

i. Unit Profile :

Established in 1907, Tata Steel is the world's 6th largest steel company with an existing annual crude steel capacity of 30 million tonnes. Asia's first integrated steel plant and India's largest integrated private sector steel company is now the world's second most geographically diversified steel producer, with operations in 26 countries and commercial presence in over 50 countries.

Tata Steel completed 100 glorious years of existence on August 26, 2007 following the ideals and philosophy laid down by its Founder, Jamsetji Nusserwanji Tata. The first private sector steel plant which started with a production capacity of 1,00,000 tonnes has transformed into a global giant .

Tata Steel plans to grow and globalize through organic and inorganic routes. Its 6.8 million tonnes per annum (MTPA) Jamshedpur Works plans to achieve 10mt capacity by 2010. The Company also has three Greenfield steel projects in the states of Jharkhand, Orissa and Chhattisgarh and proposed steel making facilities in Vietnam .

Through investments in Corus, Millennium Steel (renamed Tata Steel Thailand) and NatSteel Asia, Singapore, the Tata Steel has created a manufacturing and marketing network in Europe, South East Asia and the Pacific-rim countries. Corus, which manufactured over 20 MT of steel in 2008, has operations in the UK, the Netherlands, Germany, France, Norway and Belgium. Tata Steel (Thailand) is the largest producer of long steel products in Thailand, with a manufacturing capacity of 1.7 MT.

NatSteel Asia produces about 2 MT of steel products annually across its regional operations in seven countries.

Tata Steel, through its joint venture with Tata BlueScope Steel Limited, has also entered the steel building and construction applications market.

The iron ore mines and collieries in India give the Company a distinct advantage in raw material sourcing. Tata Steel is also striving towards raw materials security through joint ventures in Thailand, Australia, Mozambique, Ivory Coast (West Africa) and Oman.

Exploration of opportunities in titanium dioxide business in Tamil Nadu, Ferro-chrome plant in South Africa and setting up of a deep-sea port in coastal Orissa are integral to the Growth and Globalization objective of Tata Steel.

Tata Steel's vision is to be the global steel industry benchmark for **Value Creation and Corporate Citizenship**.

Tata Steel is one of the few steel companies in the world that is Economic Value Added (EVA) positive. It was ranked the "World's Best Steel Maker", for the fourth time by World Steel Dynamics, USA.

Tata Steel has been conferred the Prime Minister of India's Trophy for the Best Integrated Steel Plant five times.

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. It was the first Tata company to win the JRD Quality Value Award, categorizing its operations as "world class" under the Tata Business Excellence Model.

Products

Tata Steel is a global player with a balanced presence in developed European and fast growing Asian markets and with a strong position in the construction, automotive and packaging markets. Its Jamshedpur steel works produces hot and cold rolled coils and sheets, galvanized sheets, tubes, wire rods, construction rebars, rings and bearings. In an attempt to 'discommodities' steel, the Company has introduced several branded steel products, including Tata Steelium (the world's first branded Cold Rolled Steel), Tata Shaktee (Galvanized Corrugated Sheets), Tata Tiscon (rebars), Tata Pipes, Tata Bearings, Tata Structura, Tata Agrico (hand tools and implements) and Tata Wiron (galvanized wire products).

Corus' main operating divisions comprise Strip Products, Long Products and Distribution & Building Systems Division. Combining international expertise with local customer service, the company supplies a range of long and strip products to demanding customers worldwide in markets including the construction, automotive, packaging and engineering sectors. The NatSteel group produces construction

grade steel such as rebars, cut-and-bend, mesh, presage bore pile, PC wires and PC strand. Tata Steel Thailand produces round bars and deformed bars for the construction industry.

Corporate Social Responsibility

Regarded globally as a benchmark in corporate social responsibility, Tata Steel's commitment to the community remains the bedrock of its hundred years of sustainability. Its mammoth social outreach Programme covers the company-managed city of Jamshedpur and over 800 villages in and around its manufacturing and raw materials operations through uplift initiatives in the areas of income generation, health and medical care, education, sports, and relief.

