

USHA MARTIN LIMITED (USHA ALLOYS & STEELS DIVISION) JAMSHEDPUR - JHARKHAND

Unit Profile

Usha Alloys & Steels Division (A unit of Usha Martin Ltd.), is a medium sized integrated Steel Plant, located at Gamharia, Adityapur, district Saraikela-Kharswan in the State of Jharkhand and is approximately 16 KM west of the Steel City of Jamshedpur. The plant is spread over 235 acres and is situated close to large deposits of iron ore, coal, and limestone in Metallurgical Belt of Jharkhand state. Usha Alloys & Steels Division (UASD) has facilities to manufacture Pig Iron, Steel Billets, Steel Wire rods, DRI, Cryogenic Oxygen, VPSA Oxygen, Lime and waste heat recovery power from off-take Blast Furnace & DRI Gas in addition to Coal Based Thermal Power Plant. Plant is going to expand its annual production capacity from 3,30,000 MT of steel product to 10,00,000 MT of steel product by year 2010.

UASD produces steel grades ranging from Low Carbon, Medium Carbon and High Carbon to Tool and Die steel and wire rods ranging from 5 mm to 25.4 mm. Wire rods from 5 mm to 16.5 mm diameters are produced through Block Route and from 14 mm to 25.4 mm diameter through Garret Route. Steel Wire Rods are produced at UASD for Automobile Industry, General Engineering Purpose, Fasteners application, and Railway component and for Defence and Power Sectors.



Present major manufacturing facilities are:

- Coal based direct reduced Iron production from one no Rotary Kiln with production capacity of 350 TPD.
- Mini Blast furnace, having an annual production capacity of 1,90,000 MT used to supply hot metal for steel making in EAF.
- The steel melting shop constitutes two nos. EAF of capacity 35 MT each, two continuous casting machine (one 2-strand bow type Beam-110x110sq.mm, 4mt. radius, & one 3-strand bow type Beam - 150 x 150 sq. mm, 6 metre radius), 3nos. Ladle Refining Furnace and one Vacum degassing system (capacity 35 MT, vacuum level 0.5 TOR minimum, provision for VOD in future).
- 29 stand Morgardshammer state of the art WRM mill with H-V configuration and having a production capacity of 270,000 tones per annum

Corporate Social Responsibility

Usha Martin has strongly believed in its social responsibility being an important part of business philosophy. The company has promoted Krishi Gram Vikash Kendra (KGVK), as its social arm to take appropriate initiatives in various areas which affect health, social life and economic well being of people for a period of over 35 years.

Presently, KGVK reaches out to about one lac households of tribal people and weaker sections of society in over 700 villages across 6 districts in the state of Jharkhand. KGVK has been taking on various activities in basic health, hygiene and sanitation, education, women empowerment, community development, agriculture, integrated watershed development, micro enterprise development, capacity building and need based training to generate self employment and sustainable income for weaker sections of the society. During the year 2006-07, the company earned the prestigious TERI Corporate Social responsibility Award, 1st prize in recognition of corporate leadership for good corporate citizenship and sustainable initiatives amongst corporates with turnover above Rs 500 crs. The "Reduction of Low Birth Weight" project of KGVK, which was considered for the prize, has also been scaled by the Government of Jharkhand as part of the state's health reforms.

Energy consumption

Each individual department within the unit prepares their daily production reports along with the figures pertaining to the energy consumption in their own department. The figures are duly mentioned in the daily production reports and are discussed daily in plant management level. The specific energy consumption figures for manufacturing Pig Iron, and steel melting process are depicted as follows.

