so that it can be exhibited on the first page of the annual report in the form of "knowing the performance in the annual report from a picture", the investors can know the annual operating performance of the company at the fastest speed; "core data" is highlighted in the main part of the report and key index data is highlighted in popular and easy-to-understand graphical representation.

During external publicity and communication, the Company makes full use of emerging media like WeChat and H5 tools to improve the promotion effect. Altogether 94 WeChat articles were published by using the public account "Baosteel Co., Ltd." in 2016, with a number doubled compared with that of the previous year. Besides, the public account of "Baosteel Co., Ltd." and other WeChat accounts like "hibaosteel" and "Baosteel Express" are interconnected to further expand the publicity coverage and strengthen the publicity effect. Performance announcement documentations were made by adopting new form of H5 webpage for the first time when the interim performance of 2016 was released, which achieved desired effect, page view reaching near 40,000 and unique visitors reaching about 32,000.



← Thousand people visiting Baosteel Zhanjiang Steel



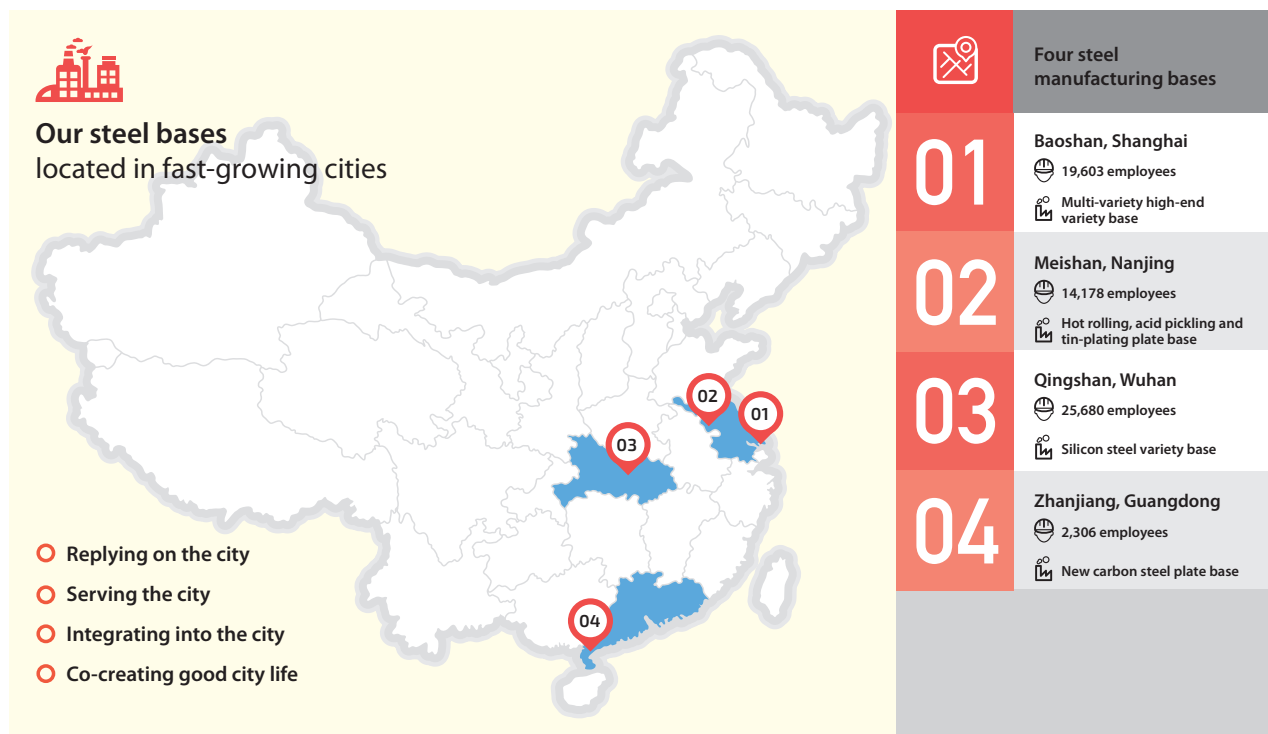


URBAN STEEL MILL

All the four steel bases (Shanghai Baoshan base, Wuhan Qingshan base, Nanjing Meishan base, Zhanjiang Dongshan base) of the Company are located in the fast-developing core urban regions.

The Company comprehends the concepts of innovation, coordination, greenness, openness and sharing based on the status of the urban resources and environment as well as the requirements of planning and development, and is devoted to improving the green manufacturing level and the regional environment quality continuously; by focusing on the functions of energy conversion and circulating utilization of resources of the steel enterprise, shares technology and resources with the city actively and facilitates industry development of the city; undertakes social responsibility energetically and engages itself in the charitable and public service and community construction, and takes construction of "urban steel mill" which integrates city and industry and is characterized by ecological harmony as the core goal of sustainable development of the Company.