The Company, fully conscious of its responsibilities to the future generations, has always taken proactive measures to ensure optimum utilization of natural resources. This is reflected in the ISO-14001 certification that all its operations have achieved for environment management. The SA 8000 certification for work conditions and improvements in the workplace at the steel works in Jamshedpur, along with its Ferro Alloys and Minerals Division, is a reiteration of its commitment towards the Company's employees. Tata Steel has pioneered numerous employee welfare measures such as the 8 hours working day and the three tier joint consultation system of management which have been the platform for nearly 100 years of industrial harmony in its Steel Works in Jamshedpur.

ii. Energy Consumption :

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

Sl. Particulars	Unit	2005-06	2006-07	2007-08
a. Light Diesel Oil	Tonne	3229	5728	5312
b. Coking Coal	Tonne	3354493	3106011	2810545
c. Coal for injection in Blast furnaces	Tonne	336352	443759	386774
d. Boiler/Middling Coal	Tonne	598654	329091	189310
e. Electricity	10 ³ KWh	1819626	1910403	1945659
f. Plant Specific Energy Consumption	Gcal/tcs	6.959	6.717	6.655
g. Total Manufacturing Cost	Rs. Crores	4993.59	5732.88	6006.44
h. Total Energy Bill	Rs. Crores	1713.00	2103.08	1844.84
i. Energy as% of total cost of production	%	34.30	36.68	30.71

iii. 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 :

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

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

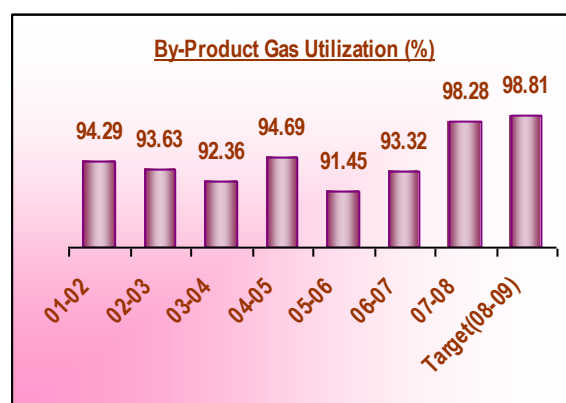
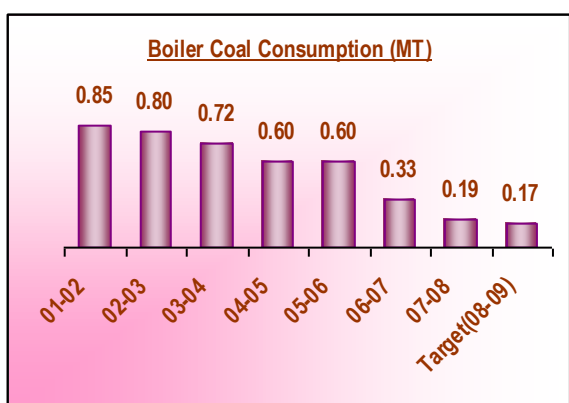
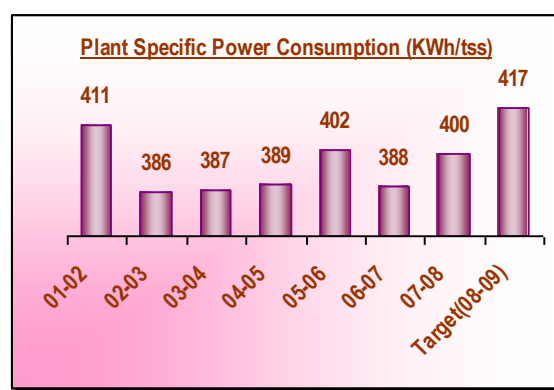
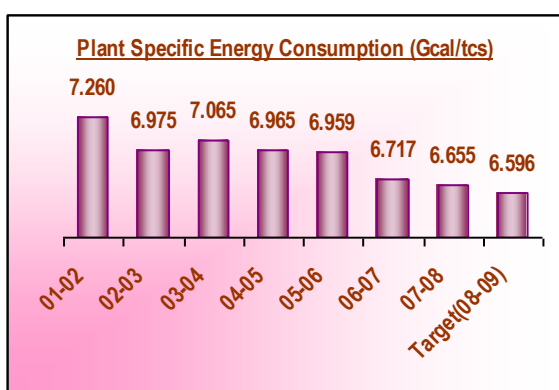
- The detailed variance of stage wise energy consumption is analyzed on monthly basis & reported the concerned Departmental Chiefs & Heads for necessary action at their end to improve efficiency and reduction in specific energy consumption.
- Numbers of Aspire, Self Initiated Projects are taken up in area of energy conservation all over the plant.
- 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.

iv. Energy Conservation Achievements :

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



v. 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 6.655 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 steel making capacity will be enhanced to 6.8mtpa. Some initiatives planned that will bridge the gap are given below.

