



# Situation Analysis for SME Sector

Orissa Cluster

*Submitted to  
TERI*

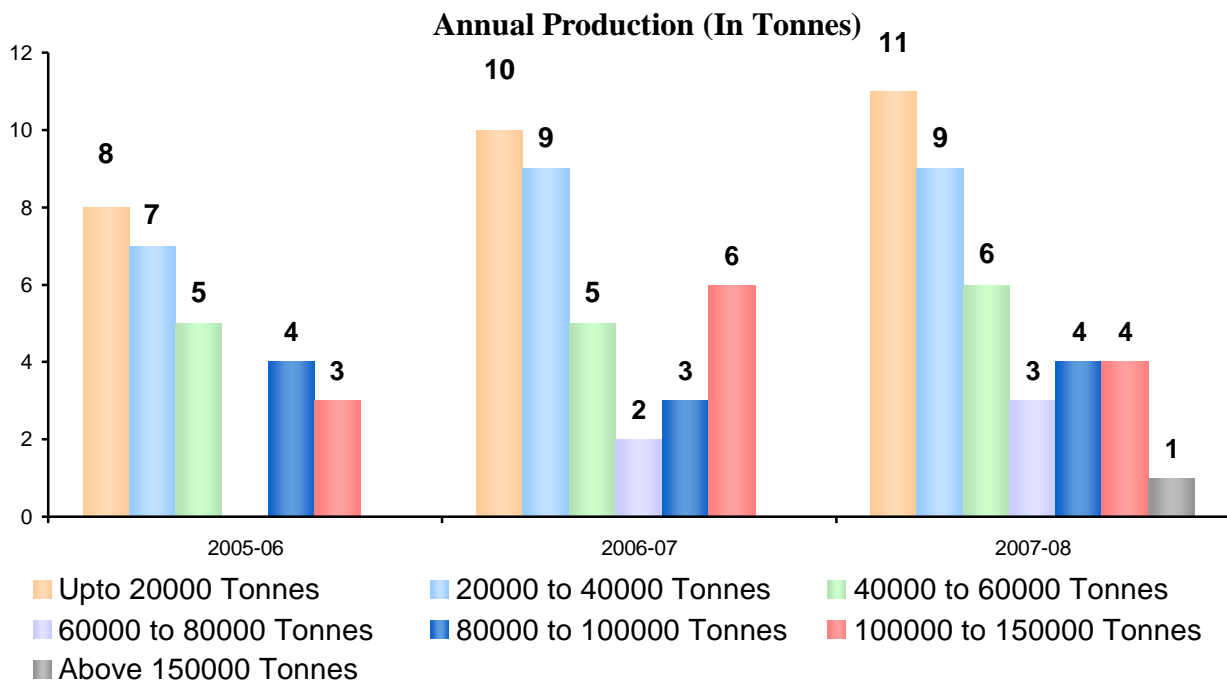
*By*

 **AC Nielsen ORG-MARG**

## **SUMMARY OF FINDINGS**

- There are approximately 45 units in this cluster who are engaged in manufacturing of Sponge Iron.

