

# Steel Industry Fighting Global Warming via Int'l Cooperation

By Yamada Kenji

## Industry's Own "Sectoral Approach"

The steel industry has been promoting a "sectoral approach" at various levels, including international cooperation, in the fight against global warming.

### 1. Japan's Steel Sector

The Japanese steel industry mapped out the steel sector's plan as part of the business lobby Nippon Keidanren's voluntary action plan in December 1996 and is now making steady efforts to attain the challenging targets of the sectoral plan.

### 2. Japanese & Chinese Steel Sectors

The Japan-China Steel Industry Advanced Technology Exchange Meeting on Environmental Protection and Energy Saving was established in July 2005. The steel industries of the two countries have since continued to annually exchange technologies at the level of experts.

### 3. APP

The Japan-chaired Steel Task Force of the Asia-Pacific Partnership on Clean Development and Climate (APP) has compiled a handbook on advanced technologies, investigated the diffusion ratios of facilities for energy saving and environmental protection, and undertaken the evaluation of carbon dioxide (CO<sub>2</sub>) reduction potential. The task force has also agreed on a common boundary of evaluation for the first time in the world and is now investigating basic energy units. Henceforth, it plans to set targets, visit steelworks in such countries as China and India to undertake on-the-spot diagnoses, and carry out a demonstration project.

### 4. IISI

The International Iron and Steel Institute (IISI) announced a plan for the world's steel industry as a whole to combat global warming in May 2007. It has started to study the steel industry's own sector-specific approach with major steelmaking countries participating.

### 5. IEA

The IISI and the Japanese steel industry will cooperate in the G-8-commissioned study by the International Energy Agency (IEA) on the improvement of energy efficiency, based on recommendations hammered out at the St. Petersburg G-8 Summit. The IEA's Governing Board, at a ministerial-level meeting, issued a communique in May 2007, which said in part: "We call on the IEA to promote the development of efficiency goals and action plans at all levels of government, making use of sector-specific, benchmarking tools to bring energy efficiency to best-practice levels across the globe."

## Japanese Steel Industry's Voluntary Action Plan

Nippon Keidanren's voluntary action plan – a mainstay of Japan's program for attaining the goals set by the Kyoto Protocol – is steadily producing tangible results. As part of the plan, the steel industry reduced overall CO<sub>2</sub> emissions by 6.5% in 2005 even though its production was more than 10% higher than had been assumed for 2010. Moreover, Japanese steelmakers' energy-saving plans for the coming years aim to cut overall emissions by an additional 3.4% or so, making it likely that the steel industry will be able to achieve the target of reducing overall CO<sub>2</sub> emissions (energy consumption) by 10%.

Nonetheless, because the attainment of the target will be affected by the fluctuation of production, the steel industry as a whole has contracted to buy emission credits equivalent to 28 million tons (5.6 million tons per year) through the Clean Development Mechanism (CDM) and other channels in an effort to attain the target without fail (Chart 1).

The industry's effort for the reduction of CO<sub>2</sub> emissions is not limited to its own production process. It is characterized by no small contributions to interindustry partnership and international cooperation beyond the boundary of steel mills as instanced by

its products and byproducts that help to reduce emissions in society, as well as by the international transfer of technologies for emission reduction on a global scale.

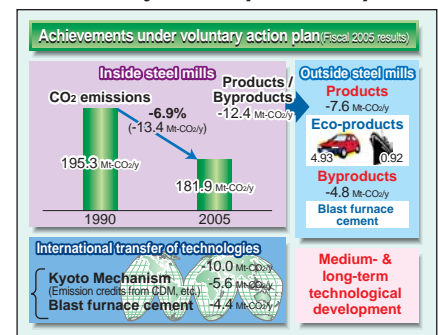
## Japan-China Exchanges on Environmental / Energy-Saving Technologies

Emerging economies, such as China and India, are expected to boost their steel production further in the years ahead. Accordingly, the transfer to these countries of technologies for environmental protection and energy saving may be considered a possible solution to the universal problems of reconciling the environment and the economy, and ensuring sustainable development.

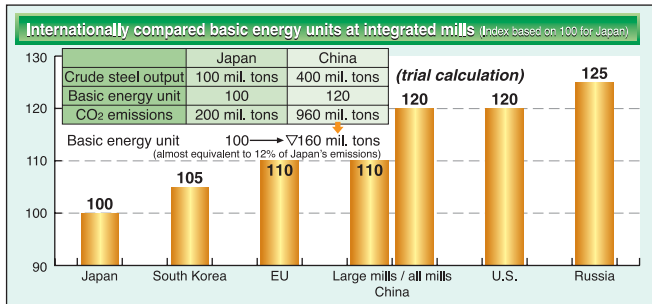
China's crude steel output is growing rapidly, reaching 420 million tons in 2006, six times the 1990 output, and accounting for 34% of the world total. The Chinese government's 11th five-year plan refers to the urgent need to take measures for environmental protection and energy saving.