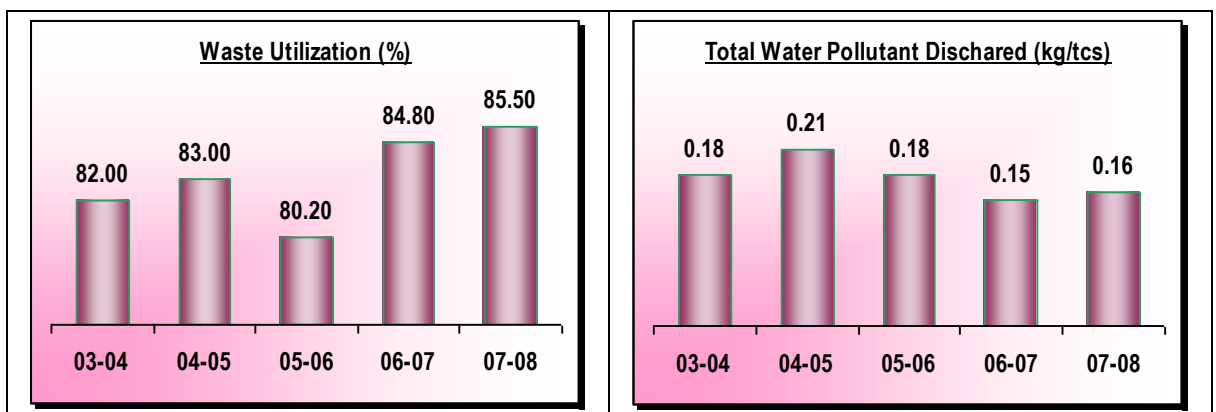
Sl.	Initiatives	Year of Implementation	Reduction in SEC
1.	Reduction in Fuel Rate At Blast Furnaces	FY-09 to FY-12	0.287
2.	Increase in LD Gas Recovery	FY-09 to FY-12	0.036
3.	Installation of TRT at H & G BF	FY-09 & FY-10	0.094
4.	Installation of CDQ at Batteries 5,6 & 7	FY-10	0.140
5.	Installation of CDQ at Batteries 8 & 9	FY-11	0.150
6.	Oxy-Flame Burners for D & F BF Stoves	FY-10	0.001
7.	Waste Heat Recovery from Sinter Coolers at SP 3 & 4	FY-10 & FY-11	0.108
8.	Use of Regenerative Burners at Re-Heating Furnace	FY-10	0.002
9.	Improvement in Re-Heating Furnace Efficiency at Merchant Mill	FY-11	0.003
11.	Lowering of Steam Consumption at Turbo Blowers	FY-09 to FY-12	0.021
12.	Improve Boiler Efficiency at PH # 5 & PH# 5- D Boilers	FY-10 to FY11	0.009
13.	Reduction in Petro-Fuel Consumption	FY-10	0.002
14.	Efficiency improvement of Electrical & Mech. Equipments	FY-09 to FY-12	0.030
	Reduction in Plant Sp. Energy Consumption	0.929 Gcal/tcs	

