

Energy Efficiency Tata Steel Ltd.(I)

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Tata Steel Ltd.

04-03-2016



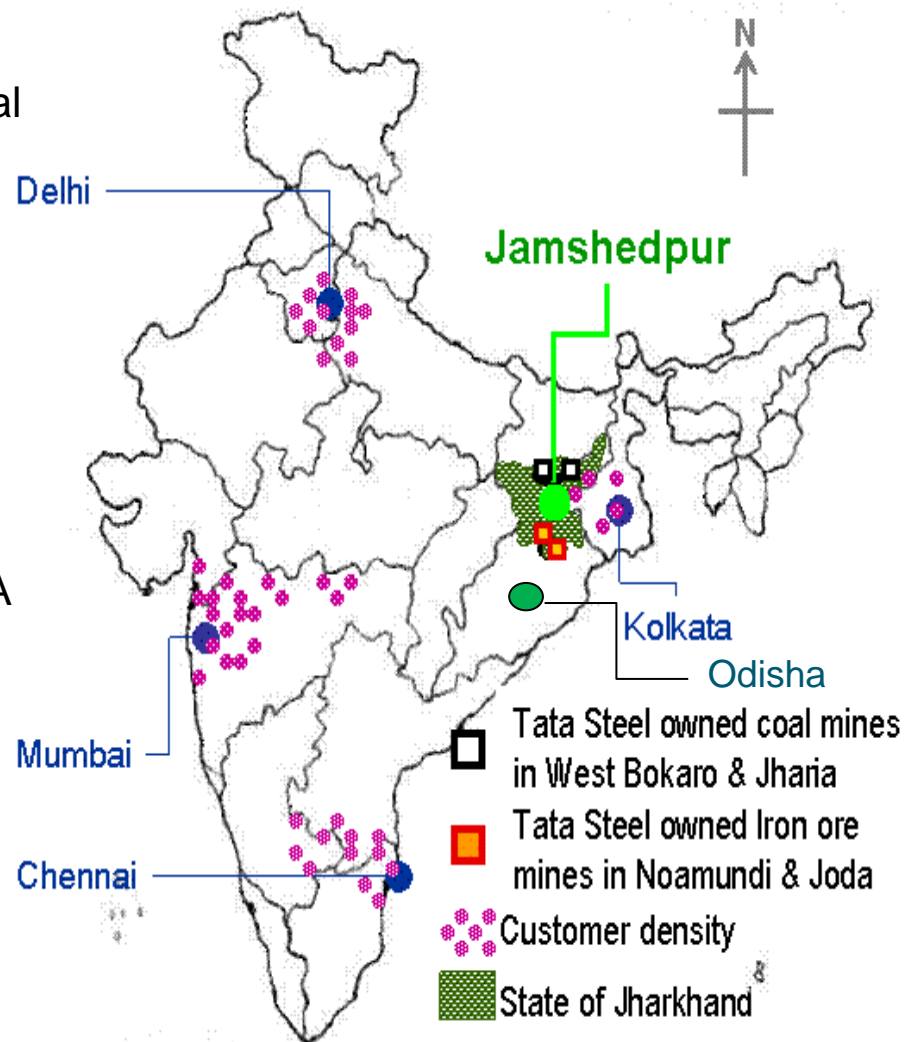


WELCOME

Profile - Tata Steel Ltd.



- ❑ Tata Steel group is among the top global steel companies with an annual crude steel capacity of nearly 30 mtpa
- ❑ World's second most geographically diversified steel producer, with operation in 26 countries and a commercial presence in over 50 countries.
- ❑ Tata Steel Group recorded a turnover of US\$ 22.32 billion in FY15.
- ❑ Tata Steel group has over 80000 employees across five continents.
- ❑ Ranked amongst the Fortune 500 companies
- ❑ Established in 1907- India's first integrated steel plant - 100 years old.
- ❑ The Jamshedpur Works currently comprises a 9.7 MTPA Crude steel production facility and a variety of Finishing Mills.
- ❑ Currently setting up a 6.0 MTPA green field Steel plant in Odisha.
- ❑ Own raw material
- ❑ Amongst one of the most profitable steel companies in the world
- ❑ One of the Key customer - Indian Auto sector