Year-wise production figs.:

Production in MT /Year	2004-2005	2005-2006	2006-2007
Pig/Hot Iron	195513.92	202604.87	194460.89
Sponge Iron	46849.64	98908.31	91040
Wire Rod	263115.48	272657.57	290944.32
Billets	296191.82	323269.87	360307.05
Steel Bar	26974.267	29031.024	37392.062
Wire	13131.35	12258.89	16050.05

Year-wise Specific Electrical Energy consumption in KWH/MT

Type of Product	2004-2005	2005-2006	2006-2007
Pig/Hot Iron	127.55	127.50	128.77
Sponge Iron	82.11	69.59	78.63
Wire Rod	185.39	184.66	179.00
Billets	423.09	503.87	520.00
Steel Bar	69.13	70.94	64.61
Wire	187.83	176.52	210.00

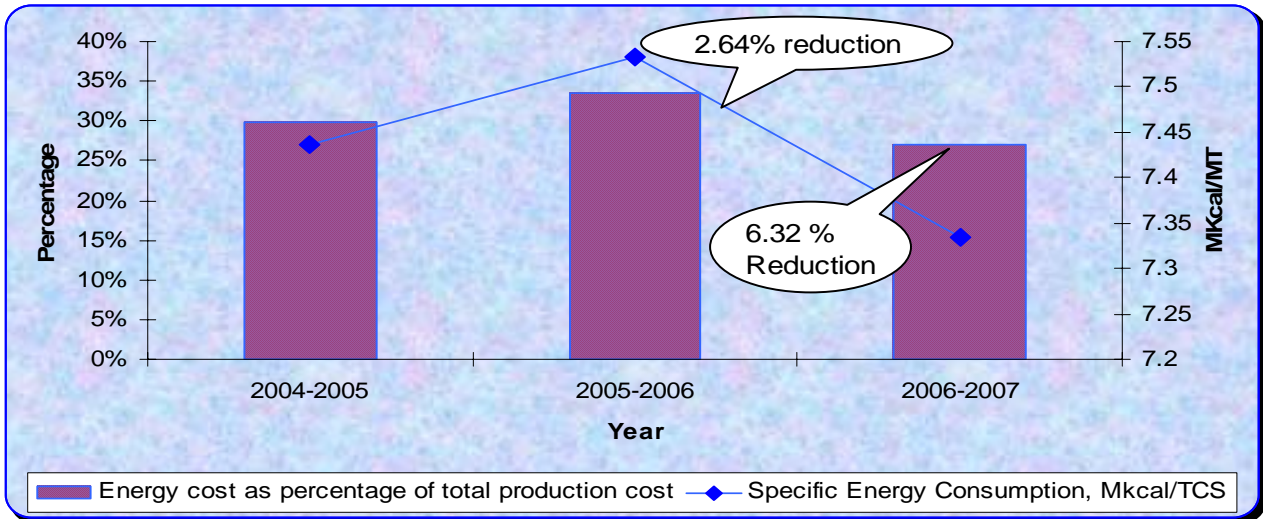
Year-wise Specific Thermal Energy consumption in MKCAL/MT

Type of Product	2004-2005	2005-2006	2006-2007
Pig/Hot Iron	5.50	5.17	5.29
Sponge Iron	4.01	4.11	4.86
Wire Rod	0.25	0.24	0.25
Steel Bar	0.48	0.47	0.40
Wire	0.68	0.07	0.07

Year-wise Energy cost as percentage of total production cost

Particulars/Year	Unit	2004-2005	2005-2006	2006-2007
Annual sales turnover of the	Rs. Lakhs	90226.80	90086.18	96994.81