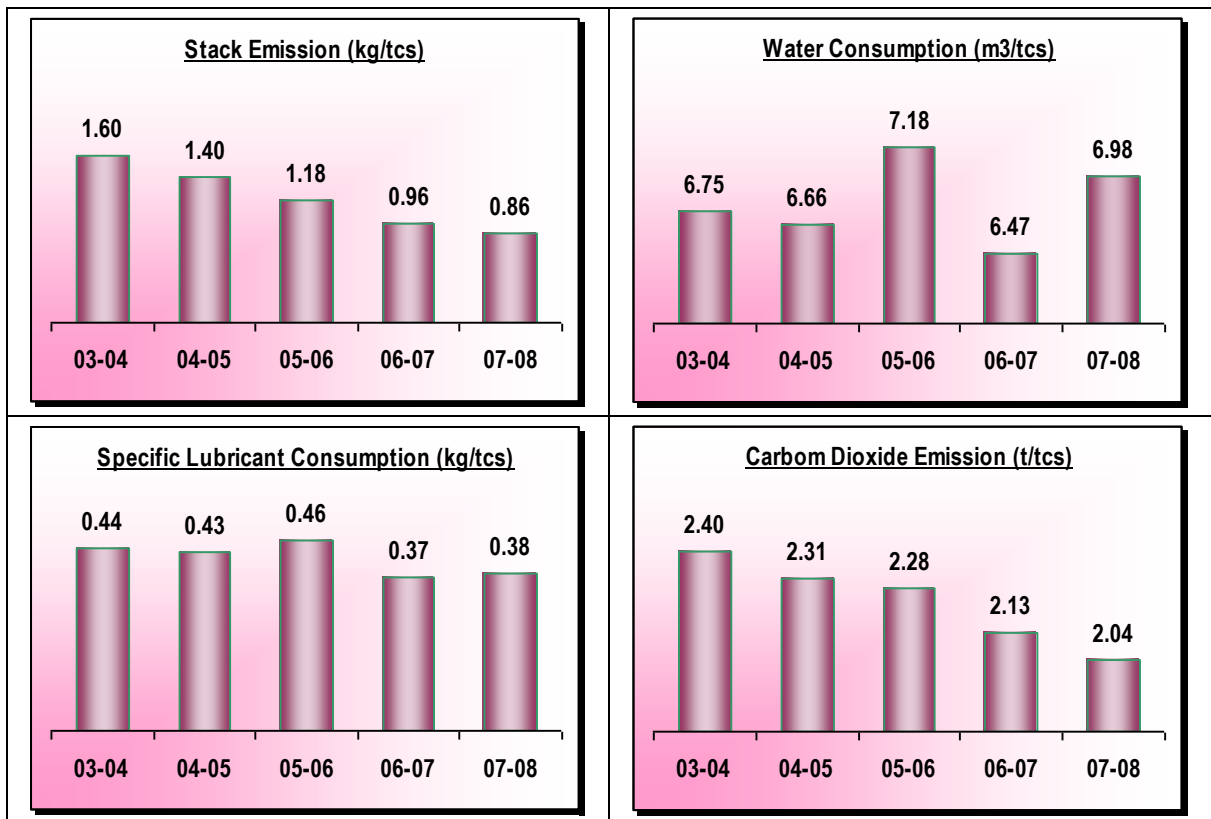
vi. Environment & Safety

ENVIRONMENTAL PERFORMANCE

Tata Steel is fully aware of the impact of its activities, product and services on the environment, not only at the local but also at the global scale. Today the world over sustainable development is at the core of business. It is this abiding involvement with the environment which has earned the company recognition for its achievements.

- Environmental clearances obtained from Ministry of Environmental and Forests , New Delhi (MOEF) for the following projects.
 - 6.8 MTPA Growth Plan at Steel Works Jamshedpur.
 - New Cold Rolling Mil Complex at Bara, Jamshedpur
 - Tata Blue Scope project at Bara, Jamshedpur.
- Terms of reference (TOR) obtained from MOEF for EIA report of 9.7 MTPA expansion of Steel Works, Jamshedpur
- Host country approval received from MOEF for the following projects.
 - Top Recovery Turbine (TRT) at 'G' Blast Furnace.
 - Power generation from by-product gases at Power House No.3.
- Validation of TRT and PH-3 CDM Project carried put by M/s DNV.
- MoU was signed with M/s Ernst and Young fr developing 14 potential CDM projects.
- Re certification of Steel Works, Jamshedpur to OHSAS- 18001 : 1999 specification and successful surveillance audit of ISO 14001: 2004 in July 2007.
- Highest ever solid waste utilization of 85.50% was achieved for the year 2007-08.
- Lowest ever Stack emission 0.86 kg/ ton of crude steel – 10.41 % reduction over previous year.
- Lowest Refrigerant Consumption 0.25 kg/ton of refrigeration,10.71% reduction over previous year.