Energy Policy



TATA STEEL



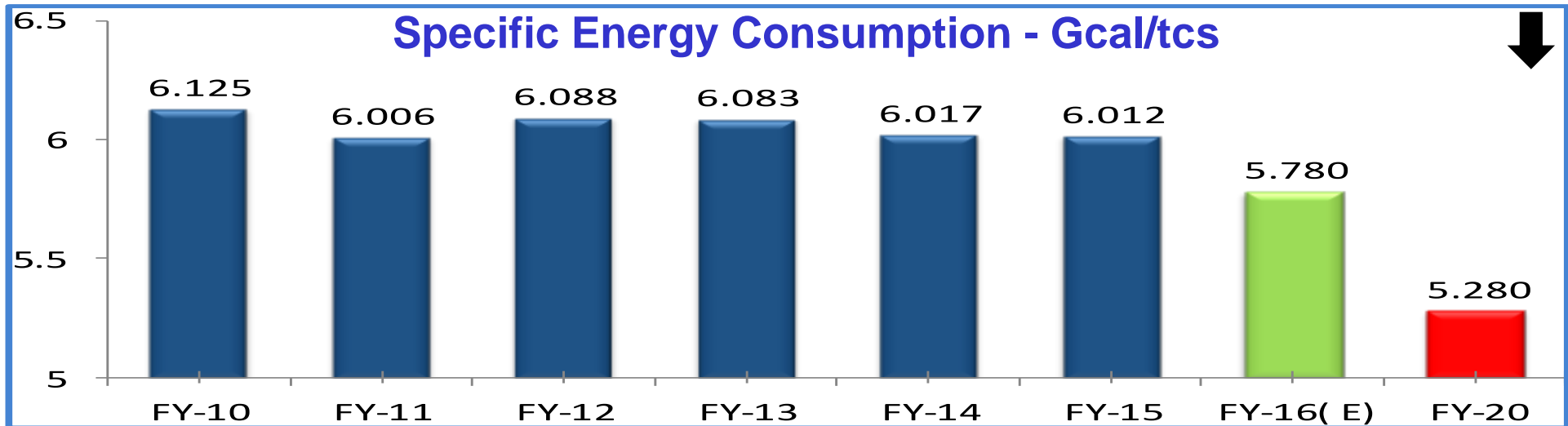
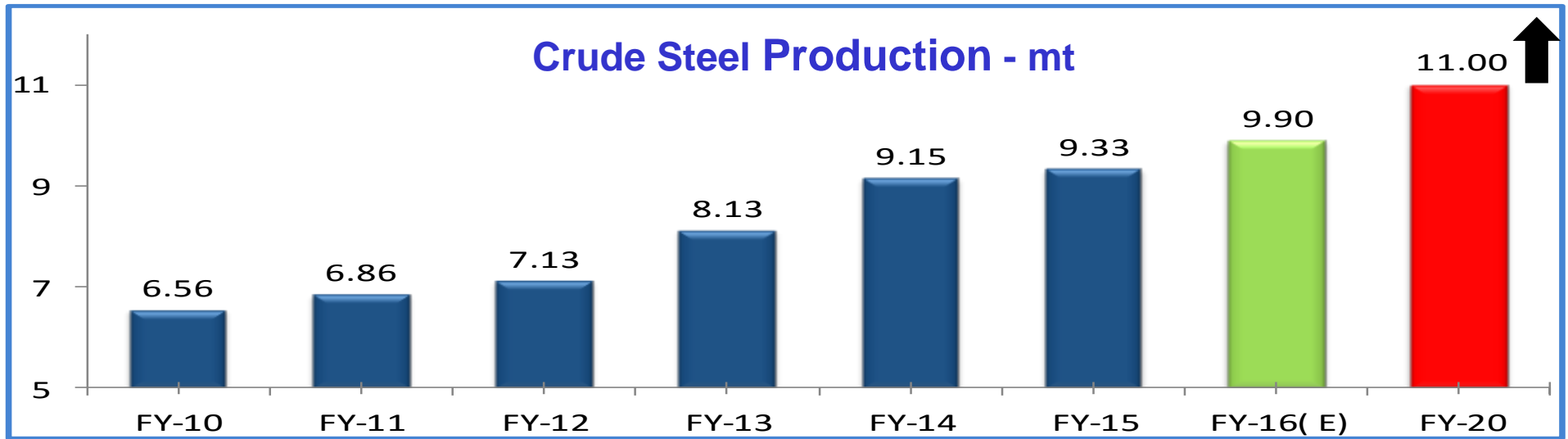
ENERGY POLICY