### ➤ **PRODUCTION:**

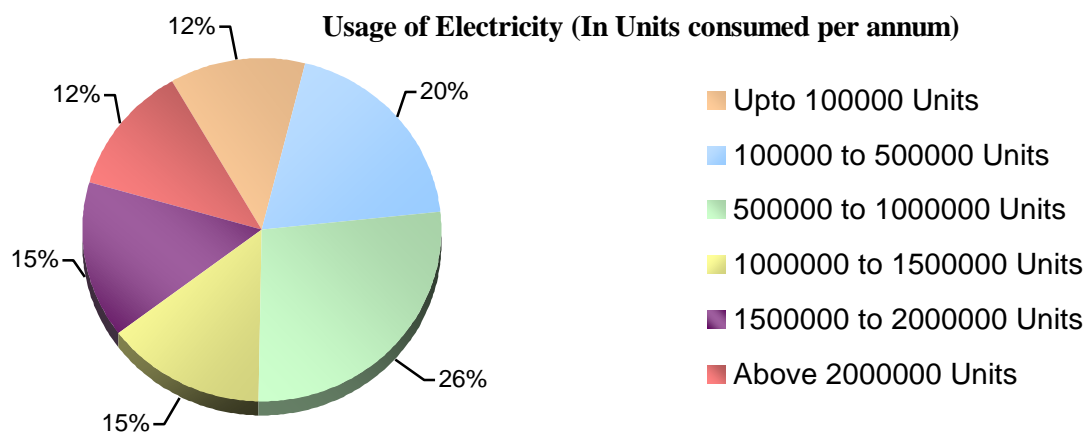


➤ **ENERGY REQUIREMENTS**

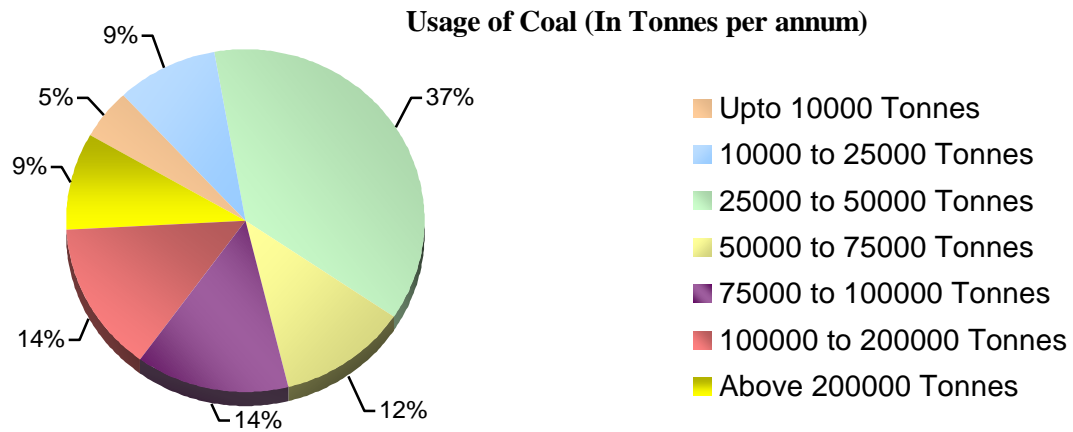
• CUMULATIVE FUEL USAGE

	<b><i>Qty consumer per annum</i></b>	<b><i>Number of Units using the fuel</i></b>
<b><i>Electricity</i></b>	<b><i>40038000 Units</i></b>	<b><i>41</i></b>
<b><i>Coal / Hard Coke</i></b>	<b><i>3781560 Tonnes</i></b>	<b><i>43</i></b>
<b><i>HSD</i></b>	<b><i>644000 Liters</i></b>	<b><i>39</i></b>

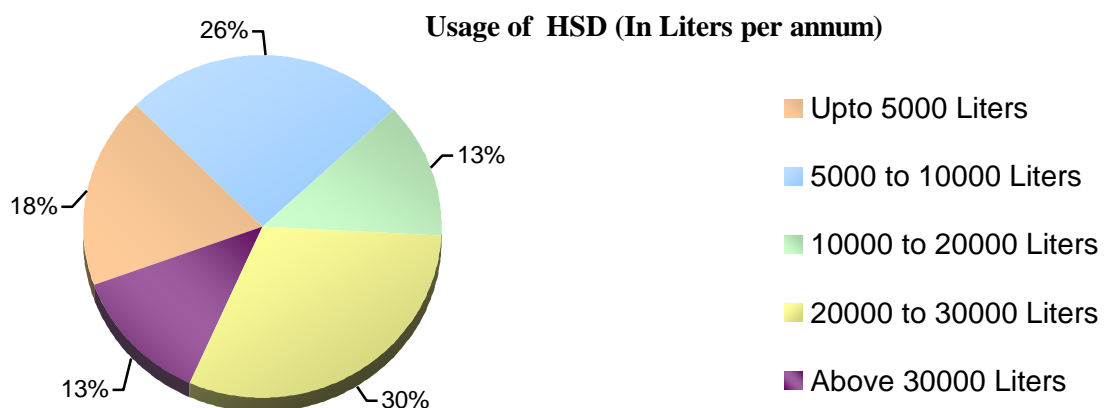
• USAGE OF ELECTRICITY (IN UNITS CONSUMED PER ANNUM)



• USAGE OF COAL (IN TONNES PER ANNUM)



