

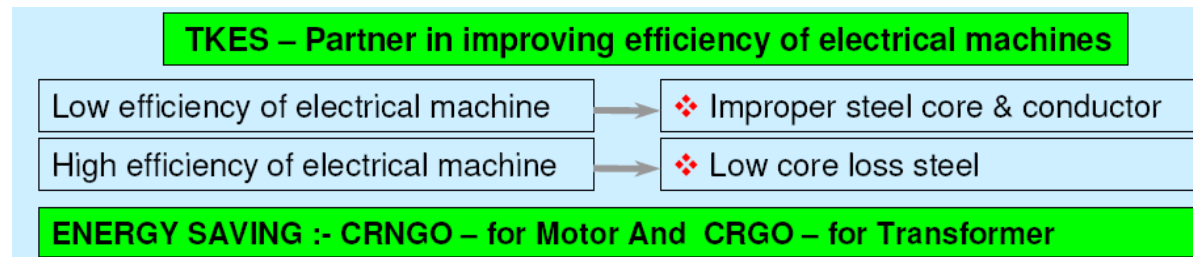


ThyssenKrupp Electrical Steel India Private Limited
At Post - Gonde, Village - Wadivarhe, Tal - Igatpuri, Dist - Nashik, Maharashtra

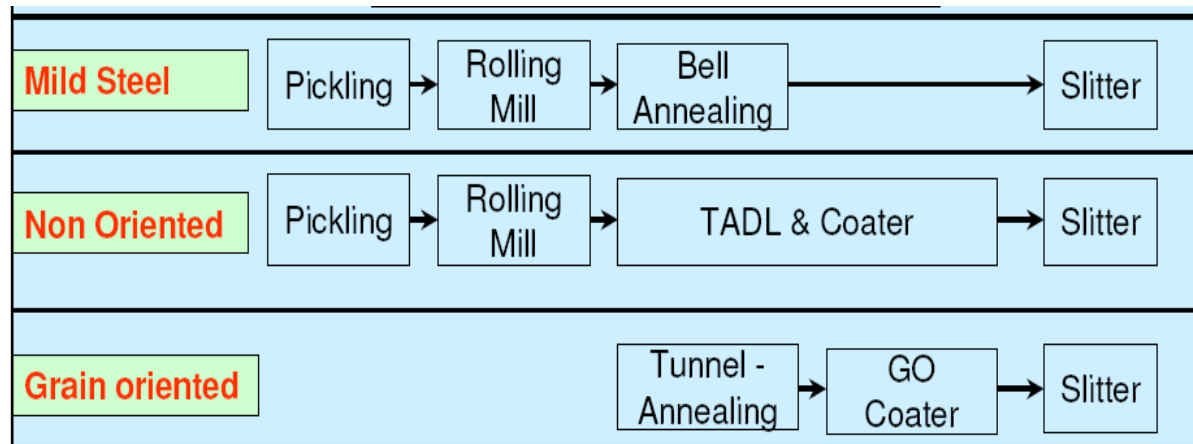
1. COMPANY PROFILE

Name of the Company	ThyssenKrupp Electrical Steel India Pvt. Ltd.		
Location	Nashik, Maharashtra		
Year of Establishment	September, 2000		
Area	175 Acres	No. of Employees	650
Contract Demand	15	MVA	
Electrical Energy consumption	53 million	kW / annum	
LPG, Naphtha & FO consumption	82 million	kW / annum	
Production	125,880	MT / annum	
Raw Material	Hot Rolled coils		
Product	Electrical steel & Mild steel		
Annual sales turnover	Rs. 600 Crore		
Integrated Management system	QMS, EMS & OHS		

