

XV. Environmental Management

The Company believes that certification of environmental management system is the foundation of successful environmental management. At present, all steel production enterprises under the Company have been certified for ISO14001 Environmental Management System. The non steel production units such as 13 out of the 17 service centers under Baosteel International, and Baosteel Chemical have also been certified for ISO14001 Environmental Management System.

In 2010, Baoshan Iron & Steel Co., Ltd. (Headquarters) became one of the first in the domestic steel industry to have passed the national energy management system certification. On the basis of summing up the work conducted in 2010, the Company continued to perfect the basic energy management, promoted the implementation of the "Three flows, one status" energy management system to production units, practiced benchmarking management in the whole Company for energy management, enhance the operation effectiveness of its overall energy management system, and promoted the energy management system certification work in an all-round way. Up to the end of 2011, the business units of Stainless Steel, Special Steel, Meisteel, and Nantong Baosteel all passed the Energy Management System Certification.

Clean production is one of the major tasks of the Company's green development. To that end, the Company compiled and distributed "2011-2013 Action Plan for Standardizing Clean Production and Enhancing Performance". In 2011, The headquarters, BNA, and Baosteel Chemical applied for and passed the clean production audit. The Stainless Steel and Special Steel Business Unit also passed the clean production re-audit.

Baosteel pays much attention to the global climate, and endeavors to reduce the green-house gas emission. For a long time, the Company reduced the carbon emission and pollutant emission in the process of steel production mainly by carrying out internal energy saving and emission reduction activities and driving the overall progress of the industry.

In 2011, the Company implemented 120 key technical revamping projects of energy-saving and emission reduction with remarkable effects achieved. Its energy-saving and emission reduction indicators continued to improve and the Company's major indicators for energy-saving and environmental protection remained at international advanced level. With the six professional energy-saving planning projects including efficiency power plant, high-efficiency furnace and kiln, high efficiency motor, waste heat utilization, energy saving of compressed air, and water treatment optimization as the platforms,

the Company consolidated the professional advantage of all departments, gave full play to the new mechanism of contract energy management, and sped up the implementation of energy-saving projects and promotion of energy-saving technology. The Company reduced the comprehensive energy consumption per ton of steel by 8 kg standard coal against the annual target, accumulatively saved 270 thousand tons of standard coal, and recovered 2.607 million tons of standard coal from waste energy. It successfully completed the addition of desulfurization device to the power generating unit and the sintering unit as required by the country, and exercised effective control over the emission concentration of various pollutants. In 2011, its total SO₂ emission as well as total COD emission from waste water reduced by 17%, and 5.1% respectively from those of 2010.

The Company continued to strengthen the comprehensive utilization of by-product resources, increased the reclaiming rate of by-product resources, carried out the research on and application of the technology for processing solid by-product resources, made good use of the iron and steel slag, and high-Zn iron slag to produce pig iron, and reused the limestone slurry in the power plant and the desulfurization device for sintering production. In 2011, the headquarters registered a comprehensive utilization rate as high as 98.81% and a reclaiming rate of 27.26% of the by-product resources, recording a historical high. To recognize the Company's efforts in comprehensive utilization, recovery and recycling of resource and its contribution to the construction of "energy-saving and environmental friendly" enterprises, Shanghai Association of Resource Utilization honored the Company as one of the Top Ten Enterprises of Comprehensive Resource Utilization in 2011.

The Company conducted its design, R&D and promotion of environmental friendly products in line with the guiding principle of "Three Substitutions" (substitution of steel grade, application, and materials). It committed itself to sharing the advanced environmental design and technology with users, and exploring new product designs in new fields by working cooperatively with users. The Company introduced the new products and new steel grades with outstanding environmental performance to users, advocating the transition from "cost and quality" to "cost, quality and environment" for the concept of product design. The Company exerted itself to produce more environmental friendly products in a bid to reduce the energy consumption and pollutant emission for the users in their application. The extensive application of Baosteel's high strength automotive sheets can remarkably reduce the CO₂ emission during the total life cycle of Chinese automobiles.

Moreover, Baosteel is also committed to become a "driver of green industry," with a view to spur on the green low carbon initiatives of the whole industrial chain. In recent years, Baosteel has been continuously launching the policies for green procurement and green marketing, which has played a good exemplary role for the green development of Chinese steel industry and other related industrial chains. In 2011, the Company released "Guide for Green procurement" (first edition) to introduce the Company's policy and measures of green procurement, which not only incorporated more green standards, green certifications and green manufacturing measures into its own production process, but also drove the suppliers to improve their management and fulfil the social responsibility of energy saving and environmental protection. In 2011, the Company exclusively released "Green Manifesto" and "Product Environment Declarations" in the steel industry, publishing the ecological information of five major types of carbon steel products. This publication provided the public with verifiable and

quantitative data for environmental performance of products, and was commented by the media as "of landmark significance in the green development process of domestic steel industry".

In 2011, the Company investigated and surveyed the literature for, analyzed and compared the international standards or industrial standards for auditing the enterprises' CO₂ emission. Based on this studies, and adopting the LCA theory and computing model, the Company made trial calculation of its carbon emission data, and compared the results with that of its international counterparts.

In 2011, the pipeline for the natural gas supplied directly from CNPC to Baosteel were completed and put into use, effectively relieving the Company's pressure of lack in gas natural supply and production restriction caused by the insufficient gas supply in Shanghai, and enhancing the Company's capability to guarantee energy supply for production.

Statistics and analysis of environmental protection cost have been conducted since 2003. The cost includes compensation cost and capitalized cost. In recent years, due to the large investment in desulfurization devices for power plants and sintering plants, the operation and depreciation expenses of environmental equipment have been occupying an increasingly higher percentage in the expensing items, which reached 80.37% in 2011. The Company's environmental protection costs in recent years are as follows:

Cost for Environmental Protection

Unit: RMB billion

Category	Items	2007	2008	2009	2010	2011
Expensing items and cost	Pollutant discharge fee, fee for system approval, environmental monitoring fee, facility operation fee, facility depreciation charge, labour fee, fee for transporting hazardous substances, fee for landscaping, fee for disposal of solid waste, investment for environmental improvement in new, revamping and extension projects, research investment, and others	2.326	2.783	3.072	2.968	4.174
Capitalized items and costs	Investment for environmental revamping in new, revamping and extension projects, and investment for environmental supporting facilities for "Three simultaneousness"	1.084	2.561	0.975	0.723	1.764

In 2011, the Company's major indicators for energy saving and environmental protection remained at international advanced level.

Technical Indexes for Energy Saving and Emission Reduction

Index	Unit	2005	2006	2007	2008	2009	2010	2011
Fresh water consumption per ton of steel	%	100	84.27	71.35	73.03	59.97	58.99	60.53
Aggregate amount of the recycled residue energy	%	100	112	121	162	171	189	246
General energy consumption per ton of steel	%	100	97.87	95.87	102.00	98.53	97.47	97.34
SO ₂ emission per ton of steel	%	100	83.97	66.67	60.34	46.84	31.65	24.05
COD emission per ton of steel	%	100	60.0	31.2	18.0	12.4	12.0	10.4
Overall utilization ratio of industrial solid waste	%	98.11	98.32	98.48	98.33	98.26	98.58	98.81

Note 1: Except "Overall utilization ratio of industrial solid waste", all of the other items are stated in relative terms with 2005 as base period.

Note 2: Due to mistakes in work, there were mistakes in the SO₂ and COD emission statistics from 2006-2010 in the 2010 Fact Book. Revision was made as in the above form.