

**Ministry of Environment, Forest and Climate Change  
(Impact Assessment Division)**

**SUMMARY RECORD OF THE FIFTEENTH (15<sup>th</sup>) MEETING OF EXPERT APPRAISAL COMMITTEE HELD ON 2<sup>ND</sup> – 3<sup>RD</sup> FEBRUARY, 2017 FOR ENVIRONMENTAL APPRAISAL OF INDUSTRY-I SECTOR PROJECTS CONSTITUTED UNDER EIA NOTIFICATION, 2006.**

The fifteenth meeting of the Expert Appraisal Committee (EAC) for Industry-I Sector in terms of the provisions of the EIA Notification, 2006 for Environmental Appraisal of Industry-I Sector Projects was held on 2<sup>nd</sup> – 3<sup>rd</sup> February, 2017 in the Ministry of Environment, Forest and Climate Change. Central Pulp and Paper Research Institute, Members of EAC have expressed their inability to attend the meeting due to prior engagements. The list of participants is annexed.

After welcoming the Committee Members, discussion on each of the agenda items was taken up ad-seriatim.

**Confirmation of the minutes of the 14<sup>th</sup> Meeting**

The minutes of the 14<sup>th</sup> meeting, as circulated were confirmed subject to following modifications:

**Item 14.3.3**

Expansion of Iron Ore Beneficiation plant from the existing capacity of 10.7 MTPA (throughput) to 16.0 MTPA (throughput), Relocation of tailing Dam at Malda, Laying of Tailing Pipeline and Return Water Pipeline from Beneficiation Plant to Tailing Dam & Laying of Water Pipeline and Slurry Pipeline from Beneficiation Plant to Ghoraburhani- Sagasahi Iron Ore Block by **M/s Essar Steel India Ltd.** at Dabuna, Tehsil Barbil, District Kendujhar Odisha.

<b>For</b>	<b>Read</b>
Expansion of Iron Ore Beneficiation plant from the existing capacity of 10.7 MTPA (throughput) to 16.0 MTPA (throughput), Relocation of tailing Dam at Malda, Laying of Tailing Pipeline and Return Water Pipeline from Beneficiation Plant to Tailing Dam & Laying of Water Pipeline and Slurry Pipeline from Beneficiation Plant to Ghoraburhani- Sagasahi Iron Ore Block by <b>M/s Essar Steel India Ltd.</b> at Dabuna, Tehsil Barbil, District Kendujhar Odisha.	Expansion of Iron Ore Beneficiation plant from existing capacity of 10.7 MTPA (throughput) to 16 MTPA (throughput), Relocation of tailing Dam at Sankari Village in Phuljar Gram panchayat of Banspahal Tehsil of Keonjhar District, Laying of Tailing Pipeline and Return Water Pipeline from Beneficiation Plant to Tailing Dam & Laying of Water Pipeline and Slurry Pipeline from Beneficiation Plant to Ghoraburhani – Sagasahi Iron Ore Block by M/s Essar Steel India Limited at Dabuna, Tehsil Barbil, District Keonjhar, Odisha.
Tailing Dam site at Sankari Village in Phuljar Gram panchayat of Banspahal Tehsil of Keonjhar District was finally approved by the Committee.	

### 15.3 ENVIRONMENTAL CLEARANCE (EC)

**15.3.1** Proposed installation of the Ferro Alloy Plant through setting up of 1x6 MVA and 1x9 MVA submerged Arc Furnaces for production of Ferro Manganese (38,156TPA) or Silico Manganese (27,109TPA) or Ferro Silicon (10,421TPA) by **M/s Electrosteel Casting Limited**, located at Haldia, District Purba Medinipur in West Bengal – J-11011/02/2016-IA.II(I). (Prposal No. IA/WB/IND/42082/2016 date of Submission 9<sup>th</sup> January, 2017) [10:30 am to 11:30 am]

The proposed Ferro-alloy plant of **M/s Electrosteel Castings Ltd. (ECL)**, located at Haldia, District Purba Medinipur, State West Bengal was initially received in the Ministry on 22<sup>nd</sup> January, 2016 for obtaining Terms of Reference (TOR) as per EIA Notification, 2006. The project was appraised by the Expert Appraisal Committee (Industry) [EAC(I)] during its 4<sup>th</sup> meeting held on 25<sup>th</sup> February, 2016 and prescribed TORs to the project for undertaking detailed EIA study for the purpose of obtaining environmental clearance. Accordingly, the Ministry of Environment, Forest and Climate Change had prescribed TORs to the project on 7<sup>th</sup> April, 2016. Based on the TORs prescribed to the project, the project proponent submitted an application for environmental clearance to the Ministry online on 9<sup>th</sup> January, 2017.

