

Unit Profile :

Established in 1907, Tata Steel is Asia's first and India's largest integrated private sector steel company.

With its captive iron ore and coal mines and one of the world's most modern steel making and finishing facilities at Jamshedpur in eastern India, which includes a state-of-the-art Cold Rolling Mill complex, Tata Steel is among the lowest cost producer of steel in the world.

The 4 million tonne Jamshedpur plant, which produces both flat and long products, is undergoing a million tonne capacity expansion. The company intends to raise its capacity to 15 million tonnes per annum by 2010 through organic growth and acquisitions. The Jamshedpur capacity will produce 6.8 million tonnes and the balance capacity will be put up or acquired elsewhere in India and overseas. Tata Steel recently announced its first major overseas investment in NatSteel, Singapore, which will give it a manufacturing footprint in six countries in the Asia Pacific region and China.

Tata Steel's relentless quest for excellence through initiatives like ASPIRE, which combines TPM, Six Sigma, Total Operational Performance, Suggestion Management and Quality Circles, has reaped rich benefits. The company has been conferred the prime Minister's Trophy for the Best Integrated Steel Plant five times from the Indian Ministry of Steel. It was the first Tata company to win the JRD Quality Value Award, categorising its operations as "world class" under the Tata Business Excellence Model. It has been ranked among the top four world class steel companies by World Steel Dynamics, USA, for the past four years. It was also awarded Asia's Most Admired Knowledge Enterprise Award-2003 by Teleos, an independent Knowledge Management company of South Korea.

Products

Tata Steel's products include hot and cold rolled coils and sheets, galvanised sheets, tubes, wire rods, construction re-bars, rings and bearings. In an attempt to 'discommoditise' steel, the company has introduced brands like Tata Steelium (the world's first branded Cold Rolled Steel), Tata Shaktee (Galvanised Corrugated Sheets), Tata Tiscon (re-bars), Tata Pipes, Tata Bearings, Tata Agrico (hand tools and implements) and Tata Wiron (galvanised wire products). The Construction Solution Group explores new avenues for steel utilisation by techniques that are economical, use less natural resources and energy. Tata Steel has also developed "galvannealed" cold rolled steel with technical assistance from Nippon steel & Arcelor for high-end auto applications.

Corporate Social Responsibility

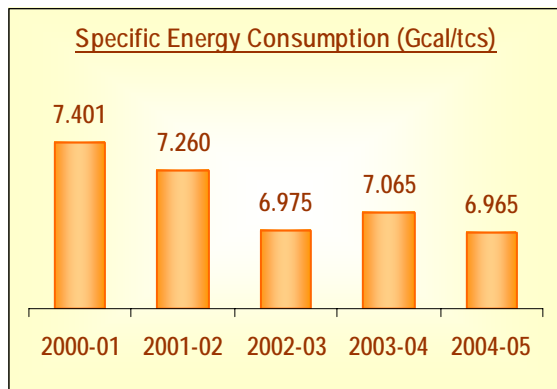
The welfare of its employees and the upliftment of the communities in which it operates are critical part of Tata Steel's guiding values and principles, inextricably interlocked with productivity at the steel plant. This belief has resulted in a mammoth social outreach programme covering the town of Jamshedpur (population 0.65 million) and over 600 villages in and around its manufacturing and raw materials operations. The company-run town of Jamshedpur has India's only ISO 14001 certified municipal services and is also amongst the six participating cities of the UN Global Compact Cities Pilot programme for addressing intractable social, economic and environmental issues in the urban context. The company has dedicated agencies for community welfare work in diverse areas such as education, community health and HIV/AIDS awareness, income generation for economic well-being, environment management, relief, sports, art and culture, etc. Regarded globally as a benchmark in corporate social responsibility coupled with its record of 75 years of industrial harmony, Tata Steel's commitment to its employees and the community remains the bedrock of continued sustainability.