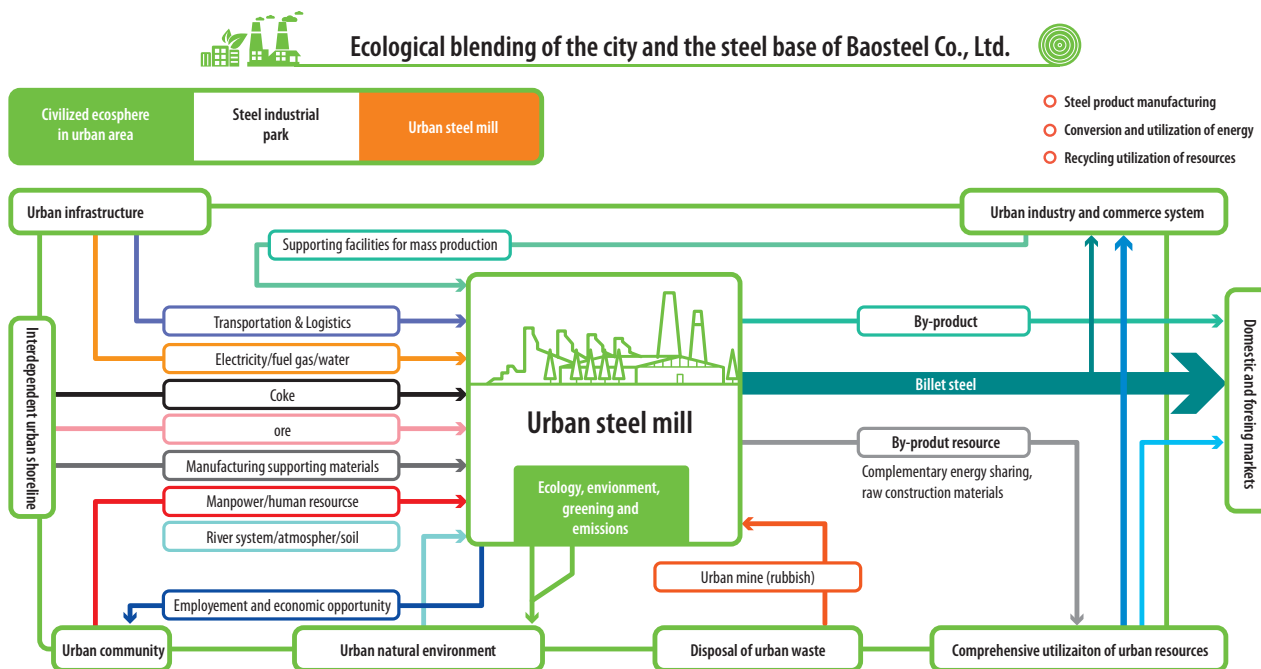
Specific measures for constructing “urban steel mill” were proposed in the new round of “urban steel mill” development planning (2016-2021) in 2016 by focusing on the environment, economy and society based on realizing positive interaction and promoting benign integration between the enterprise and the city.



[Special topic] How to understand “urban steel mill”

A whole-process integrated steel mill is divided into three functions: steel product manufacturing, energy conversion and utilization and recycling utilization of resources. For “urban steel mill”, it is necessary to improve the green manufacturing level, emission reduction and low carbon creativity comprehensively to build a green and smart mill on the one hand; meanwhile, it is necessary for it to give a full play to the technological and resource advantages as an integrated steel mill, help to relieve the

resource and environmental pressure, actively provide functional services as planned by the city and as demanded by people’s livelihood development so as to realize the goal of “relying on the city, serving the city, integrating into the city and seeking joint development in harmony with the city”, and make a steel mill really become an integral part of the harmonious urban development.



Implementation path of "Urban Steel Mill" planning

This goal will be achieved in two steps in the new round of planning:

The first step (2016-2018): advancing the construction of green mill and seeking excellent guidance in the industry.

The second step (2018-2021): the mode of city-industry integration takes initial shape to build sharing value.

In the first step, it will rely on the last round of six-year plan formulated by Baosteel Co., Ltd. to speed up the implementation of more than one hundred projects and investment projects worthy of RMB ten billion, realize upgrading of energy efficiency and environmental protection level of whole-process equipment during steel manufacturing, and enhance the energy efficiency and emission reduction of the whole-process system as well as mill management; in the second step, the Company will further realize the goal of sharing green energy with the city and serving the city through green industry on the basis of the first stage. Meanwhile, it will facilitate urban transformation by relying on new energy resources and new materials and promote common construction of regional ecological environment, so as to integrate itself into good urban life.

8.1 Joint Construction of Urban Ecological Environment

8.1.1 Construction of Local Ecological Environment

Taking the lead in control of unsystematic regional dust emission vigorously

The construction activity of the enclosed renovation project in the raw material yard is constantly pushed forward at the Baoshan base of Baosteel Co., Ltd. as scheduled. The project duration is shortened to 4 years from 6 years. At present, it's estimated that the regional dustfall can be reduced by 30% after the project is completed, unsystematic flowing dust can be decreased by 65% and the occupied area can be decreased by 25%. Meanwhile, solar photovoltaic cell panels are installed at the roof of the greenhouse for power generation, which is estimated to increase green power of 8MW.

Enclosed renovation activities were carried out on OC and OD stack bars in the Phase I and Phase II ore stack yard, and after renovation the stack yard can store a maximum of 575,000 tons. This project was handed over in September 2016 and put into operation in October 2016. Construction of coal silos of the Company was also being advanced steadily in the same year, of which a single one can store a maximum of 14,000 tons of coal.



Before renovation in 2014



Orderly carrying out ecology afforestation construction of the mill area and construct a green Baosteel

Baosteel has continuously increased environmental greening investment in the mill area in recent three years, so as to green, beautify, sweeten, clean and improve the environment and create a modern garden mill featuring in advanced concept, leading technology, pleasant surroundings and beautiful scenery. In 2016, the Company won the title of "National Advanced Enterprise in Greening", one of the only two enterprises in the steel industry winning the honor.

