

## BRIEF SUMMARY

The Sandur Manganese & Iron Ores Limited (SMIORE) is presently producing 0.254 MTPA of Manganese Ore and 1.60 MTPA of Iron Ore from its **MANGANESE AND IRON ORE MINE** which is spreading over an area of 1860.10 Ha falling in Swamymalai and Ramanamalai forest blocks at Deogiri, Kammaturu, Subbarayanahalli & Ramgad Villages, Sandur-Taluka, Ballari-District, Karnataka.

Mining Lease area comprises Forest Land of 1612.72 Ha and Revenue land –of 247.38 Ha).

Environmental Clearance was obtained from Ministry of Environment, Forests and Climate Change (MoEF&CC) **vide letter No.110015/96/2006-IA.II (M) dated 24.01.2007** for 0.55 MTPA Manganese Ore production and 1.60 MTPA Iron Ore production from the Mining lease area .

Forest Clearance was obtained from MoEF&CC **vide letter no: F.No - 8-17/94-FC on 14.03.2007** for an area of 1615.64 ha of Forest Land involved in the Mining Lease area.

The Mining Lease as per MMDR Amendment Act 2015 is valid for 20 Years (01.01.2014 to 31.12.2033). 3<sup>rd</sup> renewal of Mining Lease was granted by the Government of Karnataka vide Notification dated 23 September 2014 and Mining Lease Deed executed on 20 March 2015.

SMIORE is proposing to enhance Iron Ore Production from 1.60 MTPA to 3.85 MTPA retaining the Manganese Ore production at 0.55 MTPA along with Proposed 2.0 MTPA Ore Beneficiation Plant, 1.85 MTPA Crushing & Screening Plant and Downhill Conveyor System (DCS) is being implemented between Kammathuru Iron Ore Mine (KTIO) and PMBR (BMM) siding for eco-friendly transportation of Iron Ore. TOR was obtained from MoEF&CC **vide letter No.J-11015/113/2009-IA.II[M] dated 26.06.2009**. Public Hearing was conducted on 30.04.2010 and Final EIA Report was submitted on 08<sup>th</sup> June 2010 for Final Environmental Clearance.

The EAC Meeting was held on 26<sup>th</sup> August 2010. During the deliberations the EAC (Non coal mining) committee sought certain information. A letter was received from MoEF&CC vide Lr No.J-110115/96/2006-IA.II(M) dated 12<sup>th</sup> October 2010 to furnish the following details.

- i. Effective safeguard measures need to be put in place to control RSPM levels and their effectiveness should be shown with supporting data.
- ii. Monitoring stations should also be located in the down wind direction and data provided

- iii. Hydro-geological study should be conducted and report may be furnished.
- iv. Details of slime management should be furnished
- v. The mining scheme is valid upto March, 2011 and therefore, the approved mining scheme beyond March, 2011 should also be provided.

SMIORE has submitted the replies to the above letter on 02<sup>nd</sup> December 2010. In the meantime, the Hon'ble Supreme Court vide its Orders dated 29<sup>th</sup> July 2011 and 26<sup>th</sup> August 2011 suspended all mining operations in Ballari, Chitradurga and Tumkur Districts of Karnataka State

A Joint Team constituted by the Hon'ble Supreme Court by Order dated 6 May 2011 surveyed during August and October 2011 our Manganese and Iron Ore Mines and the Central Empowered Committee (CEC) constituted by the Hon'ble Supreme Court classified our leases in Category 'A' as they did not find us to be involved in any illegalities.

Meanwhile, MoEF&CC vide circular No.J-11013/41/2006-IA.II(I) dated 20<sup>th</sup> September 2011 decided not to process any applications till the Hon'ble Supreme Court revokes its aforesaid suspension Orders.

The mining operations resumed based on the Govt. of Karnataka **letter No. DMG/R&R/2012-13/19 dated 24.01.2013** as the mine was categorized as Category – A fixing SMIOREs Iron ore production at 0.74 MTPA and Manganese as 0.18 MTPA and complying with R & R Plan recommended by ICFRE.