Energy Consumption :

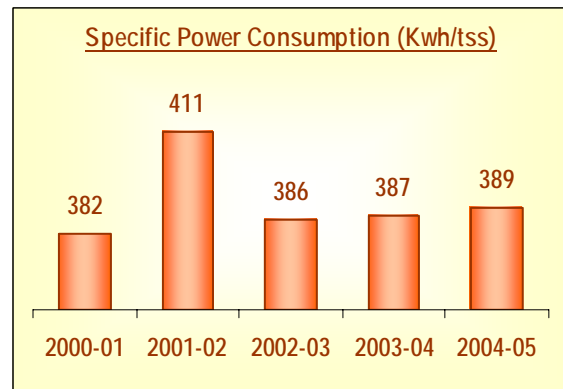
The energy consumption figures for the last three is as shown:

Sl.	Particulars	Unit	2002-03	2003-04	2004-05
a.	Light Diesel Oil	Tonne	1948	1192	2387
b.	Coking Coal	Tonne	335920	3406592	3378387
c.	Coal for injection in Blast furnaces	Tonne	158228	192960	177404
d.	Boiler/Middling Coal	Tonne	801569	716365	602987
e.	Electricity	10 ³ KWh	152214	1581139	1597917
f.	Plant Specific Energy Consumption	Gcal/tcs	6.975	7.065	6.965
g.	Total Manufacturing Cost	Rs. Crores	3055.53	3465.23	4696.18
h.	Total Energy Bill	Rs. Crores	1037.27	1042.37	1273.00
i.	Energy as percentage of total cost of production	%	1948	30.08	27.11

Thermal Energy Consumption



Electrical Energy Consumption



The electricity consumption for 2001-02 is inclusive of CRM (new unit)

Energy Conservation Commitment, Policy & Setup :

Sustainability and environment friendliness is at the core of every business. Tata Steel is fully aware of the fact that the energy supply is mainly supported by fossil fuels, whose reserves are limited and emission of carbon dioxide is caused by energy combustion. Hence it is committed to energy conservation efforts.

With the introduction of the "Energy Conservation Act", Tata Steel has reaffirmed its commitment to rationalization of energy use, matters relating to the recovery and waste utilization. To meet the commitment concrete measures for efficient use of energy, its recovery and waste utilization have been formulated. The company's efforts are focused towards the followings :

- Benchmarking of the processes & sub-processes, identification of gaps.
- Online monitoring of energy parameters (100%).
- State-of-Art instrumentation & Control
- Process Integration
- Waste Heat Recovery
- Enhancing awareness of energy efficiency by publicity & competitions.

The following activities are taken up each year to promote energy conservation & awareness:

- International Seminar on Energy Conservation was organized jointly by IIM & Tata Steel at Jamshedpur. The Conference was inaugurated by Steel Secretary, Government of India and more than 150 delegates participated.
- The detailed variance of stage wise energy consumption is analyzed on monthly basis & reported the concerned Departmental Chiefs & Heads for necessary action at their end to improve efficiency and reduction in specific energy consumption.
- Numbers of Aspire Self Initiated Projects are taken up in area of energy conservation all over the plant.
- Knowledge sharing for efficient use of energy through online Knowledge Management System. Various knowledge communities / sub-communities in the area of electrical energy, thermal energy & its conservation are working within the steel works.
- Oil conservation week / fortnight is celebrated every year where emphasis laid on conservation of petroleum products.

Note : *The organizational set-up for energy conservation has been documented in 13c of the application.*

The Energy Policy of the organization has been documented in 13e of this application.

Energy Conservation Achievements:

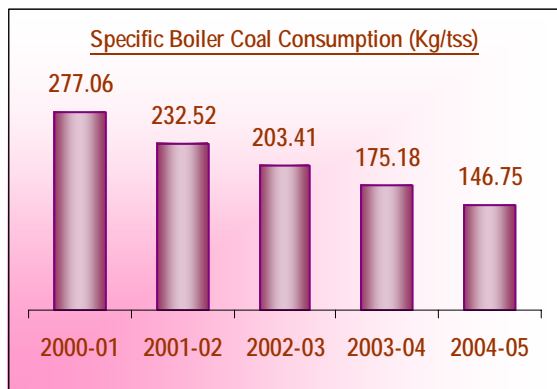
Energy Conservation achieved through introduction of new technologies, optimization of operational practices and process intensification during the five years are :

- Conversion of coal fired boilers for steam & power generation to By-product gas fired boilers.
- Retrofitting of power saving devices at Oxygen Plant.
- Recovery of flash steam at PH # 4 and its use in deaerators of boilers.
- Recovery of exhaust steam from turbo machines through Thermocompressors.
- Coal Tar and waste lubricant oil injection at Blast Furnaces
- Sensible heat recovery from "G" Blast Furnace Stove exhaust gases.
- Introduction of online monitoring and process integration for power & steam generation.
- Replacement of direct coupled HT drive by backward curved V/F drive at Power House 4.