2. PRODUCT



3. PROCESS FLOW DIAGRAM



4. ENERGY POLICY

A Company of
ThyssenKrupp
Steel

ThyssenKrupp Electrical Steel India Private Limited



ThyssenKrupp

March 2, 2006

ENERGY POLICY

ENOUGH IS NOT ENOUGH FOR ENERGY CONSERVATION

TKES India, is committed to conserve use of Electrical Energy & Fuel

1. By using cost effective and energy efficient alternatives/ equipment and waste heat recovery methods in planned manner.
2. Optimising energy consumption at every stage of operation by
 - Effective operation and maintenance practices.
 - Setting energy norms for every stage of operation.
 - Periodic monitoring and review.
 - Training of employees in energy conservation practices.
3. By benchmarking the energy consumption norms with group and other similar companies.
4. By active participation and consultation with CII and other similar institutes.
5. By carrying out regular energy audits to identify areas for improvement.
6. Sustain energy efficiency gains by establishing and maintaining a management information system designed to support managerial decision making.

This will be achieved through dedicated team-work, participation and commitment from employees at all level and ensured by ENCON core group.

02.03.06


Konrad Noertersheuser
Managing Director

We supply
POWER CORE
Worldwide

Registered Office & Factory:

At Post: Gonde, Village Wadivarhe,
Taluka: Igatpuri, District: Nashik,
Maharashtra - 422 405
Tel.: +91 (2553) 225182-88
Fax: +91 (2553) 225181
www.tkesindia.com

Bankers:

Deutsche Bank, AG., Mumbai
ABN AMRO Bank, Mumbai
HSBC Bank, Mumbai

Income Tax Pan No.: AAACE 7791 B

Chairman:

Clemens Iller

Managing Director:

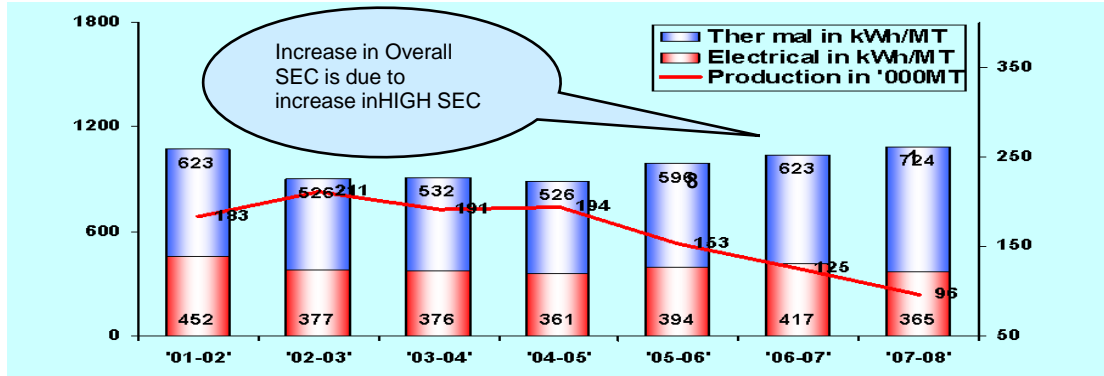
Konrad Noertersheuser

5. ENERGY CONSUMPTION

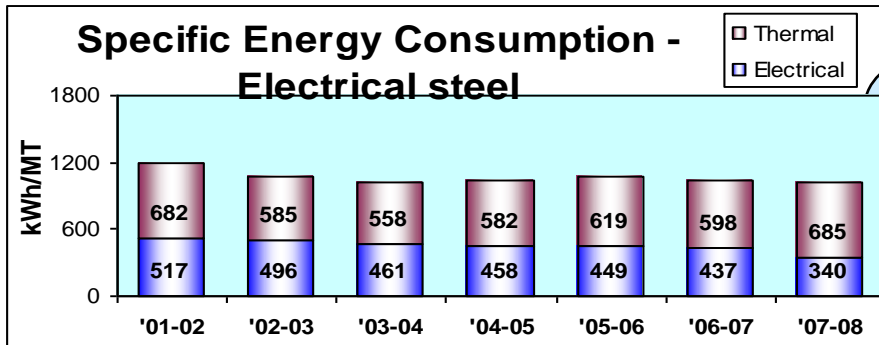
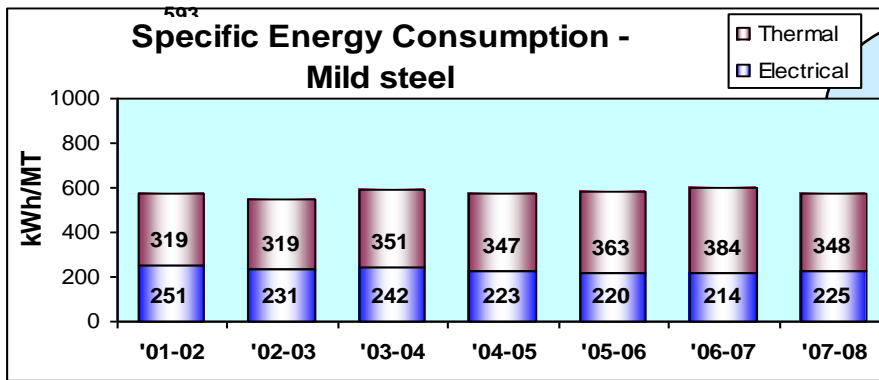
DESCRIPTION	UNIT	2005-2006	2006-2007	2007-2008 (Oct to May 8 months)
Annual Steel Production	MT	153715	125850	96075
Total Electricity consumed	Lacs kWh	604	526	351
Total Thermal (fuel) Energy consumed	MkCal	81258	70139	62346
Total manufacturing cost	Lacs Rs.	7636	7328	5215
Total energy cost	Lacs Rs.	4087	3680	3209
Energy cost as a % of manufacturing cost	%	53.52	50.22	61.53
Specific Energy Consumption - Electrical	kWh / MT	393	418	365
Specific Energy Consumption - Thermal	MkCal / MT	0.53	0.56	0.65

6. Analysis of Variation in Specific Energy Consumption:-

Overall Specific Energy Consumption (Electrical + Mild Steel)



Product	AVG. SEC kWh/MT	Product Mix (%)						
		01-02	02-03	03-04	04-05	05-06	06-07	07-08
Electrical steel	1085	43	42	55	56	67	78	80
Mild steel	570	57	58	45	44	33	22	20



Product at BAF	% of total production	
	04-05	05-06
Mild steel		
High temp. D & EDD grade	39	46
Kg/MT	22	23

Product at TADL	Thermal LPG Kg/MT	Electrical kWh/MT	Product Mix (%)						
			01-02	02-03	03-04	04-05	05-06	06-07	07-08
Electrical steel									
Low silicon (less 1.3%)	20	259	60	55	55	33	29	30	29
Medium & High silicon (1.3 to 3.2%)	24	300	40	45	45	67	71	70	71