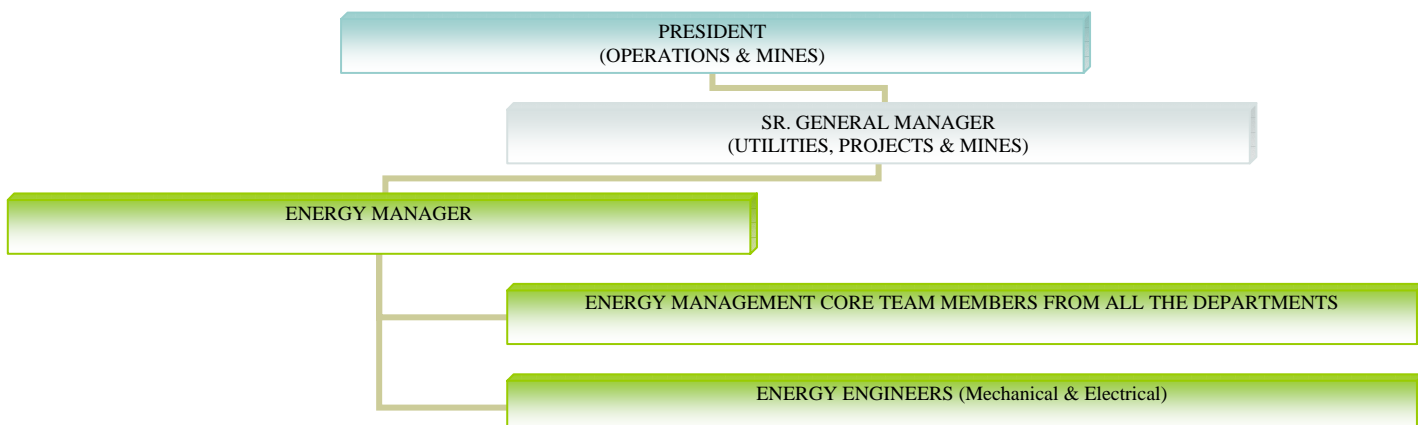
unit				
Manufacturing cost	Rs. Lakhs	72614.26	75169.16	82409.46
Total Energy Cost	Rs. Lakhs	21685.42	25140.12	22350.17
Energy cost as percentage of total production cost	%	29.86%	33.44%	27.12%
Specific Energy Consumption	Mkcal/tcs	7.44	7.53	7.33



Energy Conservation Commitment, Policy and Set up

UASD visualized importance of energy conservation by virtue of the present developments taking place in our country in the area of Energy Management and the initiatives taken by the Indian Government in issues like Energy Security & Global warming. The Energy Management department was formed in the month of Feb-2007, and a qualified and B.E.E certified Energy Manager was appointed to lead the team. The Energy Manager is being assisted by Energy Engineers.

The main duties of the department is to establish an improved data recording, collection and analysis system to keep track of energy consumption & provide support to Accredited Energy Audit Firm hired by the company for the conduct of energy audit in the Unit. The Core Energy team is led by the Senior General Manager (Utilities, Projects & Mines) and the ultimate authority is the President (Operations & Mines). The EC cell structure is as follows:



Draft Energy Policy

USHA MARTIN LIMITED
USHA ALLOYS AND STEELS DIVISION (UASD)
JAMSHEDPUR



ENERGY POLICY (Draft Stage)

We at Usha Martin limited, Usha Alloys & Steel Division, (UASD), Jamshedpur, are committed to optimally utilize various forms of energy in a cost-effective manner to effect conservation of energy resources. This we plan to achieve by the following: -

- ❑ Carry out regular internal & external energy audits to identify areas for improvement.
- ❑ Benchmarking all products/service for energy consumption at regional as well as national level & International level.
- ❑ Reuse & recycle of Energy by cascading.
- ❑ Make energy conservation a mass movement with the involvement of all employees.
- ❑ Implementation of energy efficient system at design stage in ongoing project.
- ❑ Reduce specific energy consumption.

Date _____

Chief Executive
Usha Alloys & Steels Division

Energy Conservation Achievements

Major projects implemented for Energy conservation during year 2006-07:

SI No	Description	Savings in lakh Kwh	Saving (Rs.in Lakhs)	Investment (Rs.in Lakhs)
1	10 TPH BFG fired V. D. boiler commissioned which uses waste surplus BF Gas resulting in saving of LDO	15.5 KL of FO	3.05*	190
2	Installation of FRP blades & hollow hub for cooling tower fans at 3 MW CPP	0.40	1.81	0.60
3	Installations of Improved oxygen and carbon injection system (ALARC™-Jet systems) in Electric Arc Furnace which reduces the specific power consumption and also increases the percentage use of sponge iron (DRI) in steel meting process.	93.88	422.48	225
4	Automation in motor control of steam exhaust fan when caster is in cast mode.	0.37	1.69	Nil
5	Replacement of metalik fans with FRP to reduce energy loss at SMS #2 cooling tower.	0.67	3.02	0.50
6	Lighting control has been automated through timer switch and Installation of Energy Efficient light	2.91	13.09	1.25

* Project commissioned on Feb 2007 & saving accrued for March 2007)

