

Brief Summary

MSPL Limited (MSPL) has established a 1.2 MTPA Iron Ore Pellet Plant over 41 Acres, at Survey no. 2, 8, 9, 12 to 15, 132, 136 & part of 5, 6, 7, 16, 17 at Village: Halavarthi, Tahsil: Koppal, District: Koppal, Karnataka. Government of Karnataka has issued Environmental Clearance for establishment of pellet plant vide letter no. FEE 28 ECO 2010 dated: 1/12/2010.

Karnataka State Pollution Control Board has granted consent for operation, combined consent order no. KSPCB/SEO/MINES/2010-11/673, Dated: 08.12.2010.

Honourable NGT vide order dated 27.05.2014 directed that such projects require Prior Environmental Clearance under EIA Notification 2006 from MOEF & CC , New Delhi.

With above direction Karnataka State Pollution Control Board had issued a letter vide PCB/MINI/LIMESTONE/2014-15/3579 Dated 16th Oct 2014 to MSPL Ltd, to obtain EC from MOEF&CC.

The TOR was prescribed for undertaking detailed EIA-EMP study in addition to generic TOR vide Letter No. F.N. J-11011/383/2014-IA.II (I) Dated: 8th April 2015.

The EC was accorded to the project by MOEF&CC vide their Letter no. F.N. J-11011/383/2014-IA.II (I) Dated: 23rd September 2016.

MSPL has proposed the proposed up-gradation of the existing Wet process of IOGS (Iron ore grinding system) by introduction of additional equipments to form beneficiation circuit to the process.

The project site is located at Latitude 15° 19'49.9" N and Longitude 76°12'12.0"E. The capital cost of Modification / Addition will be approximate Rs. 75 Cr..

Reason for Proposed Upgradation of Wet Iron Ore Grinding System to Beneficiation Circuit

Government of Karnataka allotted two Low Grade Iron Ore Mines for Captive Consumption through E-auction. These two mines are located in Tahsil Sandur in Bellary District.

The purpose of this upgradation is to utilize Low Grade Iron Ore Fines (53 – 54% Fe). The output of this proposed upgradation of IOGS to Beneficiation i.e. Iron Ore of (63.5% Fe) will be used in existing operational Pellet Plant.

The overall production of Pellet Plant will remain same i.e. 1.2 MTPA.

Process:

The iron ore input is iron ore fines (-) 10 mm. The iron ore material is received in underground feed hopper. Iron ore is conveyed to 2 nos day bins. There is needle feeder below the day bins, which discharges the material onto another belt conveyor. This belt conveyor feed the material to one scrubber. Water is mixed with iron ore and loose clay particles are dislodged and come into slurry. Output of scrubber goes to a vibrating screen having 1 mm aperture. Screen coarse size particle are carried to the primary ball mill through a belt conveyor. Undersize particles from the screen are sent to de-sliming cyclones at 25 μ m. De-sliming cyclone underflow is mixed with primary ball mill output and overflow is sent to tailing thickener. Output from primary ball mill is fed to sizing hydro-cyclone targeted at 300 μ m size. The underflow (+300 μ m) from this cyclone will route back to ball mill for further grinding and overflow (-300 μ m) will proceed for further beneficiation steps.

Sizing hydro-cyclone overflow will pass through de-sliming cyclone to prepare material (30% solids) for spiral circuit. Material with about 30% solids will pass to spiral circuit, where two products namely concentrate and tails will be generated. Spiral concentrate will have superior Fe grade of +63% Fe and will go to final grinding step. Spirals tails will go to a regrinding mill. The product of regrinding mill will be fed to magnetic separator circuit. Magnetic circuit concentrate will have +63% Fe grade and will go to final grinding step. Output of final grinding mill will be sent to the concentrate thickener. Tails generated from magnetic circuit will be sent to the tailing thickener.

Material from concentrate thickener will be filtered using pressure filter to product cake with about 8-10% moisture and will be stacked in the designated area for pellet manufacturing. Tails from tailing thickener will be sent to tailing filter to

produce cake of about 15-17% moisture. These cakes will be stacked in demarcated open area inside the plant for a short time before shifting to an environmentally controlled adjoining area for storage for further use.

Water Requirement and Source:

The total estimated make up requirement of water for the pellet plant with fine ore beneficiation is 1894.06 m³/day. (78.9 m³/Hr) and it will be sourced from Tungabhadra Dam.

Power Requirement and Source:

The power requirement for the proposed Modification and Pellet Plant is 15 MW and will be met by the Karnataka State Electricity Board sanctioned quota. Power will be received at 220 kV from Utility (GESCOM) and stepped down to 33 KV and again to 6.6kV for further distribution. The maximum demand of the total plant covered under this report is about 15 MW at 0.95 p. f. with an annual energy consumption of 80 million units.

Man power Requirement:

The employment generation after the upgradation project will be about 305 nos including for Pellet Plant.