Considering the own requirement of Ferro Alloy and future growth potential of ferro-alloys market at domestic & international level, PP has proposed to install a ferro-alloy plant at Haldia in West Bengal through installation of 1x6 MVA & 1x9 MVA Submerged Arc Furnaces for production of Ferro-Manganese – 38,156 TPA or Silico Manganese – 27,109 TPA or Ferro Silicon–10,421 TPA. The proposed units along with their capacities are presented below,

Sl. No.	Facilities	Proposed Unit	Production Capacity
1.	Ferro Alloys Plant	1x6 MVA Submerged Arc Furnace & 1x9 MVA Submerged Arc Furnace	Ferro Manganese – 38,156 TPA or Silico Manganese – 27,109 TPA or Ferro Silicon– 10,421 TPA

The total land required for the project is 3.19 acres i.e. 1.29 ha of own vacant Industrial land. No forestland involved. The entire land has been acquired for the project. River Hooghly is passing at a distance of 4.6 km from the Project site. It has been reported that no water body exists at the project site. The topography of the area is flat and reported to lie between 22°5'20.89"N Latitude and 88°6'34.75"E Longitude, at an elevation of 3.66 m AMSL. The ground water table is reported 3 m below the land surface during the post-monsoon season and 4 m below the land surface during the pre-monsoon season. No national park/wildlife sanctuary/biosphere reserve/tiger reserve/elephant reserve etc. are reported to be located in the core and buffer zone of the project. The area also does not report to form corridor for Schedule-I fauna.

The targeted production capacity of the Ferro-alloy plant is Ferro-Manganese – 38,156 TPA or Silico Manganese – 27,109 TPA or Ferro Silicon–10,421 TPA. The Manganese ore for the plant

would be procured from (Mines in Orissa/M.P./Imported). The ore transportation will be done through rail and road.

The water requirement of the project is estimated as 456 m<sup>3</sup>/day, which will be obtained from the Haldia Development Authority (HDA). The power requirement of the project is estimated as 12.5 MW, which will be sourced from Captive Power Plant of the company, operating in the adjacent land and partly from the supply system of WBSEDCL.

Ambient air quality monitoring has been carried out at 8 locations during 10<sup>th</sup> April, 2016 – 9<sup>th</sup> July, 2016 and the data submitted indicated: PM<sub>10</sub> (48 µg/m<sup>3</sup> to 116 µg/m<sup>3</sup>), PM<sub>2.5</sub> (18 µg/m<sup>3</sup> to 50 µg/m<sup>3</sup>), SO<sub>2</sub> (5 µg/m<sup>3</sup> to 22 µg/m<sup>3</sup>) and NO<sub>x</sub> (18 µg/m<sup>3</sup> to 52 µg/m<sup>3</sup>). The results of the modeling study indicates that the maximum increase of GLC for the proposed project is 2.6 µg/m<sup>3</sup> with respect to the PM which will occur at a distance of 0.3 km in WSW direction w.r.t. the ARP.

It has been reported that there are 4,30,230 people in the study area of the proposed project. As the land is already acquired, the question of rehabilitation and resettlement is not an issue for the proposed project.

It has been reported that a total of 38,160 tons/year of Ferro-Manganese slag and 18,446 tons/year of Silico-Manganese slag will be generated due to the project. Ferro-Manganese slag will be used in Silico Manganese manufacturing and Silico-Manganese slag will be used for road construction / land filling. It has been envisaged that an area of 0.425 ha will be used for green belt development around the project site to attenuate the noise levels and trap the dust generated due to the project development activities.

The Public hearing of the project was held on 20<sup>th</sup> December, 2016. commitments regarding air pollution control and development activities in the locality, maximum local employment generation, implementation of prevailing minimum wage rate for workers, protection of occupational health and safety of workers, infrastructure development of the locality such as road network, supply of drinking water, installation of street lights to the local villages.

The capital cost of the project is Rs. 50 Crores and the capital cost for environmental protection measures is proposed as Rs. 4.32 Crores. The annual recurring cost towards the environmental protection measures is proposed as Rs. 26.4 Lakhs.

The company proposes to invest on the Enterprise Social Commitment (ESC) activities. For this purpose, the company has allocated Rs. 125 Lakhs, which is 2.5% of the total project cost (s. 50 Crores). This fund shall be utilized over a period of 5 years. Company has identified certain areas, to be considered for implementing the ESC activities in the context of the local scenario of the area:

Sl. No.	Activity	YEARWISE INVESTMENT (Rs. IN LAKHS)					TOTAL INVESTMENT (Rs. IN LAKHS)
		1 <sup>st</sup> Yr.	2 <sup>nd</sup> Yr.	3 <sup>rd</sup> Yr.	4 <sup>th</sup> Yr.	5 <sup>th</sup> Yr.	
1.	Drinking Water	2.0	2.0	2.0	2.0	2.0	10.0