Carbon Credit

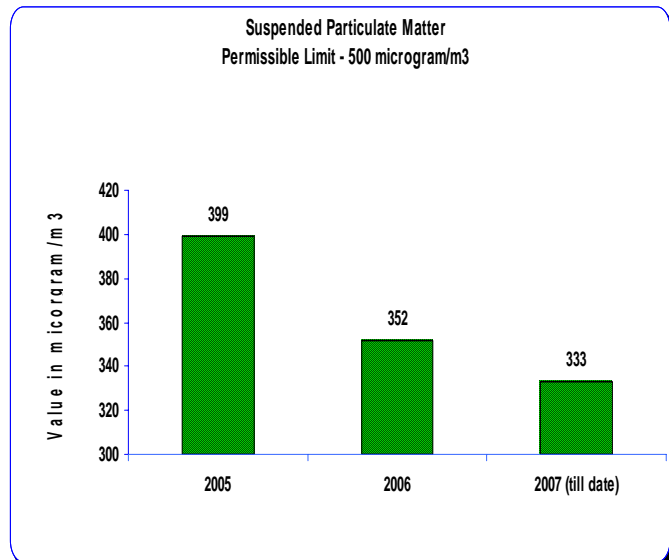
The company has put up "Waste Heat Recovery Captive Power Project" for utilizing waste heat generation from DRI plant. The company has accumulated 60,989 carbon emission reductions (CER's). These CER's have been verified and submitted to UNFCCC for issuance. In April'07, the company entered into Emission Reduction Purchase Agreement (ERPA) for sale of these CER's. The company expects to have about 50,000 CER's every year from current year onwards.

The company has also implemented project for utilizing blast furnace gas in re-heating furnace at Wire Rod Mill. This would also be accruing about 10,000 CER's on yearly basis.

Environment and Safety

Usha Alloys & Steel Division is continuing to enjoy certification under ISO 14001 Environmental Management Systems (EMS) standard from Det Norske Veritas (DNV), of U.K. The effectiveness of these systems is evident from reduced oil and water consumption, reuse of waste oils and water, utilization of iron containing wastes and improved green cover in steel plant site. There is an independent environment management department headed by a senior person and is assisted by suitably staffed. The laboratory is well equipped with equipments as High Volume Sampler, Stack monitoring kit, pH meter, Spectrophotometer, Turbidity meter etc.

✚ Iron and Steel making plants generate large quantity of solid waste inherent to the manufacturing process. At UASD, we have been able to achieve up-to 77% utilization of solid waste generated against world benchmark of 97%. Further, we have achieved 98 % utilization of slag generated at blast furnace after granulation in cement making. Fly ash utilization produced at Coal based power plant has been up-to 47.0% since its commissioning in March 2000. This has been used for developing low-lying areas, brick making and cement making. We have also taken initiatives to use it for development of degraded wastelands in the 50 km radius of the company in collaboration with IIT, Kharagpur and a Canadian consultant. Steel slag produced at Steel melting shop is used in road making and filling of low lying.



- ✚ A fume extraction system fitted with bag house has been put in place to take care of particulate matter emissions during raw material handling and steel making process at Steel melting shop(SMS) , DRI plant and MBF. To minimize fugitive emission during handling of collected dust, it is fitted with pelletiser at SMS and dust conditioners at other places. Electrostatic precipitator (ESP), Silo, Bag house and dust Conditioner is fitted to check pollution that may result from fuel combustion boilers. Smooth operation of Pollution Control Equipment by dedicated band of engineers / support staff is in action.
- ✚ The entire blow down water resulting from process is taken to Lagoon/ tailing pond and reused suitably in process, dust suppression on road using sprinklers besides irrigating green belt.
- ✚ Arresting fugitive emission by developing green belt at all dusts prone areas and occupying all open spaces with greenery is our priority activity. < 26% factory area is occupied by greenery.
- ✚ Improving house keeping by providing separate enclosed yards for raw material storage and regular sweeping of metalled roads is in practice.
- ✚ Use of PPEs by all concerned is mandatory.
- ✚ Above actions and many more such actions helped us improve our work environment.