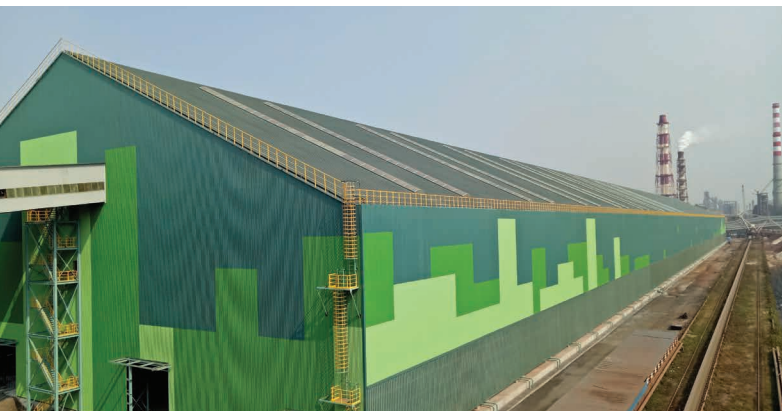
In Baoshan Base, based on the geographic features of being located along the river and tidal wetland and close to communities, construction of forest belt along the factory boundary has been completed basically. In the last three years, forests of about 500,000m² were completed. A protection forest belt along the mill boundary of 169,000m² was constructed only last year. From 2014 to 2016, ecology afforestation construction area within the mill area reached 1,248,000m² in total, which improves the greening function and landscape effect of the mill area. It includes 499,000m² of protection forest belt along the mill boundary, 583,000m² of greenery landscape enhancement of the trunk roads and some areas, 79,500m² of greening enhancement of the concentrated area of employees for "one factory, one scenery", and 86,500m² of human attractions in concentrated green land.





➤ ○ During renovation (2015-2016)

➤ ○ After renovation (2017-2018)



Greening works of new deer farm

Sika deer and blue peacocks in Baoshan Base are “supervisor” of the environment in the mill area as well as treasured things of the staff. In 2016, the sika deer and blue peacocks moved to a new residence. The new deer farm with total floor space of about 14,857m² includes a peacock zone and a sika deer zone. Supporting greening and infrastructure are sufficient. More than 50 sika deer and more than 90 blue peacocks are raised in total. The deer farm will become a research laboratory for regional ecological community and a practice base for the teenagers from the community.



Strengthening disclosure of the enterprise environmental information

In 2016, Baosteel strengthened information disclosure and increased monitoring factors of pollution sources at state-controlled discharge outlets. In the flue gas pollution source monitoring information, factors such as mercury, blackness, dioxin and fluoride have been added, which are monitored every quarter or half a year and disclosed; wastewater pollution source monitoring complies with the industry discharge standard and all pollution factors are monitored and disclosed; and 20 monitoring factors in the steel industry and 14 monitoring factors in the coking industry are monitored and disclosed every month. No out-of-limit conditions existed in the whole year and pollutants were discharged under certain standard. At the beginning of every year, we will prepare a self-monitoring and information disclosure scheme and report to Shanghai Environmental Protection Agency for filing. At the end of each year, we will prepare a self-monitoring report and submit to the local environmental protection agency for filing. Zhanjiang Steel has invested RMB 10 million in establishment of two environmental management information systems, namely, environmental monitoring management system and secondary resource management system, so as to know environment condition and pollutant discharge condition in real time and prevent abnormal discharge.

Baoshan Base has achieved release of ambient air quality Internet-linked to local meteorological agencies, ensuring real-time analysis of ambient air quality in the area of 30km², and sends real-time air quality information to surrounding communities by multiple means including mobile APP.

← New deer farm



8.1.2 Resource Sharing and Recycling

Baosteel makes full use of the characteristics of process equipment of the steel enterprise and plays an important role in energy and resource transformation and utilization, actively engages in urban industry development, achieves resource contribution to the city and resource sharing with the city, and promotes development of recycling economy of the city.

Energy sharing

Baosteel pursues the target of recycling all energy to be recycled and vigorously prompts residual heat resource recovery technique and projectized utilization. Through new project modes such as energy performance contracting, low temperature exhaust heat as urban clean energy alternative and for supplying heat to community, has been developed to a scale and mature operation mode, which provides support for the urban clean energy substitution project of coal-fired (heavy oil-fired) boiler. The Company also vigorously prompts optimized distribution and resource sharing of regional water resource and power system.

Efficient utilization of low temperature exhaust heat

Baosteel uses low temperature exhaust (waste) heat such as sintered low temperature flue gas and diffused low pressure steam which cannot be used for production, to produce domestic hot water of about 90°C and then store it in hot water tanks, and conveys residual heat energy with a mobile heat supply vehicle to surrounding users for use to replace previously used coal-fired (heavy oil-fired) boilers of social users. By the end of 2016, we have achieved a capacity of 0.5 MTPA hot water for surrounding communities.



Optimized utilization of power resource

Baosteel supports urban green power dispatching, guides staggering power consumption, improves the power factor (at least 0.90) through optimization of power supply and distribution system, and has obtained award of RMB 11.7776 million for factor adjusted power prices.

Efficient utilization and joint handling of solid waste resources of urban steel mill

The ecological chain in nature shows that everything can be recycled. Similarly, for urban ecosystem, there are no actual wastes but only misplaced resources. Baosteel achieves continuous innovation and breakthroughs in joint handling of urban wastes with large metallurgical furnaces, and the conversion process of metallurgical waste resources from social comprehensive utilization to construction materials serving market is accelerated continuously.