Tata Steel reaffirms its commitment to be a part of a national mission for mitigating climate change issue by efficient use of energy and shall endeavour to :

- Comply with national and international regulations
- Adopt the best available technology to enhance energy efficiency
- Implement world class operation practices so as to conserve energy and natural resources
- Conduct regular energy audit for continual improvement
- Promote energy conservation through mass awareness

T V Narendran
Managing Director

Date : November 1, 2013



Energy saving Measures taken at Tata Steel Ltd.(I)



During the decade Tata Steel has implemented a number of measures to improve energy efficiency to sustain reduction in specific energy consumption which are depicted below :

Implementation of best practices (FY'04 – FY'07)

- Utilization of by product gases for Steam & Power generation,
- Phasing out old and energy inefficient Units,
- Enhancing by product gas recovery and optimization of operating practices.
- Regular Energy Audit & implementation of its recommendations.
- Coal injection at Blast Furnaces
- Adoption of 100% continuous casting

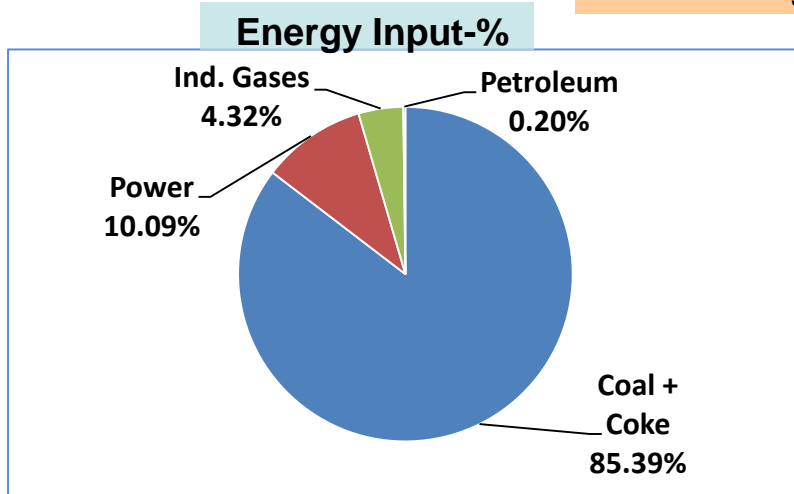
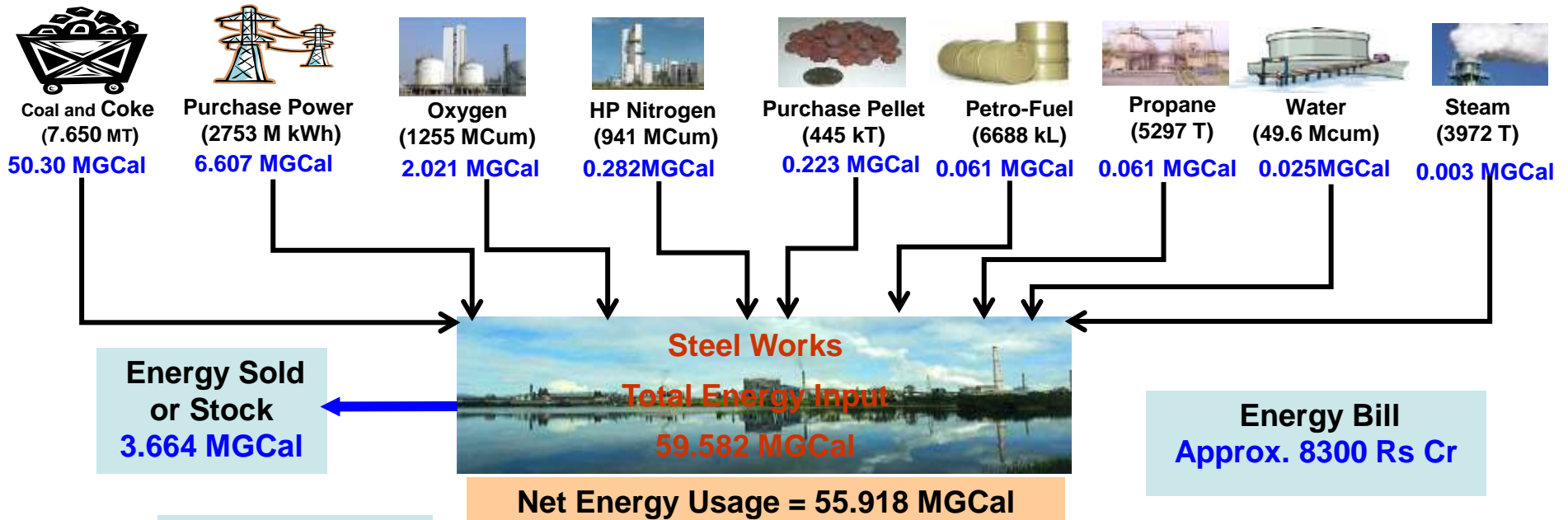
Adopting best available technologies (FY'08- FY'12)