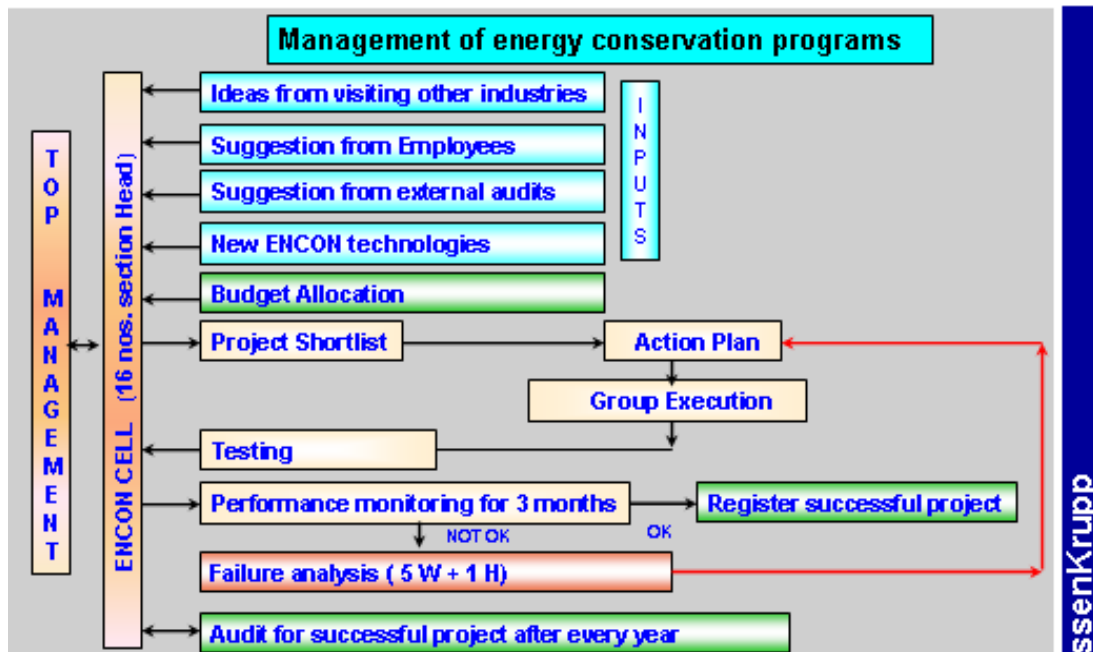
7. ENCON EFFORTS

- ◆ Formation of Energy Policy
- ◆ Appointment of Energy Manager
- ◆ Formation of 16 member ENCON core group from various deptt.
- ◆ Meeting of ENCON core group - once in a month
- ◆ Internal and external energy audit
- ◆ Display of ENCON posters in the plant to create awareness
- ◆ ENCON competition:- Posters, Suggestion and Quiz.
- ◆ Motivation with cash award
- ◆ ENCON training and retraining:- External and internal faculties:- 8500 hrs.
- ◆ Involvement of employees during energy audit and project implementation.
- ◆ Benchmarking with parent company
- ◆ Sankey diagram (Plant and equipmentwise)
- ◆ Review of equipmentwise energy consumption in a daily meetings
- ◆ Circulation of monthly energy report on intranet
- ◆ Two BEE certified Energy Auditors & one Energy Managers
- ◆ External plant visits to get new ENCON techniques
- ◆ Implementation of ENCON techniques during new capital investment
- ◆ Selection of energy efficient equipments during replacement and new procurement

Natioanl Interest:-

- ◆ Active participation in BEE's National campaign:- School and College student plant visits (400 students)
- ◆ Presentation of ENCON for Nashik industries though CII
- ◆ Demo on Solar equipments on Science Day celebration at Company school
- ◆ ENCON presentation during Company Family day celebration in Nov.2006
- ◆ Two days conference on Energy Conservation at Nashik in Mar.2008. (100 delegates)

