Energy Saving & Cleaner Production

--Global Energy Challenges:
The Key Role for Business in Energy Efficiency, Technology Transfer and Emission Reductions

Han Jing
Environment & Resources Department
Bao Shan Iron & Steel Co., Ltd.
June 28th 2006, Brussels, Belgium
Bao Shan Iron & Steel Co., Ltd.
— The Most Modernized and Largest Steel Company in China

Data source: IISI

Shanghai, China
www.baosteel.com

Crude Steel Output (Million Ton)
Sales Income (RMB Million)

Operation Performance

Data source: IISI
Global Energy Challenges

Production, Energy & Emission

- Iron Ore
- Limestone
- Power Plant
- Coke
- Blast Furnace
- TRT
- Coke Oven Gas (By-product Gas)
- Steam Recovery
- Power Generation
- Steam Recovery
- Converter
- Converter Gas (By-product Gas)
- Continuous Cast
- Air Separator
- O₂, N₂, Ar
- Power
- Fuels (Gases)
- Water
- O₂, N₂, Ar
- Steam

- Sinter
- Power Generation
- Dust control
- De-sulphurization
- De-NOx, De-dioxin (planned)

- Blast Furnace
- TRT
- Slag (By-product)
- Recycled for cement
- Dust control
- Waste water treatment

- Rolling Mills
- Power, Water, LPG, Heavy Oil, NG
- Slag (By-product)
- Recycled for sintering, roadbed, etc.

- Coke Oven Gas (By-product Gas)
- Coke
- Sintering Ore
- Power, Water, LPG, Heavy Oil, NG

- coke Oven
- CDQ
- Power
- Fuels (Gases)
- Water
- O₂, N₂, Ar
- Steam

- Steam Recovery
- Dust control
- Waste water treatment

- Scales (By-product)
- Recycled for sintering

- O₂
- N₂
- Ar
Energy Saving & Cleaner Production – Actions

- Energy-saving processes, reduce consumption and improve exhausted energy recovery
- Energy management by centralized control and systematic optimization, reduce discharge and losses
- Environmental control specifications stricter than the state stipulations
- Technical reform in old plants to improve environment, the backward processes and equipments eliminated
- Comprehensive utilization of solid wastes
- Green products

Energy Intensity

- Dropped by 16%

[Images of Energy Center, Wind Net, Before and After comparisons]
Global Energy Challenges

Energy Saving & Cleaner Production – plans

- Continuously enhance investment in technical innovations and applications in energy-saving, work hard for energy intensity reduction by 7% compared to that in 2005 by 2010.
- Continuously strengthen environmental harness, largely reduce dust emissions, and implement de-sulphurization in all sinter machines and coal combustion power plants.
- Build the worldwide largest coal/ore reduction iron-making process Corex 3000 of less consumption and emissions.
- Continuously promote research in waste plastics recycling in coke oven and blast furnace, explore the recycle of waste tires.
- Research in the recycle of gypsum generated from de-sulphurization in power plant.
- Explore the development of hydrogen economy.
- Explore dioxin monitor and prevention in municipal rubbish and sewage.
- Build wind power station to develop renewable energy.
- Build inter-plant energy pipe-corridor to reduce discharge and pollution.
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