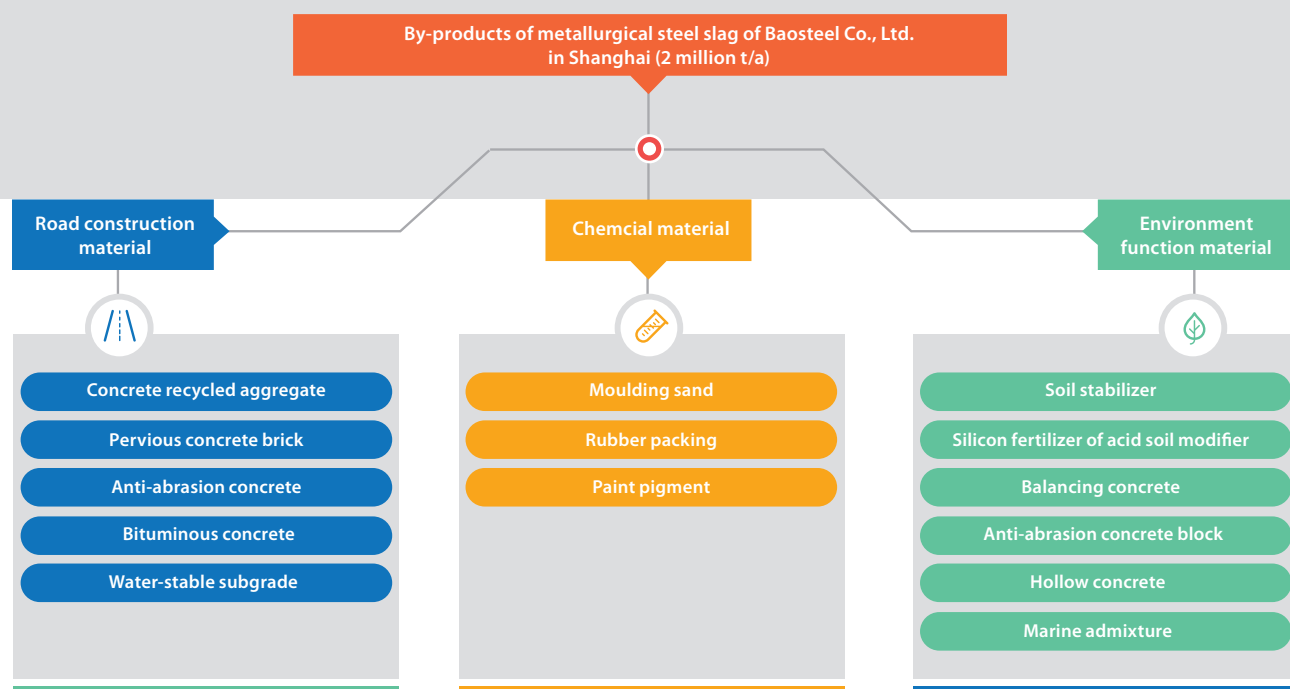
Recovery of waste paint buckets to support urban dangerous waste handling

Baoshan Base actively explores and practices "zero-waste" handling of social waste paint/coating buckets and has achieved mature and stable technologies of waste bucket pretreatment, conveying wastes to converter (replacing steel scrap), steel productization and whole-process environment monitoring. In 2016, recycling projects of conveying waste paint buckets to converter served 165 social organizations and waste paint/coating buckets of 8,972t were received and handled, achieving environmentally-friendly discarded metal recycling and handling 1/3 of waste metal buckets in Shanghai. The technology is gradually applied to other steel bases.



Metallurgical steel slag supports development of sponge city

Metallurgical steel slag is rich in iron elements and silicon-based and calcium-based inorganic material compositions and can be used as base materials of road construction material, chemical material and environment function material. During recycling application, we have obtained 74 patents, of which patent for invention accounts for 67%. In addition, we have promoted to prepare one national standard, one industry standard, five Shanghai standards and ten enterprise standards of comprehensive utilization products of metallurgical slag. In the planning for Urban Steel Mill, it is key work to promote metallurgical slag to serve construction of sponge city. In 2016, Baoshan Base started a construction project of steel slag processing center and productization of all slag was completed.



Be willing to use high performance and scale-economy cost to serve major projects of Baoshan District in the "13rd Five-year Plan" period.

- At present, market sales of RMB 1.2 billion have been achieved and it is mainly applied in Baosteel in Baoshan District.
- 74 national patents of which patent for invention accounts for 66.7%
- Preparing one national standard, one industry standard, five Shanghai standards and ten Shanghai enterprise standards of comprehensive utilization products of metallurgical slag

Product name	Product performance	Cost performance	Application
Pervious concrete and brick	Stability higher by 100% Specific gravity greater by 40% Strength higher by 50% Permeability performance higher by 250%	The cost is higher than common road construction bricks by 15% but it will become equal after up-scaling.	Sidewalk Landscape pavement Community pavement Special field leveling
Anti-abrasion concrete	High strength and stability High cohesiveness with cement Super abrasion resistance Easily-molding surface material	The cost is equal to common road and will be further reduced after up-scaling.	Sidewalk Landscape pavement Community pavement Special field leveling
Steel-slag bituminous concrete	High strength Abrasion resistance High density	The cost is lower than common C15 concrete by 5-7%.	Expressway Grade-I highway Municipal bituminous road Other high-grade highways
Dry-mixed mortar	1.5 times of the fastening strength of cement High cohesiveness with indoor and low-water-absorption stone and high-expansion construction material	The cost is lower than portland cement by 15%.	Special subgrade fastening material Anti-abrasion flooring hardener Repairing and filling mortar Tile bonding waterproof material
Concrete recycled aggregate	Be used for replacing natural rubbles High performance Meet international II-class aggregate requirement	The cost is lower than rubble aggregate by 20-30%.	Special subgrade fastening material Anti-abrasion flooring hardener Repairing and filling mortar Tile bonding waterproof material

Product name	Product performance	Cost performance	Application
Steel-slag molding sand	High rigidity High cyclic utilization rate (8 times) 100% utilization of de-rusted tailings	The cost is lower than common blowing molding sand by 10%.	Ship repair Fabrication of steel structure Container repair
Rubber steel-slag packing	Improve strength Improve abrasion resistance	The cost of rubber packing is reduced by 15%.	Tire and other rubber products
Steel-slag paint pigment	Green and environment friendly, non-poisonous and harmless, free of heavy metal Be widely applied to various anti-rusting paint Low oil absorption, good dispersion, good stability, layering resistance, no paint leakage Good weather resistance and tinting strength and covering power	The coating cost of metal primer is reduced by 10%.	Packing of anti-rusting primer, intermediate paint and finishing paint Anti-corrosion primer of steel structures