- Waste heat recovery from waste gas of Blast Furnace stoves.
- Installation of Top Recovery Turbine,
- Use of Regenerative Burners at Hot Strip Mill for maximizing fuel efficiency
- Coke Dry Quenching
- Application of V/F drives.
- Upgraded Centralized Energy Management Centre.
- Large size Bl. Fces (H& I) with higher energy efficiency.

New and emerging technologies (FY'13- FY'16)

- Thin Slab Caster and Rolling,
- Use of Pellets and shift to alternate fuel for utilizing lean by-product gases.
- Use of Solar Energy + LED lights for the street –To promote use of renewable energy in our operations
- Coal injection @ 200 kg/thm at Blast Furnaces.

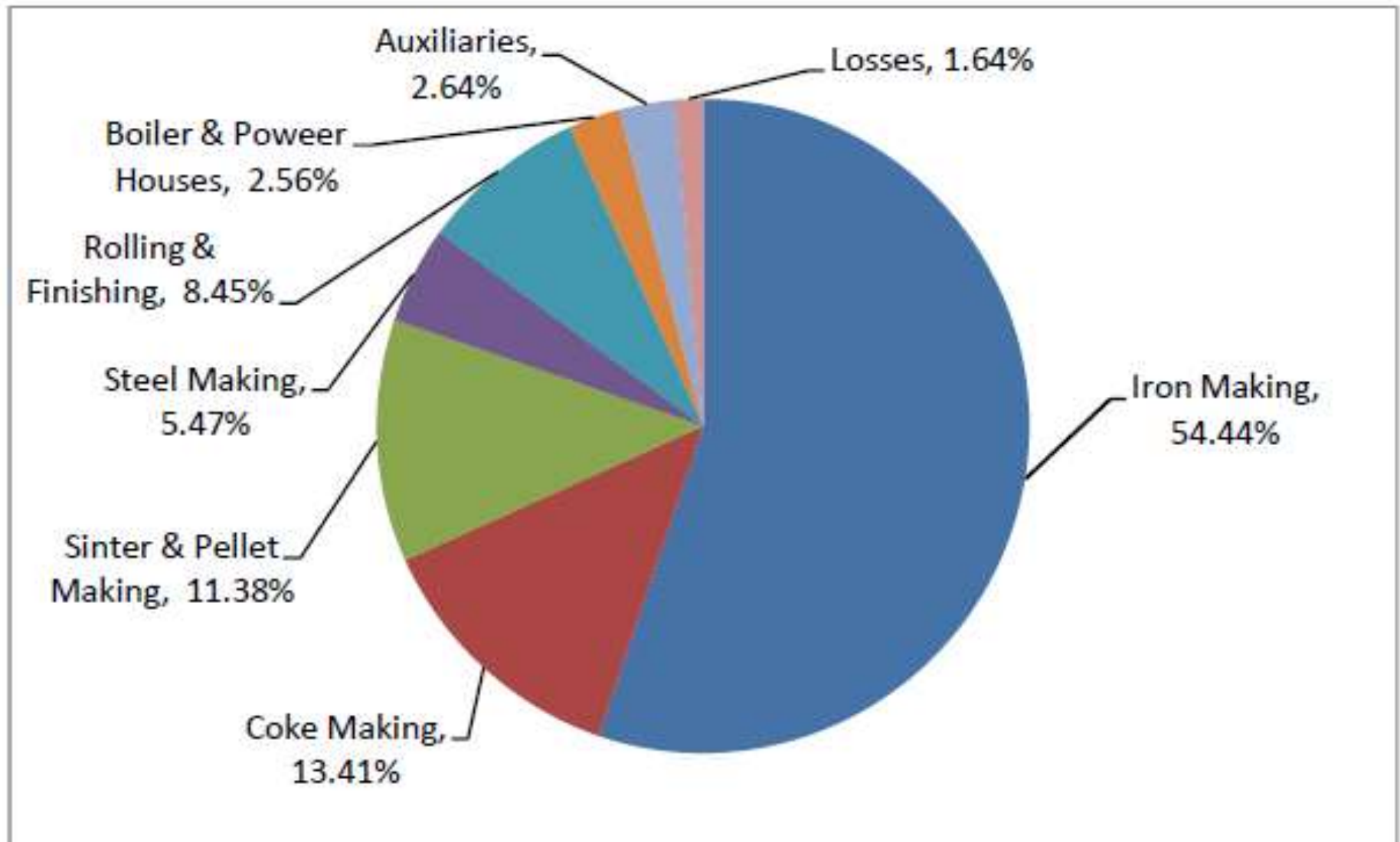
Energy Input to Steel (FY15)