Toward building sustainability through environmental excellence, significant challenges ahead of the companies are as follows

- Meaningful integration of environmental, societal & economic issue to improve & sustain companies overall business performance through a transparent & structured stake holder engagement process.
- To achieve waste utilization to the level of world benchmark (99% plus) through cleaner processes and technological innovations and make the city of Jamshedpur a zero dumping city.
- To achieve water consumption in the steel works to world benchmark level of 5 m³/tss.
- To convert the steel works to 100% visible emission free site.
- Effective integration of environmental, occupational health & safety performance of the company under one umbrella.

ID to be filled by BEE

Title of the measure

Sector : Iron & Steel

Year to be filled by BEE

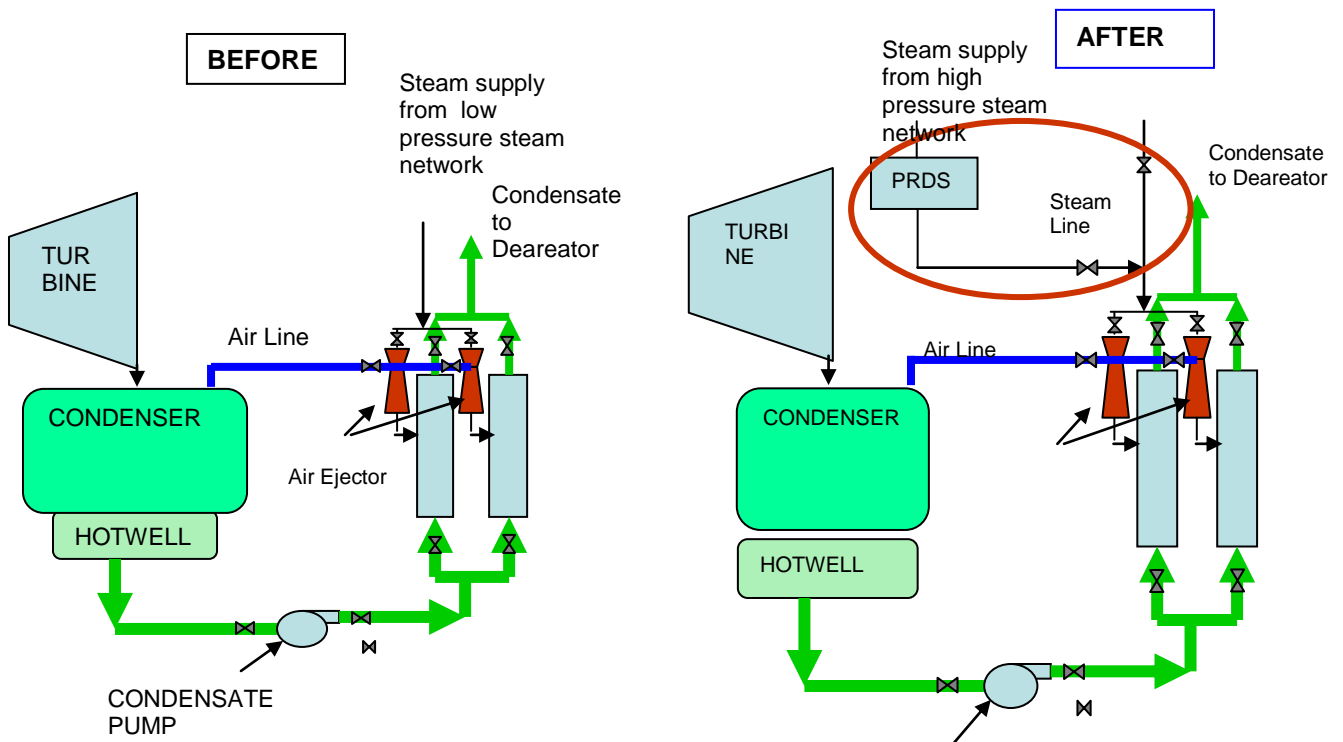
Improvement in vacuum of 25 MW Turbo Generator Set to optimum Value at PH-4

Technology

Description of the Energy Conservation Measure

Drop in 25 MW Turbo Generator set condenser vacuum, which is having design of 640mm of Hg running lower side after 12.5 MW turbo generator down.