Later CEC vide letter No.2-75/CEC/SC/2015-Pt.II dated 18 March 2016 enhanced the permissible annual production of Iron Ore from 0.74 MMT to 1.60 MMT with the remarks that based on the road capacity (being minimum amongst all the three prescribed criteria) the permissible annual production could be to 3.3 MMT, however, as the EC is for 1.6 MMT, it is restricted to 1.6 MMT. Similarly, CEC vide letter no. 2-75/CEC/SC/2015-Pt.III dated: 27.06.2016 enhanced the permissible annual production of Manganese Ore from 0.18 MMT to 0.254 MMT.

Hon'ble Supreme Court has by Order dated 13 April 2012 prescribed the criteria for Maximum Permissible Annual Production (MPAP) based on (a) availability of reserves (b) availability of space for dumps; and (c) evacuation capacity. Accordingly, based on the Supplementary Environment Management Plan (commonly called R&R Plan) prepared by ICFRE on the last occasion and further reserves established as per United Nations Framework Classification (UNFC) and approved by IBM on 5 October 2018, the MPAP from our mines will be as under:

S.No	Criteria	Capacity in Million tonnes / annum	
		Mn ore	Iron ore
1.	Based on Reserves	0.66	5.09
2.	Based on Dumps	0.62	8.31
3.	Based on Roads	0.96	3.393

Since Iron Ore is also produced from Manganese Ore pits, and roads used for the transportation of both the ores being common, the total production capacity based on total transportation capacity is 4.353 MTPA(3.393+0.96). Considering the maximum permitted production capacity of 4.35 MTPA for Iron Ore and Supreme Court Order dated 14 December 2017, SMIORE proposes to pursue the expansion proposal which is already appraised by MoEF&CC for enhancement in EC for Iron Ore production from 1.6 to 3.85 MTPA. Since the proposal was not submitted online, the same proposal (with no change in the proposal) is being submitted to MoEF&CC. The details of the project are presented in the enclosed Pre-Feasibility Report (PFR). All details presented in the enclosed PFR are as per the approved Mining Plan for which the expansion proposal is being pursued.

**The expansion project comprises the following:**

- a. Increase of Iron Ore Production From 1.60 to 3.85 MTPA with Total Excavation of 20.30 MTPA (ROM (Mn Ore & Iron Ore) + Waste + Top Soil)  
and
- b. Proposed 2.0 MTPA Ore Beneficiation Plant, a Downhill Conveyor System (DCS) is proposed upto nearest railway siding for eco-friendly transportation of Iron Ore & 1.85 MTPA Crushing & Screening Plant

Total Iron Ore resources available are about 114 Million Tonnes in which resources of iron ore available in Mn Ore pits is coming to be around 69 Million tonnes and this iron ore from Manganese pit is produced as incidental to Manganese Ore production. With the reserves and at the planned production rate, the deposit will have life of 26 years.

Operations in manganese pits are Mechanized as well as manual. Deep hole drilling & blasting will be carried out for loosening OB/SB/IB/Iron ore and excavation will be carried out by using Heavy Earth Moving Machineries like Hydraulic excavators, wheel loaders etc. and loaded on dumpers and transported to designated dumps/stock yard. Due to pockety nature of the Manganese Ore body, which is contaminated with interstitial waste (gang-matti), after jack hammer drilling & blasting in Manganese Ore pockets and these material is loaded by wheel loaders on tippers and transported to

sorting yard where the ore pockets are manually sized, hand sorted at sorting ground by gang workers where gang-matti is separated and quality wise ore is segregated. Each gang consists of 9 members and output per man shift is in the range of 1 to 1.5 tons. Operations in Manganese ore pockets are now partially mechanized by using X-centric Ripper instead of Jack hammer drilling and blasting.

The mine workings in case of Iron Ore deposit are fully mechanized, where Ore and OB are handled mechanically. The mechanized operation includes deep-hole drilling and blasting, heavy earth moving machinery like Excavators, Wheel loaders, Rock breaker, Dumpers, and Tippers, water tanker etc.