Product name	Product performance	Cost performance	Application
Soil stabilizer	It is green, environment friendly and low-cost compared with cement.	Save much cement consumption and need nearly zero cost.	Compaction and stabilization of soil on road base
Acid soil modifier	Efficient silicon fertilizer Stable and safe composition Silicon content exceeding 30% Acid soil modification	The cost is lower than burnt potash feldspar powder for agriculture by 50%.	Silicon fertilizer, widely applied to planting of bamboo, paddy, corn, peanut and apple.
Weighting anti-abrasion concrete block	High strength High density Abrasion resistance Good scouring resistance	Compared with concrete, RMB 14.5 Yuan will be saved per cubic meter.	Dolosse of flood prevention and wave protection works
Hollow concrete	Improve compatibility of marine ecology Effects on ocean comply with soil environment requirements.	Fishery ecology effect demonstrated through long-term practice	Artificial fish reef
Marine admixture	High compactness, low permeability, few defect Good marine corrosion resistance Low hydration heat Good performance High durability Meet the design requirement of service life of 100 years of structure concrete	The cost is higher than current admixture by 10%.	Donghai Bridge Yangshan Deep-Water Port Zhanjiang Project

8.2 Helping Urban Industry Development

8.2.1 Urban Strategic Emerging Industries

Baosteel actively engages in urban industry development, and provides support for development of urban strategic emerging industries based on its characteristics.

Developing a steel sharing service platform

In recent years, we actively develop a steel sharing service platform – Ouyeel, further establish four sub-platforms of resources, international, chemical and information based on the seven sub-platforms of E-commerce, logistics, finance, material, data, procurement and Bsteel, and thus form a complete whole industry chain service system. In addition, Ouyeel vigorously promotes construction of offline capability and accelerates service product innovation. The platform business volume (amount) has been increased rapidly and value-added ability of logistics, finance, data and processing has improved a lot. In the whole year, the steel GMV was 38.76 million tons, over-fulfilling the “Thousand Storehouse Plan”. The amount of third party payment reached RMB 120 billion. The market share and whole value of steel E-commerce have increased a lot, thus establishing its leading position in the industry.

Accelerating smart manufacturing

In the new planning period, Baosteel Co., Ltd. regards smart manufacturing as one of its five core abilities to be actively developed, so as to improve cost, quality and service competitiveness, achieve new competitive advantage and become the leader of smart manufacturing in the steel industry in China. At present, 1580 hot-rolling smart workshop of Baosteel Co., Ltd. has become the demonstration pilot of smart manufacturing confirmed by the Ministry of Industry and Information Technology of the People's Republic of China. It is known that Baosteel Co., Ltd. has selected 23 pilot projects in recent two years and the investment is expected to exceed RMB 1 billion. For smart equipment, we are promoting robot application in areas of stokehold work of blast furnace, steel making and steel pouring and slag salvaging of cold-rolling zinc pot. At present, there are 149 robots in service and under construction. With development of smart manufacturing, we will further improve product quality, increase production efficiency and reduce production accident risk through unmanned operation of some posts with high risk.



Actively engaging in carbon emission trading

Baosteel Co., Ltd. has completed implementation and settlement work of 2015 carbon emission quota successfully, indicating that Baosteel has achieved periodical results in Shanghai 2013-2015 carbon emissions permit trading pilot work and completed relevant work in the pilot period. In the pilot period, the carbon emission of Baosteel has been reduced year by year. The accumulative carbon emission is lower than the quota allocated by Shanghai government by 5%.

8.2.2 Technology Output

Baosteel Co., Ltd. changes the strategy of technology from initial “introduction, digestion and absorption” to “introduction, digestion, absorption and innovation” and now it conducts technology output through the technology trading platform with Baosteel’s characteristics, thus making contributions to sustainable development of the whole industry. In 2016, technologies of Baosteel with proprietary intellectual property rights such as BSSF slag treatment equipment and technology, Baosteel sintering flue gas recycling technology, optimized control technology of residual steel of continuous casting ladle and Baosteel spray forming technology, were output to domestic and overseas steel enterprises, which helped our peers improve steel production process, equipment and energy-saving and emission-reduction technology. Baosteel undertakes responsibilities of economy, environment and society and makes efforts to realize the strategic goal of becoming “one world first class steel enterprise respected by the society”.





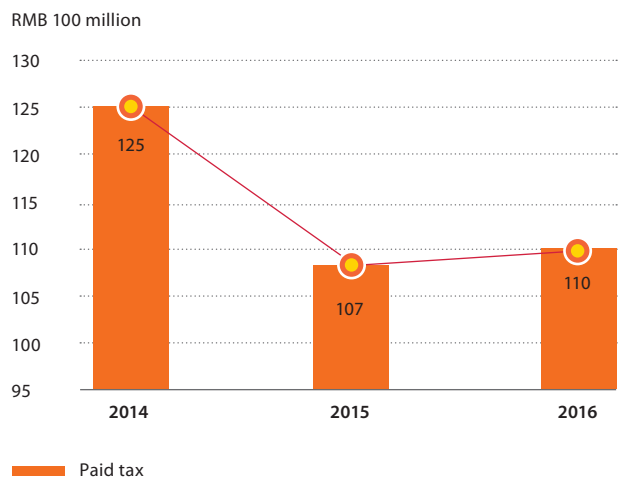
8.2.3 Finance and Tax Constructions

Baosteel gives back to society through honest operations and with good performance. In 2016, we turned over various taxes of about RMB 11 billion in total to the state. Due to good tax-paying credit, the Company has obtained the honor of "Shanghai A-class Taxpayer" for consecutive years.

Baosteel complies with various national tax laws and codes strictly and uses relevant preferential policies properly. Tax deduction and exemption in 2016 is as follows:

1. As per income deduction policy for comprehensive utilization of resources, income tax of about RMB 26 million was exempted in 2016.
2. As per weighted deduction policy for technology R&D expenses, income tax of about RMB 0.311 billion was deducted in 2016.
3. As per the policy of using investment of special equipment (environmental protection, energy and water saving and safe production) to offset corporate income tax, income tax of about RMB 10 million was exempted in 2016.
4. As per weighted deduction policy for salary of the disabled, corporate income tax of about RMB 2 million was deducted in 2016.
5. As per the policy of special financial support for high-tech achievement transformation project in Shanghai, financial aid of RMB 35 million was received in 2016.