- **USAGE OF HSD (IN LITERS PER ANNUM)**



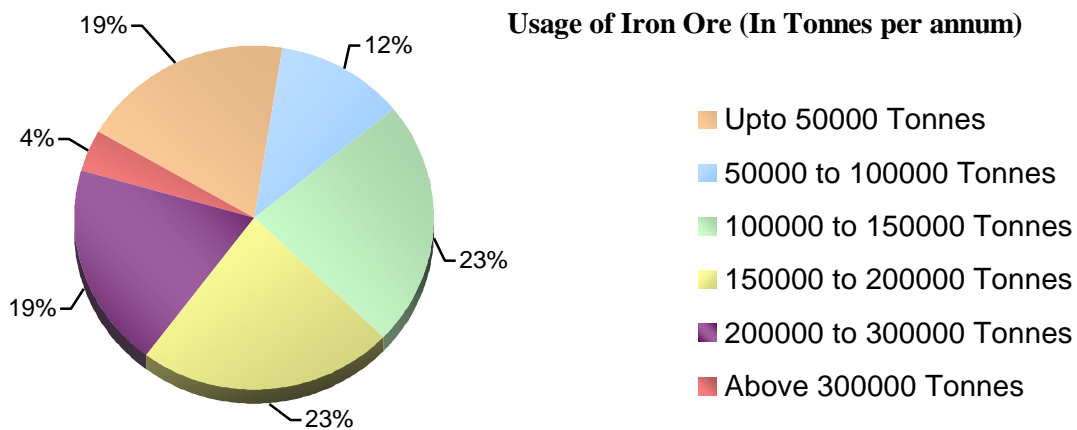
➤ **RAW MATERIAL REQUIREMENT**

- CUMULATIVE RAW MATERIAL USAGE

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	<b><i>Qty consumer per annum</i></b>	<b><i>Number of Units using the raw material</i></b>
<b><i>Iron Ore</i></b>	<b><i>3837000 Tonnes</i></b>	<b><i>26</i></b>

- USAGE OF IRON ORE (IN TONNES PER ANNUM)



## **FIELD OBSERVATIONS**

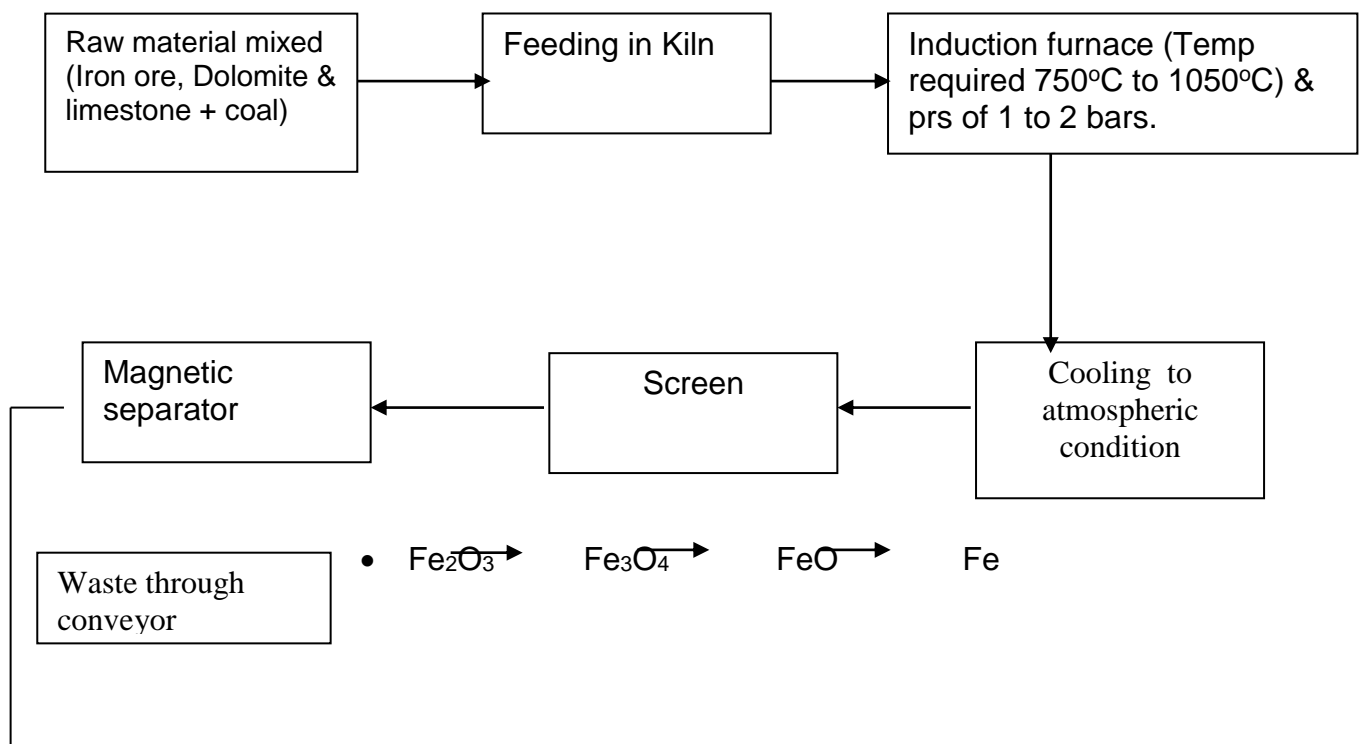
- ✓ As per the field findings this cluster is not an SME cluster as the plant & machinery cost is more than Rs. 20 crs.
- ✓ In Mayurbhanj, Keonjhar and Sundergarh around 130 sponge iron factories were functioning, of which over 50% were illegal. Many are operating even without NOCs. Clearance procedures and Public hearings are unheard of here and inspite of this in the past two years people have managed to get almost 6 plants to withdraw or stop construction in Sundergarh. The main reason cited by the people for opposition has been the large-scale air and water pollution, which had started affecting not only their health but also that of their livestock, agriculture and land.
- ✓ Sponge iron also known as direct reduced iron is extracted from iron ore and is used in the making of steel
- ✓ In Orissa the most affected district is Sundergarh where almost 50 of these plants are situated. The district inspite of being a Schedule V area is facing a situation where land is being transferred to these companies without NoCs from the Gram Sabha
- ✓ These units are dependant on National Mineral Development Corporation (NMDC) and private miners for iron ore
- ✓ Sponge iron is used for making long steel products such as ingots and billets.
- ✓ In sundergar district 16 nos, In Keonjhar district 14 nos, Jharsuguda District 11 nos & in Jajpur district 4 nos.
- ✓ All the sponge iron units are mechanized in nature and are in operation since last 7/8 years, there are some units, which have started very recently - 2 years back.
- ✓ The units are using technology sourced from Lurgi.
- ✓ All the units are running continuously for 3 shifts and are sourcing power from the grid @ 3.90/- per unit, having HT connections. Some units have CPP.
- ✓ If a plant has a total annual production capacity of 6.9 million ton, it requires about 17 million-ton iron ore and 13 million ton of coal.
- ✓ The sponge iron units have an high energy cost of 30 to 35% and the raw material cost is 60%t of total production cost

