

XVII. Environmental Operation

Environmental management system: In 2014, the Company's steel production unit, and other non-steel production units like 21 shearing distribution centers, and Baosteel Chemicals all passed ISO14001 Environmental Management System Certification. The plants and departments directly affiliated to the Company were recognized and recommended by BSI, an international authoritative certification organization to approve hazardous substance management system (QC 080000), becoming the first company passing the system certification among national large-scale iron and steel enterprises.

Energy management system: In 2013, the Company took the lead to draft the national standard (GB/T30256-2013) of Implementation Guidelines for Energy Management System in Iron and Steel Industry which has taken into effect since July 1, 2014.

Clean production audit: In 2014, the plants and departments directly affiliated to the Company passed the second round of clean production evaluation.

Energy saving and emission reduction & waste energy recovery: In 2014, the Company implemented 53 energy saving projects including 43 projects which have been put into operation, with annual energy-saving quantity of 142,700 tons. The comprehensive energy consumption/ton steel decreased 3kg standard coal compared to annual objective. 1.86 tons standard coal was recycled as surplus energy in the whole. In 2014, the emission quantity of SO₂ decreased 13% and COD decreased 2.0% on a year-on-year basis compared to that in 2013.

Comprehensive utilization of renewable: In 2014, the Company made another great achievement in secondary resources utilization. The comprehensive utilization rate and the re-production utilization rate of byproducts reached 99.15% and 26.76% respectively. In 2014, the company greatly drove the project construction of re-production and re-process of industrial solid wastes, determined the sites of slag processing and rotary hearth furnace after several times of optimization and discussion in site selection, process design and operation model, adjusted and professionally reviewed the research scheme of slag processing projects and metallurgical sludge supporting projects, and established the transformation schemes of public, assistive and relevant facilities in metallurgical sludge supporting projects. The industrial waste projects and other solid wastes were processed in the existing dry coal shed according to the company plan and the preliminary scheme was formed. The Company steadily drove the implementation of environmental improvement scheme in solid waste storage, and gradually hardened the road, added enclosures, optimized operation site, etc.

Application demonstration of new energy technology: In December 2014, 20MW PV electricity generation project of Meishan Iron & Steel was officially put into synchronized power generation. The project was the first new energy construction project of Meishan Iron & Steel and the largest roof PV electricity generation station in Jiangsu Province. The estimated annual energy output was 18.41 million degree and the total energy output was 460.25 million degree. Compared to thermal power, the project may save 159,000 tons of standard coals and reduce the emission of 410,000 tons CO₂, 1,350 tons SO₂ and 1176.5 tons NO_x.

The environmental protection cost of the Company includes expensed cost and capitalized cost. In recent years, due to the large investment in power plants and desulphurization facilities in sintering, the operation and depreciation expenses of environmental equipment have been occupying an increasingly higher percentage in the compensation project cost, which reached 77.7% in 2014. The following is a list of its environmental protection costs in recent years:

Cost for Environmental Protection

Unit: RMB100 million

Category	Items	2010	2011	2012	2013	2014
Expensed projects and costs	Discharge fee, fee for system approval, environmental monitoring fee, facility operation fee, facility depreciation charge, labor fee, fee for transporting hazardous substances, fee for landscaping, fee for disposal of solid waste, investment on new projects and updating and expanding existing projects, research investment, and others	29.68	41.74	28.49	22.47	23.98
Capitalized projects and costs	Investment in new environmental protection projects and on updating and expanding existing projects and other supporting projects	7.23	17.64	4.23	4.81	8.03

In 2014, the Company's major indicators for energy saving and environmental protection remained at international advanced level:

Technical Indexes for Energy Saving and Emission Reduction

Items	Unit	2010	2011	2012	2013	2014
Fresh water consumption per ton of steel	%	80.8	82.9	85.6	80.2	77.7
Aggregate amount of the recovered waste energy	%	116.7	130.2	111.1	96.3	93.7
General energy consumption per ton of steel	%	95.6	95.4	98.7	99.0	98.5
SO ₂ emission per ton of steel	%	52.5	39.9	35.7	30.1	26.6
COD emission per ton of steel	%	66.7	57.8	62.2	60.0	60.0
Overall utilization ratio of industrial solid waste	%	98.58	98.81	98.90	98.90	99.15

Note: The first five indexes indicate the improvement of indexes. The data given in the Table means the ratio of performance value that year against that in 2008.

The six index "overall utilization ratio of industrial solid waste" is taken as the performance value in that year.