8. Management of energy conservation programs:-

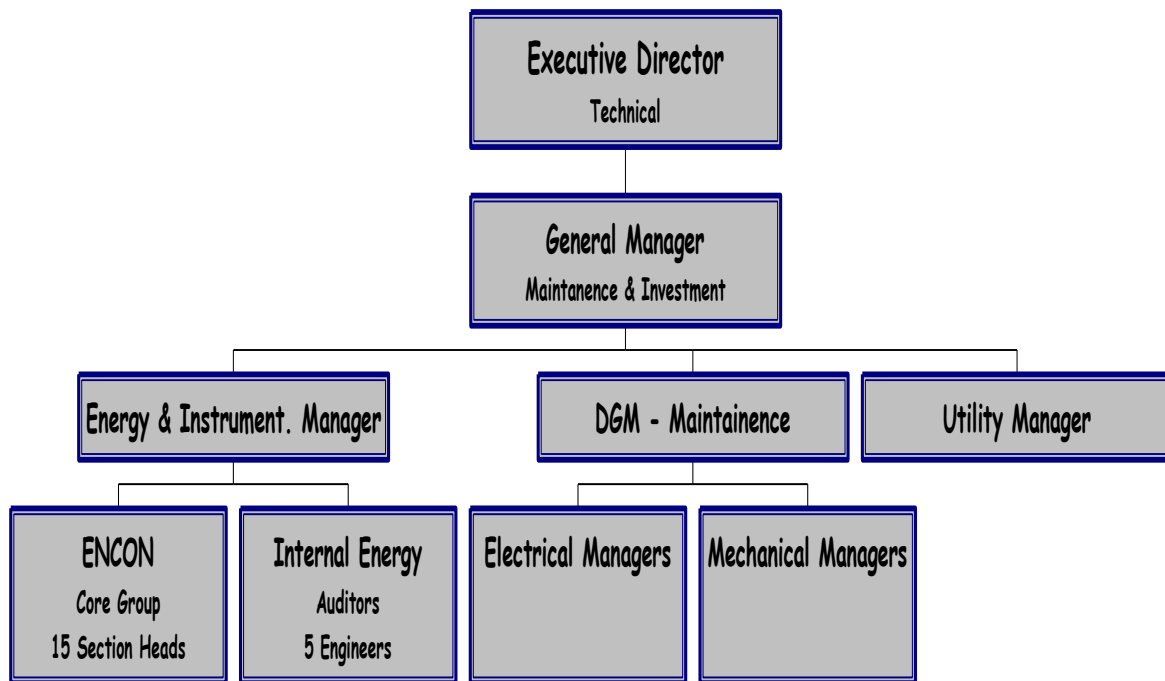


9. Achievements

CII- National Level Awards	Year
Excellent Energy Efficient Unit	2006
Most Useful Presentation	2006
Energy Efficient Unit	2007
Energy Efficient Unit	2008
Water Efficient Unit	2006
MEDA- State Level Awards	
Second prize in Metal & Steel sector	2004
Second prize in Metal & Steel sector	2005
First prize in Metal & Steel sector	2006



10. ORGANIZATION STRUCTURE OF ENERGY MANAGEMENT CELL



11 Major Energy Conservation projects implemented during year 07-08

❖ What :- Reduce Specific energy by replacing direct steam injection

❖ Where :- TADL furnace **❖ When :-** Feb. 2008

❖ Theory:- The pressure of water vapor in equilibrium increases with increasing temperature

❖ Before:-

- Direct steam injection in scrubber
- Scrubber temp. 70 °C

❖ After:-

- Indirect heating
- Switched off dryer
- Scrubber temp. 80 °C

❖ No water carry over

	Steam flow		Electrical	Annual Savings	
	Dryer	Scrubber	Dryer	FO	Electrical
	Kg/hr	Kg/hr	kWh	KI	Lacs kWh
Before	328	338	17	238	1.24
After	0	238	0		

❖ No investment **❖ Annual saving 62 Lac Rs.**

❖ What :- To reduce energy consumption by increasing productivity.

❖ Where :- TADL furnace

❖ When :- Jan.2008

❖ Furnace Area: 291LX2.50 WX2.41H mtrs.

❖ Electrical to LPG heating in zone 4, 5 & 6.

❖ Efficient cooling system in zone 20 & 21

	Produ ctivity	Consumption		Energy cost	Annual		Investment	Pay back
		Electrical	LPG		Product ion	Saving		
		MT/Hr	kWh/MT		Kg/MT	Rs./MT		
Before	16.2	288	27	2216	1.2	251	1143	4.6
After	17.8	171	33	2019				
Δ	1.6	117	7	197				

14. RENEWABLE ENERGY, ENVIRONMENT AND SAFETY



S/N	Name of project	Year	Nos.	Ann. Saving-Lacs		Investment Rs. Lacs	Payback Months
				kWh	Rs		
1	Solar water heater- 5500 LPD	05-07	2	0.5	4	10	32
2	Solar Street light	06-07	2	0.01	0.1	1	240
3	Wind turbine ventilators	06-07	33	0.5	2	2	15
4	Translucent sheet -212 Nos.	06-07	1	1	4	10	31
Total			38	2	9	23	30

Sewage Treatment Plant

- ❖ Month of implementation:- Mar. 2007
- ❖ Capacity – 200 M3/ Day
- ❖ Treated water is reused in Hydrant & gardening.

Zero water discharge from plant- Pit with water level control



- ❖ **Utilization of treated water :- (KL/annum)**
 - ❖ Process reuse – 92345
 - ❖ Gardening – 56210
 - ❖ Toilet flushing – 240