From the analysis of data we observed that vacuum of 25 MW Turbo generator set condenser was dropping to 580mm HG against the design of 640mm HG . Further analysis revealed that because of the variation in steam pressure which is being supplied by low pressure steam network. After brainstorming / cause and effect analysis, we changed the steam supply to ejectors from low pressure to high pressure steam network with PRDS. This has been resulted in improving the vacuum from 580mmHg to 650mmHg.



Agency that executed the project (with complete address & email) :

Project implemented in-House

Total Investment, Rs : 15 lakhs

Year of Implementation : 2008

First year Energy Cost Savings, Rs. : 133 lakhs

First year other savings, Rs. :

On Annual Basis	kWh 000'	Coal (tons)	Gas (Nm ³)	Oil (KL)	Steam Rate
Energy Consumption before					4.21
Energy Consumption after					4.02

Energy tariff, Rs/kWh/ton/Nm3 : Rs. 350 /ton

Company complete address:

Tata I Steel Limited, Jamshedpur – 831 001

Telephone : 0657 – 2422757

Contact person who could be contacted for more information

Mr. J.P.N. Singh, Chief, Fuel Management

Email : jpn.singh@tatasteel.com

We authorise Bureau to use this information for dissemination

Signature : (JPN Singh)

Date : 21-10-2008

ID to be filled by BEE

Title of the measure

Sector : Iron & Steel

Year to be filled by BEE

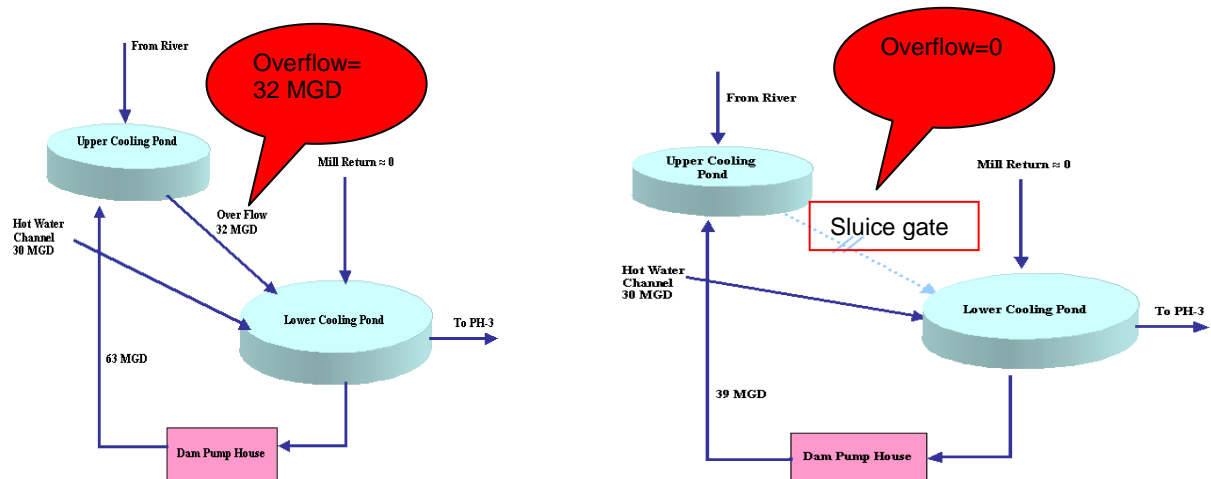
Reduction in auxiliary Power consumption in
Dam pump house

Technology

Description of the Energy Conservation Measure

Dam Pump House is located in between Upper Cooling Pond and Lower Cooling Pond. It comprises of 5 no's of Centrifugal Pumps for supplying water from Lower Cooling Pond to Upper Cooling Pond to maintain a suction level for Pump house# 1 & Pump House# 2. In Normal operation, 2-3 nos of Centrifugal Pumps run simultaneously to maintain the level of Upper Cooling Pond at 516.4 Ft.

Detailed analysis revealed that water is overflowing from upper cooling pond to lower cooling pond which is located at lower gradient because of the human error. A sluice gate was installed along with display of levels at upper cooling pond / lower cooling pond and pump house # 1& 2 and Dam Pump House. This has resulted in reduction in pump operation hours at Dam Pump House.