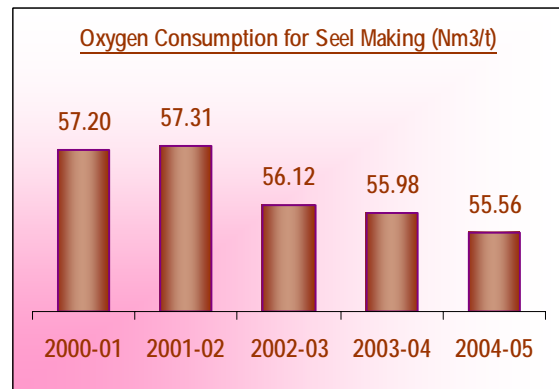
The energy conservation measures during 2004-05 have resulted in achieving

- Record lowest specific energy consumption of 6.965 Gcal/tcs
- Record lowest specific boiler coal consumption of 146.75 kg/tss.
- Record lowest specific oxygen consumption of 55.56 Nm³/tcs for steel making.
- Record lowest fuel rate at Finishing Mills.

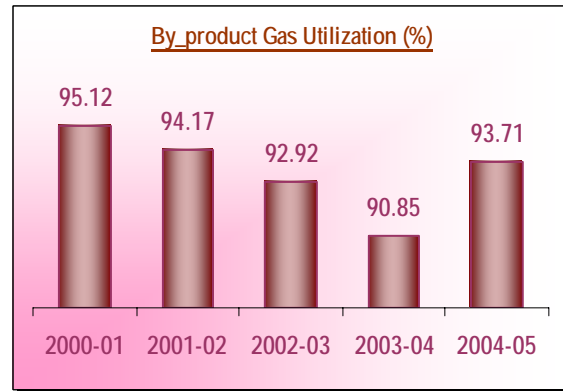
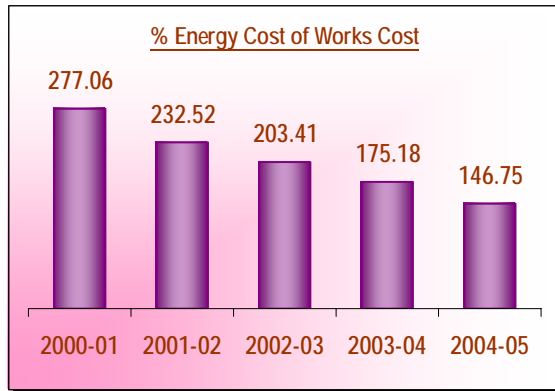
The graphs depicted below shows the achievement made towards energy conservation in the last four years



Kg/tss : kilogram per tonne of saleable steel



Normal Cubic Meter per tonne of steel



Energy Conservation Plans & Target:

Tata Steel is committed to bring down the plant specific energy consumption to a level of 5.675 Gcal/tcs from its current level of 6.965 Gcal/tcs. To achieve this Tata Steel has benchmarked its Plant Specific Energy Consumption with IISI Reference Plant. The gaps identified have studied for its economical & technological feasibility and some ambitious projects are to be undertaken during the Growth Plan when the steel making capacity will be enhanced to 6.8 mtpa. The projected specific energy consumption is depicted in the graph 1. Some of the initiatives planned that will bridge the gap are:

- New Blast Furnace with “high top pressure” and “Top Recovery Turbine”.
- Replacement of old and inefficient turbo blower.
- By-Product fired boilers for steam and power generation.
- Recovery of sensible heat of red hot coke for generation of steam
- Recovery of sensible heat of red hot coke for generation of steam through “Coke Dry Quenching”.
- Sensible heat recovery from stoves flue gas at Blast Furnaces.
- Rationalization of by-product gases and utilities network to reduce losses.