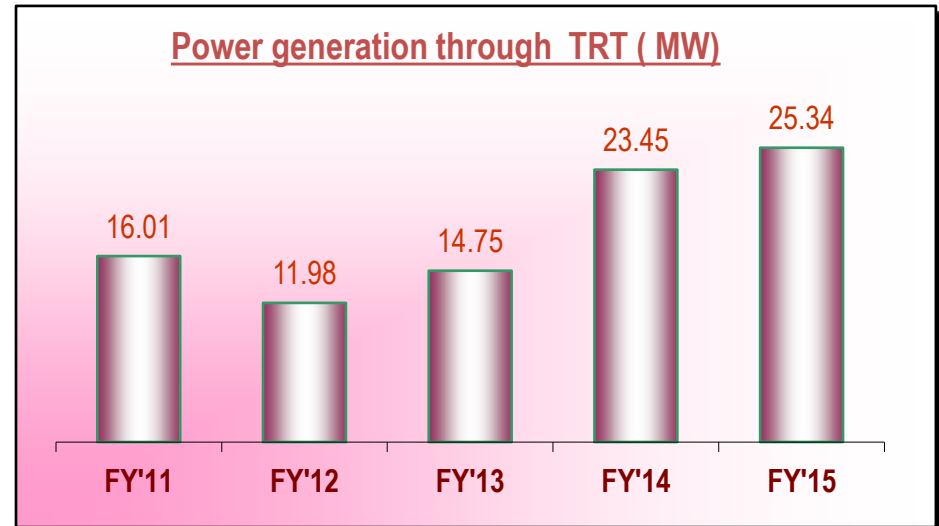
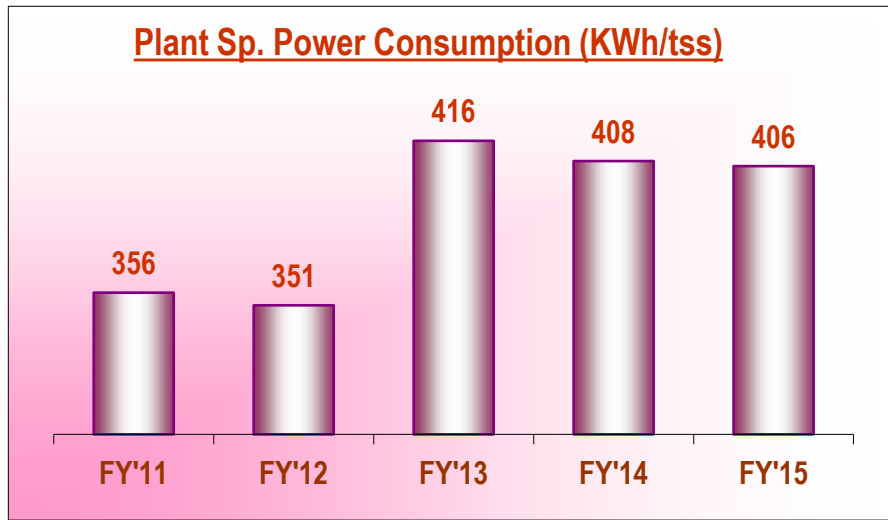
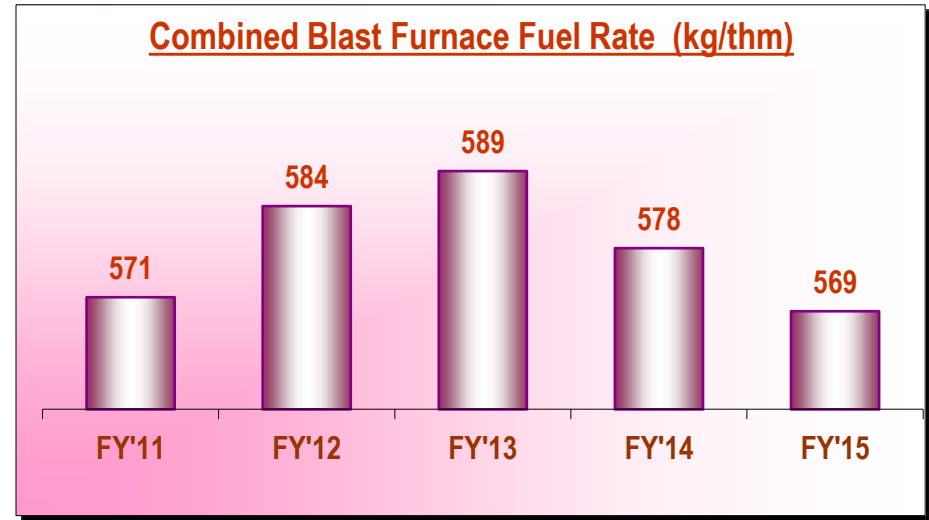
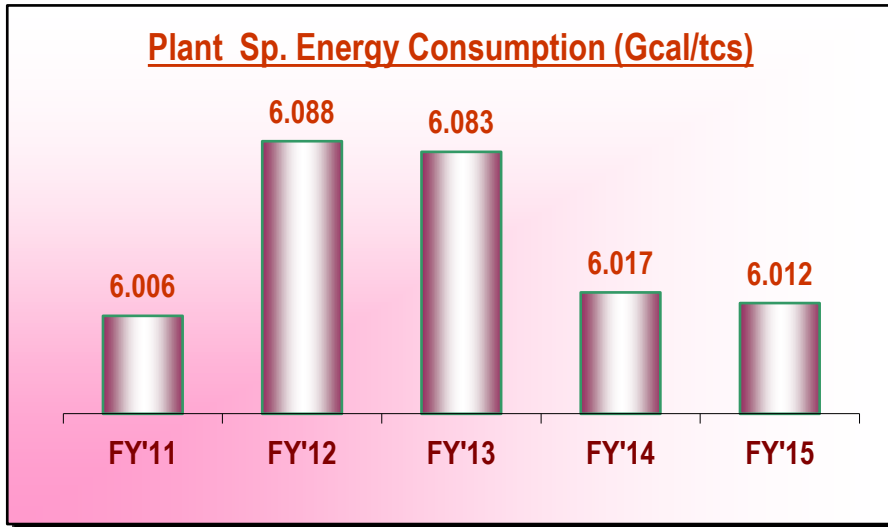
- ❖ Ore based integrated Iron and Steel making processes are highly energy intensive.
- ❖ It contributes to approximately 40% of the works saleable steel cost.
- ❖ 85% energy consumption is in the form of coal/coke.