The expansion proposal comprises **Increase of Iron Ore Production from 1.60 to 3.85 MTPA with Total Excavation of 20.30 MTPA (ROM (Mn Ore & Iron Ore) + Haematitic Siliceous Ore + Waste + Top Soil)**

The proposal also comprises installation of 2.0 MTPA Iron Ore Beneficiation Plant and Mineral Beneficiation of low grade Manganese Ore in a small scale of 100 Tons/hour capacity.

### **Iron ore beneficiation**

The Run Of Mine (ROM) Ore produced from the mines will be screened in the screening plant and oversize material will be crushed in the crushing plant and then it is rescreened in the screening plant. A higher capacity semi-mobile crushing and screening plant will be established for meeting the requirement of processing ROM ore.

As the proposed wet beneficiation to process the low-grade Iron Ore is only about 300 tonnes/hour, the quantity of tailing to be generated will be about 50-60 tonnes/hour with less than 35% Fe and in case of Manganese Ore it will be about 12 to 18 tonnes per hour with about 17% Mn & 30% Fe. These tailings will be in the form of cake with moisture content of about 10-12%, hence it will become dry immediately. Such tailings are proposed to stack separately adjacent to the plant or will be stored in the worked out part of the pit and will be sold directly depending on the demand or can be used for making bricks or rejects will be undertaken by Hydro-metallurgical methods (Leaching) to recover the balance material. All precautions and protective measures implemented and there is no toxic effect of tailing.

Out of 3.85 Million tonnes of saleable, 1.85 Million tonnes is planned to be produced from dry process i.e. by crushing and screening and remaining 2.0 million tonnes is planned to be produced from wet process with 80% recovery from ROM. Thus, total ROM quantity planned annually is 4.3625 Million tonnes for the plan period starting from 2018-19 to 2022-23.

However, till the time Environment Clearance is granted by MoEF for 3.85MTPA and CEC approval for enhanced production of Iron Ore from 1.60MTPA to 3.85MTPA, the existing CEC approved annual production limit of 1.60Million tons will only continue to be produced and sold with only the dry processing i.e. Crushing & Screening

Downhill Conveyor System (DCS) of 1.2 km.

A Downhill Conveyor System (DCS) is being implemented from mine to nearest railway siding for eco-friendly transportation of Iron Ore is proposed from Kammathuru Iron Ore Mines to Swamihalli Railway Siding. Environment friendly and pollution free transport of Iron Ore @300 TPH which is also in compliance with the order dated 7 December 2017 of the Hon'ble Supreme Court.

The waste material generated during earlier mining operations was dumped over an area of 377.02 Ha of manganese and iron ore mining. The old static dumps have been protected and are reclaimed by afforestation programme.

The mining lease is valid till December, 2033. The waste generation till the lease period is estimated to be about 206.56 million tonnes and mineral reject generation is 12.36 million tonnes. Tailings generation is about 7.5 million tonnes

Sub-grade iron ore stacked separately in the mining lease area as on March, 2018 is 2.35 million tonnes.

Present water consumption is 1225 m<sup>3</sup>/day. This water is sourced from bore wells within the mining lease area equipped with pumping arrangement. For this expansion another 3000 m<sup>3</sup>/ day is required for which application for obtaining permission was submitted to KGWA on 13.11.2018.

The total power requirement of mine area, 1013 KVA for the present production is met from grid. The additional requirement will be met from same source.

To meet the power requirement during contingency, SMIORE has installed 22 DG sets totaling to 2165 KVA at different points.

SMIORE has employed about 2034 persons for carrying out the mining operations at SMIORE complex. An additional manpower of 852 will be required to handle the increased production.

The mining activity carried out in the area has a positive socio-economic impact in the localities as direct & indirect employment

potential is generated due to mining and allied activities in the area.

SMIORE has constructed a full-fledged colony consisting of 783 houses for the benefit of employees. Colony of SMIORE is located at Deogiri and Subrayanahalli camps. All the necessary infrastructure facilities such as School, Occupational Health Center, Park and Playground, Temple, Commercial Complex, etc., are provided in the colony. Additional houses of 200 are proposed for the enhancement production in the same camps.

The capital cost of the project is estimated to be about Rs. 200 crores