



Natural Resources & Engineering Business

- Began commercial operation of a steel mill dust recycling plant
- Conducting feasibility study with SAIL for a joint venture in India to utilize the ITmk3[®] ironmaking process

Fiscal 2011 Overview

Orders in fiscal 2011 came to ¥29.3 billion, a 61.1% decrease compared with the previous fiscal year when an order for a large direct reduction plant was received. At the end of fiscal 2011, the backlog of orders stood at ¥70.0 billion.

In addition, fiscal 2011 sales were down 13.1%, from fiscal 2010 to ¥55.8 billion, and ordinary income decreased ¥2.7 billion year on year, to ¥0.3 billion.

Topics

■ SAIL and Kobe Steel Conducting Study for ITmk3[®] Project

In March 2010, Kobe Steel and Steel Authority of India Limited (SAIL) began working together on a preliminary study for a joint venture to utilize the ITmk3[®] ironmaking process. Because of its promising potential, the two companies subsequently agreed to establish SAIL-KOBE Iron India Private Limited, a joint venture company created to carry out a detailed feasibility study for ITmk3[®] commercialization.

The project consists of one ITmk3[®] ironmaking plant with a capacity to produce approximately 500,000 metric tons of iron nuggets per year. Kobe Steel and SAIL would have the right to utilize the iron nuggets produced at the plant in proportion to their equity share in the joint venture (Kobe Steel 50%, SAIL 50%) for their own use, or the joint venture may sell the nuggets directly on the market. The project would use iron ore from SAIL's mines. Non-coking coal, sourced within India, would be used as the reductant in the ITmk3[®] Process.

India's steel industry is expected to show continued strong growth. Through the ITmk3[®] project, Kobe Steel and SAIL can contribute to the development of India's steel market, and, consequently the country's development. The detailed feasibility study and environmental permit process are moving steadily ahead, with plans calling for the plant to commence operations in 2015.

■ Steel Mill Dust Recycling Joint Venture Begins Operation

Kobe Steel is using steel mill dust and iron ore fines from steel mills as raw materials to produce direct reduced iron (DRI). This enables iron to be recycled and put to effective use and zinc to be recovered. For this purpose, a joint-venture company called Nittetsu Shinko Metal Refine Co., Ltd. was established with Nippon Steel Corporation in October 2008. Construction of the steel mill dust recycling plant began in May 2010, and plant operations commenced in October 2011.

Nittetsu Shinko Metal Refine (equity share: Nippon Steel 70%, Kobe Steel 30%) operates a recycling plant that utilizes Kobe Steel's FASTMET[®] Process. In this process, steel mill dust is heated to a high temperature in a Rotary Hearth Furnace (RHF) and is quickly reduced to make DRI. At the same time, zinc in the steel mill dust is recovered. The recycling of steel mill dust, a by-product of the steel manufacturing process, is an extremely effective method for dealing with rising steel demand, especially in emerging countries, as well as escalating raw material prices. The DRI can be effectively used as an alternative raw material to purchased scrap or iron ore, and the recycled zinc can reduce the use of zinc ore. Recycling also promotes zero emissions.



Nittetsu Shinko Metal Refine's steel mill dust recycling plant