MGCAL: Million Gega Calorie

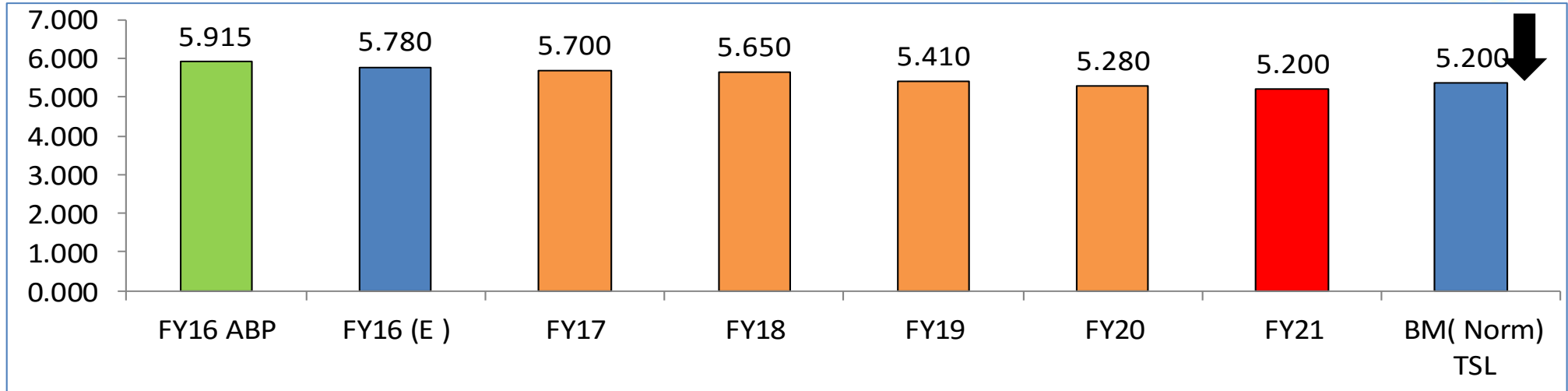
Stage-wise Sp. Energy Consumption - % (FY15)