The Japan-China Steel Industry Advanced Technology Exchange Meeting on Environmental Protection and Energy Saving was held in Beijing in July 2005. The meeting, attended by 200 delegates, including top leaders of the two countries' steel industries, produced an agreement that the Japan Iron and Steel Federation and the China Iron and Steel Association

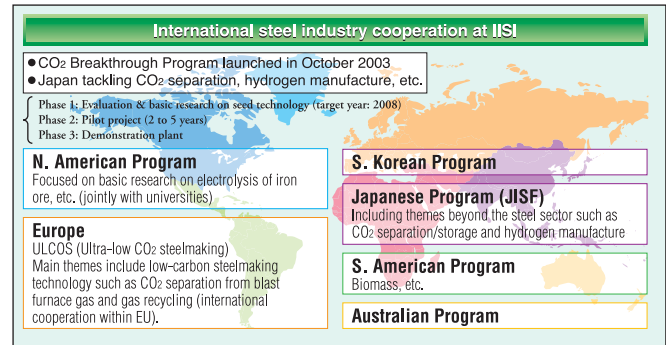
Chart 1 Progress in steel sector's voluntary action plan in Japan



Source : Japan Iron & Steel Federation

Chart 2 CO<sub>2</sub> reduction potential in China's steel industry

Note: Boundary, definition, etc. unavailable in Chinese data  
Source: Japan Iron & Steel Federation (hearings with Korea, etc.)

Chart 3 IISI's CO<sub>2</sub> Breakthrough Program

Source: Japan Iron & Steel Federation

“will continue exchanges of information and experts on environmental preservation and energy saving.” A working-level exchange meeting of experts took place in Oita City, southern Japan, in November 2006. The exchange of information and an intensive debate regarding specific technologies for environmental protection and energy saving were followed by a visit to the Oita Works of Nippon Steel Corp.

China's steel industry is marked by the great reduction potential of CO<sub>2</sub> emissions because of its large-scale production and low energy efficiency (Chart 2). Therefore, the transfer of various energy-saving technologies, developed by the Japanese steel industry, will prove highly effective. To facilitate the technological transfer, Nippon Steel set up an engineering firm in China in a joint venture with the Chinese side in October 2003. The joint venture is bearing fruit steadily.

### APP Activities for Environmental Protection / Energy Saving

The Steel Task Force is one of the APP's eight task forces. Six countries in the Asia-Pacific region – Japan, the United States, Australia, South Korea, China and India – account for 60% of the world's crude steel output. Moreover, they share the same technological basis, making a dialogue among them possible at the level of experts. The six countries have compiled a handbook for sharing relevant information, such as technologies for energy saving and environmental protection, and policies for the diffusion of those technologies. Entitled “State-of-the-art Clean Technology” (SOACT), it encompasses about 50 technologies for environmental protection and as many technologies for energy saving.

To grasp the current condition of those

technologies in the first place, diffusion ratios of 40 representative technologies are being investigated to determine the emission reduction potential of these technologies in the event of their diffusion ratios reaching 100% and to define barriers that obstruct their diffusion. Other tasks undertaken to date include comparative surveys on energy efficiency covering both boundaries and diffusions, and the basic units of pollutants and other environment-burdening materials.

In the autumn of 2007, Japan will dispatch experts to China and India at their request to investigate the current state of the environment and give advice on environmental improvement. In addition, a project for specific demonstration equipment is to be discussed as a flagship project.

Thus, the APP represents an effective bottom-up approach for actual emission reductions in those fields that have great potential for the reduction of CO<sub>2</sub> emissions. Japan wants to accelerate the transfer of its top-notch energy-saving technologies with a view to achieving emission reductions at a truly global level.

### IISI: Steel's Key Role in Sustainable Development

Since 2003, the IISI has carried out a “CO<sub>2</sub> Breakthrough Program” for drastic reductions in greenhouse gas emissions (Chart 3). So far, information has been exchanged on themes of technologies to be developed in the respective regions. At present, discussions are under way among the quarters concerned of the countries involved so as to establish a joint international project, based on those themes, from 2008.

A new IISI policy statement, announced on May 7, 2007, included a commitment to undertake medium- and long-term R&D “for new technology solutions to radically

reduce the level of CO<sub>2</sub> emissions” and also called on governments to “replace cap and trade emission regimes” with new policies that allow efficient companies to grow and the least efficient to decline. At the same time, the statement asked policymakers to “support long-term research initiatives for radical new technology solutions proposed by the steel industry” for further CO<sub>2</sub> reductions. “Governments also need to develop policies that encourage demonstration of these innovative technologies,” it added.

The statement also said the IISI “has launched a task force to develop global sector-specific approaches for CO<sub>2</sub> reductions” in the post-Kyoto Protocol period.

### Conclusion

Because global warming is a long-term problem of a global scale, high hopes are pinned on technological solutions.

When it comes to an equitable and practical international framework joined by major greenhouse gas-emitting countries, it is considered most effective to promote the transfer of existing technologies and the development of innovative technologies through international cooperation in each industrial sector that shares the same technological basis.

The Japanese steel industry for its part will continue to make a positive contribution to the global reduction of CO<sub>2</sub> emissions by not only practicing sector-specific approaches between Japan and China and through such international systems as the APP and IISI, but also promoting cooperation with other major industries. **J.S.**

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