Note: customs value-added tax and customs duties are included in the tax data.

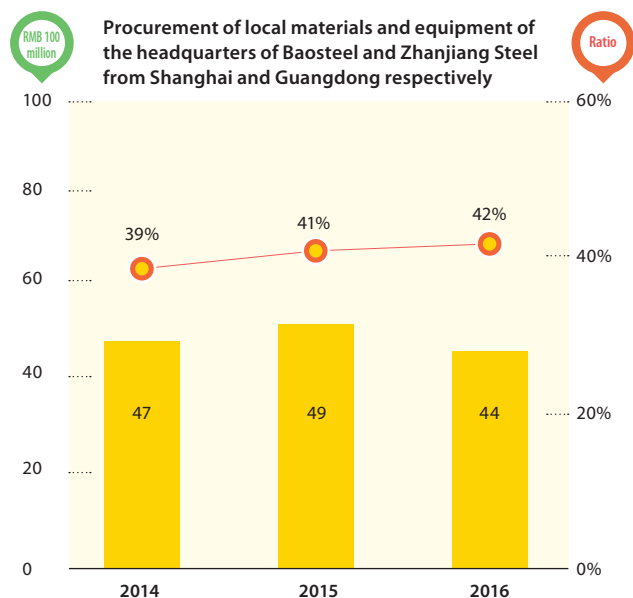


8.2.4 Support for Enterprises

Baosteel actively fulfills its social responsibility, supports development of local enterprises and small and medium enterprises based on its solid capital strength and overall control capability of market, establishes a close relationship with the local market, and promotes development of local economy.

Supporting development of local enterprises

In recent three years, actual performance data of local procurement of materials and equipment from the headquarters and Zhanjiang Steel is shown as follows (Manufacturing enterprises registered in Shanghai and Guangdong which meet the procurement demands of the headquarters and Zhanjiang Steel respectively are regarded as local suppliers).



Supporting small and medium enterprises

In 2016, the headquarters recovered waste materials and equipment of 85,800t in total, including waste refractory material of 50,600t, waste material of 27,800t and zinc slag of 7,400t. Waste cold rolls (silicon-containing steel rolls) and some hot rolls were recycled by Baosteel Roll Technology Co., Ltd. and Nantong Roll Factory respectively, so as to help the enterprise to reduce its operation cost and relieve its cost pressure.

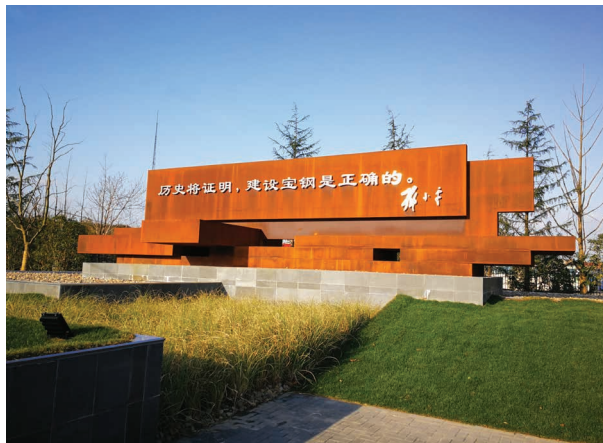
8.3 Co-building Wonderful Urban Life

8.3.1 Enriching urban cultural life

In the reform and development practice of more than 30 years, Baosteel has created Baosteel culture with "spirit of strictness, road of study and innovation and target of striving-for-the-best" as the mainline and "Sincerity & Coordination" as the core value. Baosteel culture is the spiritual wealth created by all Baosteel people and the power source to promote a new undertaking of Baosteel. In the process of building urban steel mill, Baosteel people enrich the cultural connotation of Baosteel with urban culture and actively integrate Baosteel culture into urban dominant culture with an open mind.

"History will show building Baosteel is correct."

On Dec. 23, 2016, Baosteel Co., Ltd. held a completion ceremony for the monument and square of "history will show building Baosteel is correct". This expresses that we will remember the lofty aspiration of "serving our country with steel" and we are devoting ourselves to becoming the best environmentally friendly practitioner and establishing an urban steel mill with active actions.



↑ The Memorial Square indicating that "history will show building Baosteel is correct."

They say: "Baosteel is very large and clean".

In August 2016, nearly 200 children of "Baoshan-Yecheng Teenager Hand-in-Hand Summer Camp" from Yecheng County, Xinjiang visited the mill area of Baoshan Base.

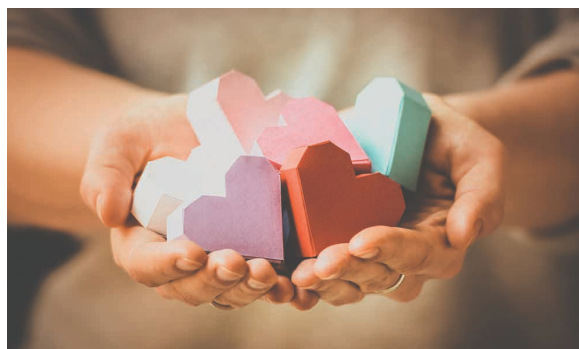
They benefited a lot from the visit. They saw the most modern steel enterprise in China and realized that there is also beautiful scenery in a steel mill. Near the end of the visit, the children were still excited and one of them said: "Baosteel is very large and clean".



8.3.2 Support Development of Public Welfare

Baosteel Co., Ltd. adheres to the principle of “people first” and is symbiotic with the city. While creating values for various stakeholders, we also give back to society and participate in various charitable donations and public welfare actions.