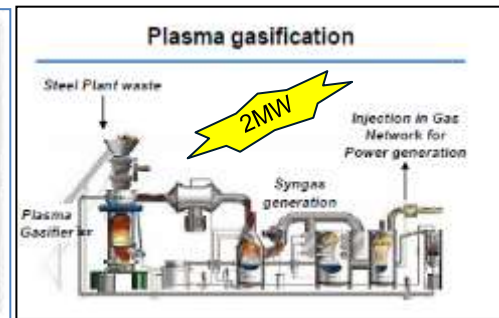
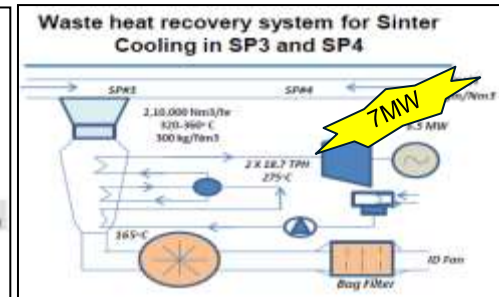
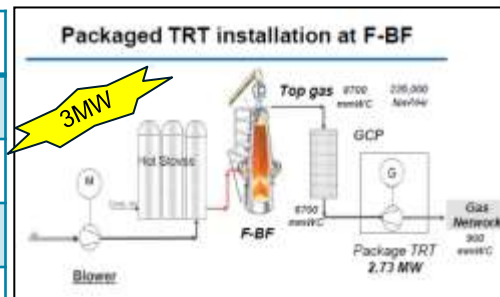
Performance (FY15)



Long Term Plan-Specific Energy Consumption-Gcal/tcs



Projects in progress	Reduction in SEC 0.550 Gcal/tcs	1	Power generation from CDQ (Batt 10 & 11)
		2	TRT at F Blast Furnaces
		3	Waste heat recovery from Sinter Plant 3 & 4
		4	Duel Fuel Burner system in Pellet Plant
		5	New LD Gas Holder for recovery from LD-2
		6	Methane from By product gases
		7	Additional power generation from 25 MW at Power House # 4
		8	Waste to energy (Plasma Gasification)
		9	Power generation from additional BF gas



Recommended Customized List of Energy Saving Technologies in Indian Steel Industries



Category		Title of Technology
Sintering	1	Sinter Plant Heat Recovery(Steam Recovery from Sinter Cooler Waste Heat)
	2	Sinter Plant Heat Recovery(Power Generation from Sinter Cooler Waste Heat)
	3	High Efficient (COG) Burner in Ignition Furnace for Sinter Plant
Coke Making	4	Coke Dry Quenching (CDQ)
	5	Coal Moisture Control (CMC)
Iron Making	6	Top Pressure Recovery Turbine (TRT)
	7	Pulverized Coal Injection (PCI) System
	8	Hot Stove Waste Heat Recovery
Steel Making	9	Converter Gas Recovery Device
	10	Converter Gas Sensible Heat Recovery Device
	11	Ecological and Economical Arc Furnace
	12	Waste Heat Recovery from EAF
Recycling and Waste Reduction	13	Rotary Hearth Furnace Dust Recycling System
Common Systems	14	Inverter (VVVF; Variable Voltage Variable Frequency)Drive for Motors
	15	Regenerative Burner Total System for reheating furnace
General Energy Savings and Environmental Measures	16	Energy Monitoring and Management Systems
	17	Cogeneration (include Gas Turbine Combined Cycle (GTCC))
	18	Management of Compressed Air Delivery Pressure Optimization
	19	Power Recovery by Installation of Steam Turbine in Steam Pressure Reducing Line

End of Presentation