**Electricity**

- ❖ Electricity supply by North Eastern Electricity supply company of Orissa Ltd, Corporate office, Januganj, Balasore, Ph- 06782-269864
- ❖ Western Electricity supply company of Orissa Ltd, corporate office- Burla, Sambalpur, Orissa, Ph-0663-2430892, 2430895
- ❖ Power getting from grid, duration of electricity 20 to 22 hr regularly

**Equipments**

- Induction furnace – 15 ton
- Crusher (Coal crusher, iron crusher & slag crusher)
- Sponge iron kiln – 350 to 400 tpd
- Motor
- Conveyors

**Process**



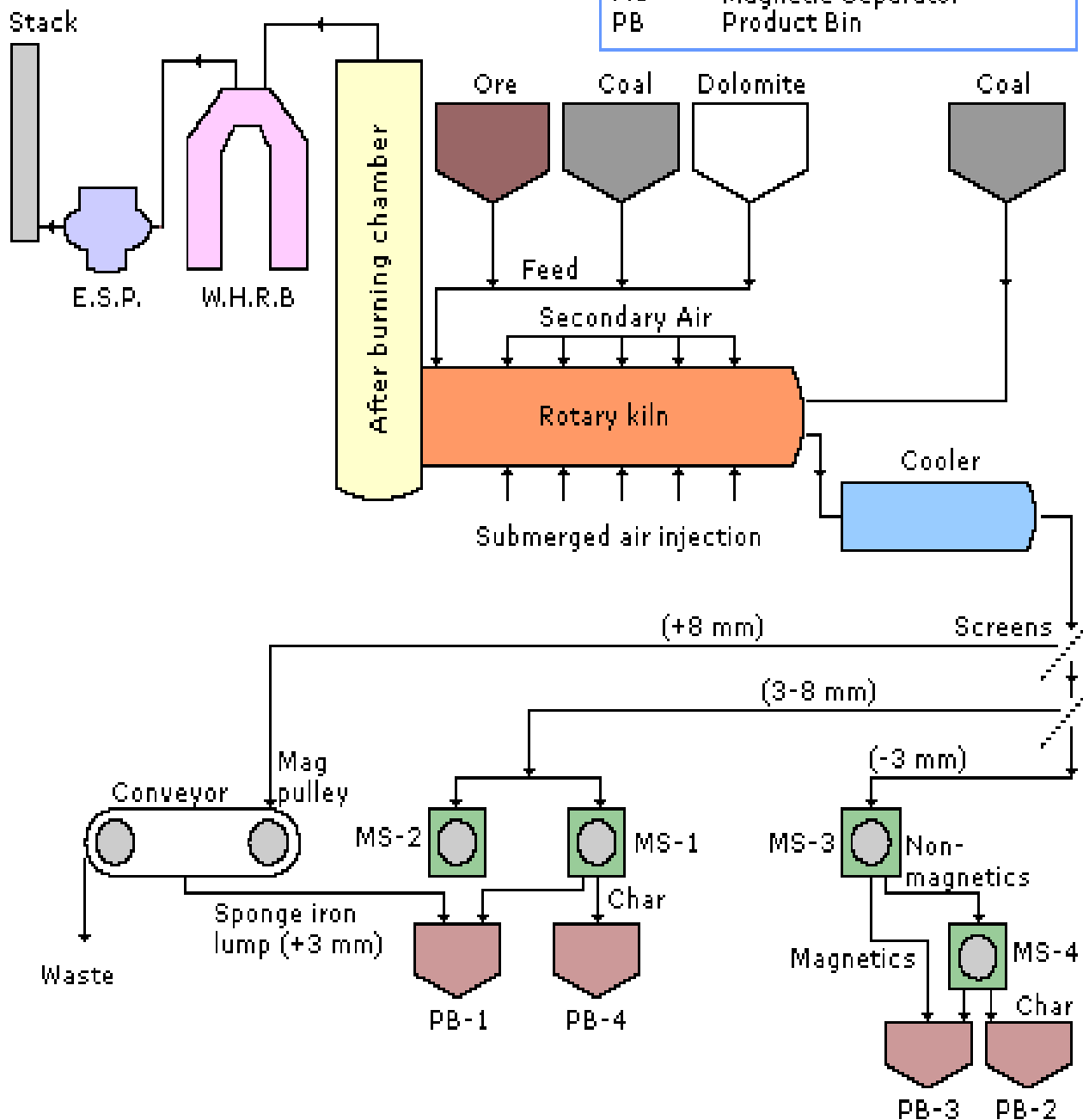
Final  
Product

- For rolling process temperature required 900°C to 1100°C & Prs required 7 kg to 14 kg CM<sup>2</sup>

# Manufacturing sponge iron by the TDR process

## LEGEND

E.S.P. Electro Static Precipitator  
W.H.R.B. Waste Heat Recovery Boiler  
MS Magnetic Separator  
PB Product Bin





**Mines**



**Iron OreYard**



**Coal yard**



**Sponge iron plant**



**Kiln**



**Sponge iron**

**SERVICE PROVIDER**

**Raw material supplier (Coal)**

- ❖ Mahanadi Coal field Ltd, Brajraj nagar, Orissa
- ❖ Basundhara Coal Field Ltd, Talcher, Orissa
- ❖ Global Coal & Mining pvt. Ltd, Belpahar
- ❖ Bhatia International Ltd, Belpahar

**Raw material supplier ( Iron ore)**

- ❖ Rungta Mines, Barbil, Orissa
- ❖ Sirajudhin Minerals, Barbil, Orissa
- ❖ Essel Pvt. Ltd, Joda, Orissa
- ❖ East India Pvt. Ltd, Orissa
- ❖ S.Lal & co ltd, Barbil

HSD (Indian Oil, Bharat Petroleum)

**Equipment supplier**

Hari Machines Ltd  
Rajgangpur,  
Orissa,  
Ph-06624-220141/161

B.K. Engineering  
Bhilai,  
Chhatisgarh

Venus Control, Noida (U.P)

Ucan, Mumbai

Elgpa Eng. Ltd, Hyderabad

Ashok Technologies

A – 15, Maypuri Industrial Area, Phase – 1, New Delhi – 110064,

Ph-011-28115308, 228116570

**Association**

Orissa Sponge Iron Manufacturers' Association.

Palash Palli,

Bhubaneswar-751020

Ph-0674-2594875 (Mr. G.S. Agarwal)

**Bankers**

✓ All the units are associated with the banks for CC limits.

- IDBI
- State bank of India, Jajpur road, Orissa
- Canara bank, Jajpur, Orissa
- United bank of India
- Bank of Baroda, KEONJHAR,ORISSA-758001