In 2016, Baosteel Co., Ltd. donated RMB 16,296,000 outwards, where RMB 14,196,000 was from the headquarters and RMB 2,100,000 was from subsidiary companies. External donations were mainly used to help and support the poor and conduct new rural construction and comprehensive environment improvement.



Donating organization	Organization receiving donations	Amount (RMB 10,000)
Headquarters	Poverty Alleviation and Development Office of the People's Government of Yunnan	1284.00
	Donation for environment improvement of Yuepu Town and Zhangmiao Subdistrict Office	130.00
	Donation for the activity of “2016 Chinese Festivals” of Japanese enterprises in China	5.60
Zhanjiang Steel	Donation for poverty alleviation of Dongshi Village, Nanxing Town, Leizhou City	130.00
	Zhanjiang Sanling Forest Park	80.00
Total		1629.60

[Case]

Baosteel actively fulfills its social responsibility. Young employees of Baosteel organize children with cerebral palsy together with Tongxinyuan (a volunteer organization) to visit the mill area. We also set beneficent funds of RMB 3000 for this visit.



MORE LOVE

8.3.3 Targeted Poverty Alleviation

Summary of targeted poverty alleviation

Baosteel Co., Ltd. actively participates in various poverty alleviation projects. You will find people from Baosteel in various poverty alleviation projects. Through a series of targeted poverty alleviation measures, we have completed a series of unit-to-unit aid programs, poor student aiding projects and infrastructure improvement projects in the poor areas.

See the list of 2016 targeted poverty alleviation of listed companies for details.

Unit: RMB 10,000; Currency: RMB

Index	Quantity and Present Suitation
I. Overall Conditions	As per the plan, Baosteel actually provided aid funds of RMB 9,840,000 to four counterpart counties and Pu'er City, involving 16 projects. Including: nine entire-village advancement projects of which four are completed; five industry support projects of which three are completed; one education project: aid the poor students who were admitted to a university in 2016 and 120 students obtained the funds; and one municipal-level project: country doctor training project, 350 country doctors received the training. Add poverty alleviation funds of RMB 2,000,000 and RMB 1,000,000 for Pu'er City and Guangan County, Wenshan Prefecture respectively.
Where: 1. Funds	RMB 12,840,000
II. Itemized inputs	
1. Industry development for shake-off-poverty	RMB 4,200,000
Where: 1.1 Type of industry poverty alleviation project	<input checked="" type="checkbox"/> Agriculture and forestry poverty alleviation
1.2 Number of industry poverty alleviation projects (Nr.)	10
1.3 Input of industry poverty alleviation projects	RMB 4,200,000
1.4 Number of people getting rid of poverty among people in the poverty archives (person)	576
2. Employment transfer for shake-off-poverty	RMB 690,000
Where: 2.1 Input of vocational training	RMB 690,000
2.2 Number of people receiving vocational training (person-time)	350
3. Relocating in other places for shake-off-poverty	
Where: 3.1 Quantity of employment for relocated households (person)	
4. Education for shake-off-poverty	RMB 150,000
Where: 4.1 Input for aiding the poor students	RMB 150,000
4.2 Number of poor students receiving the aid (person)	120
5. Health for poverty alleviation	
Where: 5.1 Input of medical and health resources in the poor areas	
6. Ecological protection for poverty alleviation	
7. Catch-all guarantee	
8. Social poverty alleviation	
9. Other projects	RMB 7,800,000
Where: 9.1. Number of projects (Nr.)	11
9.2. Input	RMB 7,800,000
9.3. Number of people getting rid of poverty among people in the poverty archives (person)	490

Follow-up targeted poverty alleviation plan

As per the spirit of "targeted poverty alleviation" with industry support from the Party Central Committee and the mission requirement of shake-off-poverty of poor counties in Yunnan assigned to Baowu Group, Baosteel Co., Ltd. is planned to provide targeted aid funds of RMB 13,000,000 to Yunnan in 2017. Including: RMB 9,500,000 for Pu'er City and targeted poor counties and RMB 3,500,000 for Guangan County. For the overall structure of planned support projects, the input ratio for entire-village advancement, industry development and education and training is 5:4:1.

Note: the above data only refers to the targeted support projects in Yunnan under control of the labor union. For aids for Xinjiang and Tibet in other tables, we cannot fill in specific data since the work is out of control of the labor union.



APPENDIX

Stakeholders Q&A



Questioner:



Answer:



Questioner:

How to consider de-capacity? Does Baosteel Co., Ltd. have a de-capacity mission? What are the effects?

Answer:

Supply-side reform of the steel industry is to promote industry transformation and upgrading and competitiveness increase by optimizing the total supply quantity and structure of the industry. The main mission at present includes "de-capacity, de-leveraging, de-stocking, cost reduction and improving weak links". This is an inevitable choice to make Chinese steel industry adapt to industrialization and urbanization development of China and to respond demand decrease. It is also good for stable development of the global steel industry. Viewing from experience of western developed countries, merger and restructuring is the most reliable way to promote supply-side reform. The enterprise will achieve de-capacity through integration and coordination after reorganization, so that the enterprise may increase R&D input and improve efficiency.

As a state-owned enterprise directly under the Central Government, Baosteel actively drives supply-side reform, prepares Scheme of Solving Excessive Industrial Capacity of Baosteel and signs Liability Statement of Central Enterprise on Solving Excessive Iron, Steel and Coal Capacity and Realizing Predicament Removal Target with the State-owned Assets Supervision and Administration of State Council. In November 2016, Baowu Group issued the latest capacity reduction plan, changing the target of reducing 9.20 million tons of excessive steel capacity within three years from 2016 to 2018 to the target of reducing 11 million tons within two years from 2016 to 2017. As per the liability statement of Baowu Group on reducing capacity, Baosteel Co., Ltd. will reduce 4.65 million tons of crude steel capacity and 470,000t of pig iron capacity within 2016-2017. Baosteel Co., Ltd. has completed the above two-year de-capacity mission in advance by the end of 2016. Assets and liabilities related to de-capacity have been subject to proper financial handling as per the plan. Relevant personnel are arranged as per the progress which will not bring uncertain factors to follow-up operation.