Agency that executed the project (with complete address & email) : In house

Total Investment, Rs : 5.00 lakhs

Year of Implementation : 2008

First year Energy Cost Savings, Rs. : 27 lakhs

First year other savings, Rs. :

On Annual Basis	MWH/month	Coal (tons)	Gas (Nm ³)	Oil (KL)	Others
Energy Consumption before	1340				
Energy Consumption after	268				
Energy tariff, Rs/kWh/ton/Nm ³	2.50 /kwh				

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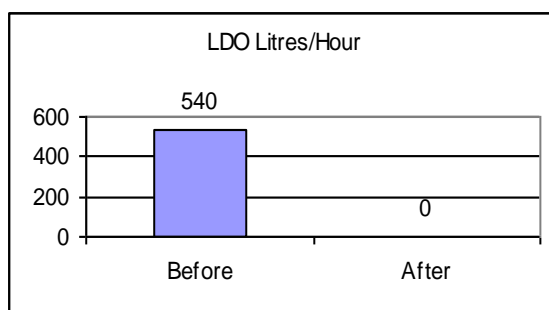
Reduce C.O.Gas consumption for flame support in
boilers at Power House # 4

Technology

Description of the Energy Conservation Measure

In Power House # 4 , 4 (four) nos. of boilers have a facility of C.O.Gas / coal firing as a main fuel and L.D.O.(light diesel oil) as a flame support with coal firing. There are 4 burners, each having maximum capacity to fire 6000 Nm³/hr gas .The minimum capacity is 3000 Nm³/hr in each burner with coal firing. Due to low availability of C.O.Gas, while firing coal, L.D.O.(Light diesel oil) is used as a flame support. The modification is done by putting orifice of 3", 2" and 1" in the C.O. Gas line connected with burner, the consumption of Light Diesel oil has been reduced.

C.O.Gas consumption was reduced from 8000 Nm³/hr to 2600 Nm³/hr , which has resulted in saving of 0.54 kl/hr. ie Rs. 64.80 Lakhs



Agency that executed the project (with complete address & email) : In house

Total Investment, Rs : Nil

Year of Implementation : 2008

First year Energy Cost Savings, . Rs. 64.80 Lakhs

First year other savings, Rs. :

On Annual Basis	kWh 000'	Coal (tons)	Gas (Nm ³)	Oil (KL)	Others
Energy Consumption before			8000		
Energy Consumption after			2600		
Energy tariff, Rs/kWh/ton/Nm ³	Rs. 40000/kl				

Company complete address:

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Title of the measure

Sector : Iron & Steel

Year to be filled by BEE

5% reduction in total energy consumption in
blower # 1 of Blower House # 4

Technology

Description of the Energy Conservation Measure

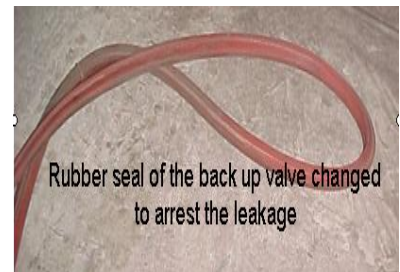
Blower & Pump Houses in Utility Department supplies cold blast to all Blast Furnaces. The biggest section of Blower & Pump Houses i.e Blower House #4 has two blowers supplying cold blast to two Blast Furnaces. Blower #1 supplies cold blast to two blast furnaces simultaneously and blower #2 supplies cold blast to G Blast Furnace, the biggest blast furnace of Tata Steel.

From the data we observed that the total energy consumption of blower #1 has gone up to 81788 GJ / Month (Average energy consumption between Dec 06 to May 07) which is on the higher side.

The detailed analysis revealed that because of the poor quality of rubber seal in bleed off valve, an huge amount of air leakage was taking place.. By replacing an imported quality of rubber seal, the air leakage was arrested. This has resulted in energy saving from. 81788 GJ month to 71368 GJ/ month .

Before

After



Agency that executed the project (with complete address & email) : In-House

Total Investment, Rs : 0.50 lakhs

Year of Implementation : 2008

First year Energy Cost Savings, Rs. : 36 lakhs

First year other savings, Rs. :

On Annual Basis	kWh 000'	Coal (tons)	Gas (Nm ³)	Oil (KL)	Others
Energy Consumption before					81788 GJ
Energy Consumption after					71368 GJ
Energy tarrif, Rs/kWh/ton/Nm3	Rs. 350/ton				

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