Questioner:

During Baosteel's merger with WISCO, how to strengthen uniform control and maintain vitality of basic units at the same time?

Answer:

In the integration, Baosteel Co., Ltd. starts a new integration model in the steel industry of China. We establish five working teams to ensure concentrated marketing, concentrated procurement, concentrated R&D, concentrated finance and uniform information, so as to prevent competition between manufacturing bases, make full use of integration and coordination and ensure maximizing the benefits. In addition, we establish four technical management committees of iron making, steel making, hot rolling and cold rolling, carry out benchmarking management, break organization interface, popularize good practice and solve local problems.

We will prepare first-day action plan, 100-day action plan, one-year action plan and 3-year action plan and finally achieve a consistent centralized management mode which is widely applied by large Korean and Japanese steel enterprises. In order to achieve the goal, enterprise culture and information which is the advantage of Baosteel Co., Ltd., is required. We are looking forward to creating a new integration road through the way.



Questioner:

Please introduce Zhanjiang Base.

Answer:

In 2016, Baosteel Zhanjiang Iron & Steel Co., Ltd. actively overcomes difficulties of production line climbing of 1# blast furnace system, project construction and production arrangement of 2# blast furnace system at the same time, controls and monitors the condition of equipment of production lines in operation, ensures stable production, and continuously exploits potentiality of whole-process cost reduction. The cost of molten iron is nearly the same as that of Shanghai Base. The processing cost difference in each procedure with other bases is gradually lowered. Due to successful production of new production lines and cost competitiveness, Zhanjiang Steel achieved positive cash flow in April. Zhanjiang Steel was put into full production in November 2016. In the future, Zhanjiang Base will stand in Southern China, radiate towards Southeast Asian market, stabilize manufacturing ability, form low-cost ability quickly and become a carbon steel sheet factory with the highest efficiency in the world.



**Questioner:**

The price of iron ores has been increasing a lot since 2017. What about effects on future profit increase of the factory?

Answer:

Baosteel Co., Ltd. focuses on the main business of steel, carries out differentiated competitive strategies and provides high-end products and services to customers. Therefore, effects of price fluctuation of raw materials on our business are relatively small. Even if the price of iron ores keeps high, we still have strong competitiveness. We never doubt that.

In addition, we keep an eye on price increase of iron ores. Iron ores as bulk commodity is becoming financial derivative product gradually. The oscillation amplitude becomes wider and period becomes shorter. Since the fourth quarter of 2016, sharp increase of ore price is beyond expectation. The main viewpoint on market is that the price of iron ores will be back to normal in the future. In the future, we will continue to track and analyze supply and demand and competitive situation of iron ores, and regulate the procurement of raw materials dynamically.

**Questioner:**

You suffered great loss in the third quarter of 2015 due to exchange rate changes and RMB devaluation is clear in 2016. What about your countermeasures?

Answer:

Since the second exchange rate reform in 2015, we have completed most switching of foreign currency financing. At present, the foreign currency financing we hold includes 500,000,000 Euro debts and 500,000,000 dollar debts. In early 2016, we prepared an exchange rate and interest rate risk scheme as per various foreign risk exposure conditions. For our long-term foreign currency financing, we lock in some risks through allocating dollar assets. For future payment exposure, we prepare corresponding management strategies. We carry out forward foreign currency purchasing in advance for some payment exposures and lock in and hedge risks in advance under the general trend of RMB devaluation. In addition, reserve some residual exposures. Carry out spot transaction flexibly during two-way fluctuation of exchange rate. Maintain management initiative in case of accidental great RMB upvaluation.

**Questioner:**

What is the main capital source of Ouyeel at present? Will you introduce external capital or transfer some control rights?

Answer:

The business model of Ouyeel is mainly to create offline service ability from the aspect of serving customers. It will not be engaged in simple trade but will pursue to obtain service adding values from serving merchants. Therefore, the financing demand is low and profit will increase slowly. Ouyeel proposes a development concept of "co-building and sharing" at the beginning of its foundation. Equity opening of Ouyeel is undertaken. However, being different from the way of internet companies on market, the purpose of equity opening is to introduce business cooperators to improve the service ability for customers. External capital will be introduced and control rights of Baosteel will be reduced in the future.

**Questioner:**

Baosteel Co., Ltd. promotes environmental management in recent years. What are main actions in gas and water pollutant emission reduction?

Answer:

We promote great-leap-forward development of construction of an urban steel mill, conduct innovation research of whole-process emission reduction and lead development and application of demonstrative emission reduction technologies. We conduct denitration transformation for sintering flue gas purification plant and develop the first sintering flue gas SCR denitration plant in China. For coke oven flue gas purification, we cooperate with scientific research institutions and jointly develop the technology of coke oven flue gas "alkali desulfurizing + catalytic reduction denitration"; the technology has been applied to Baoshan Base and Zhanjiang Base; the coke oven flue gas purification level reaches the leading position in the world; at present, we are planning to apply the technology to flue gas purification of other coke ovens. For many kinds of steel-rolling wastewater, we carry out research on source reduction, separate collection and treatment of steel-rolling wastewater; we have completed transformation of cold-rolling 2030 production line; cold-rolling wastewater is subject to efficient treatment and 100% recycling and will not be discharged outwards; at present, the technology is applied to other steel-rolling production lines, aiming for realizing zero emission of steel-rolling wastewater. We use constructed wetlands to conduct deep treatment and "zero emission" of coking wastewater, and the technology has been applied to Zhanjiang Base.



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