	Infrastructure (Tubewell in nearby villages – 10nos. @ Rs. 1.0 Lakhs)						
2.	Development of Community Hall – 4 nos.	7.5	7.5	7.5	7.5	-	30.0
3.	Local Village Pond up gradation -5 ponds	4.0	4.0	4.0	4.0	4.0	20.0
4.	Street Lighting (solar) provision at suitable public places – 50 nos.	5.0	5.0	5.0	5.0	5.0	25.0
5.	Financial Support to the Local School for extension of building /class room	6.0	6.0	6.0	6.0	-	24.0
6.	Scholarship for BPL category students	1.2	1.2	1.2	1.2	1.2	6.0
7.	Construction of Charitable Dispensary -1 No.	5.0	5.0	-	-	-	10.0
Total		30.7	30.7	25.7	25.7	12.2	125.0

Based on the presentation made and discussions held, the Committee recommended the project for environment clearance subject to stipulation of the following specific conditions and any other mitigation measures, as prescribed by the Ministry for environmental protection:

- i. The project proponent should install 24x7 air monitoring devices to monitor air emission, as provided by CPCB and submit report to Ministry and its Regional Office.
- ii. Bag filters to be installed to reduce the emission of Particulate Matter (PM). PM emission should not exceed 100 mg/m<sup>3</sup>. Gaseous emission levels including secondary fugitive emissions from all the sources shall be controlled within the permissible limits which have been most recently prescribed by the Ministry and regularly monitored. Guidelines/Code of Practice issued by the CPCB should also be followed.
- iii. Pre-placement medical examination and periodical medical examination of the workers engaged in the project shall be carried out and records maintained. For the purpose, schedule of health examination of the workers should be drawn and followed accordingly.
- iv. Neurological Evaluation of workers exposed to Manganese should be monitored annually and the report should be submitted to the Ministry of Environment, Forest and Climate Change and its Regional Office.
- v. Measures shall be taken to reduce PM levels in the ambient air. Stack of adequate height & diameter with continuous stack monitoring facilities for all the stacks should be provided. In addition, sufficient air pollution control devices viz. bag house, bag filters etc. should be provided.
- vi. Dust extraction system comprising of pulse jet type bag filter, centrifugal fan and motor, duct work including suction hoods, duct supports, stack, duct hopper, rotary air lock valves etc. should be installed to control the primary and secondary emission.

- vii. Water sprinkling arrangements as well as dry fog system to control fugitive emission shall be put up. Water sprinkling should be carried out at the raw material stockyard to control fugitive dust emissions.
- viii. Efforts should be made to use maximum water from the rain water harvesting sources. If needed, capacity of the reservoir shall be enhanced to meet the maximum water requirement. Only balance water requirement shall be met from other sources. Use of air cooled condensers shall be explored and closed circuit cooling system shall be provided to reduce water consumption. Water requirement should be modified accordingly.
- ix. 10-15 m wide green belt should be developed all along the boundary of the plant and in all 33% of the area should be developed green by planting native and broad leaved species in consultation with local DFO and local communities as per the CPCB guidelines. The entire plantation work should be completed in 3 years.
- x. All the ferro alloy slag shall be used in the preparation of building materials.
- xi. The Company shall submit within three months their policy towards Corporate Environment Responsibility which shall inter-alia address (i) Standard operating process/procedure to bring into focus any infringement/deviation/ violation of environmental or forest norms/conditions, (ii) Hierarchical system or Administrative order of the Company to deal with environmental issues and ensuring compliance to the environmental clearance conditions and (iii) System of reporting of non-compliance/violation environmental norms to the Board of Directors of the company and/or stakeholders or shareholders.
- xii. An amount equal to Rs. 125 Lakhs, which is 2.5% of the total project cost (Rs. 50 Crores) shall be earmarked towards the Enterprise Social Commitment based on issues raised during the Public Hearing and needs of local people. Item-wise detailed plan with time bound action plan would be prepared as indicated by the project proponent and this plan shall be implemented. Action taken report in this regard shall be submitted to the Ministry's Regional Office.
- xiii. The project proponent shall provide for solar light system for all common areas, street lights, villages, parking around project area and maintain the same regularly.
- xiv. The project proponent shall fully provide for LED lights in their offices and residential areas.
- xv. Provision shall be made for the housing of construction labour within the site with all necessary infrastructure and facilities such as fuel for cooking, mobile toilets, mobile STP, Safe drinking water, medical health care, crèche etc. The housing may be in the form of temporary structures to be removed after the completion of the project.

**15.3.2** Expansion of Sponge Iron Plant from 195 TPD to 395 TPD and installation of Billet Manufacturing Unit (600 TPD), Rolling Unit 600 TPD along with Captive Power

Plant (18 MW) located at Village Mahuda, Po-Rukni, West Bengal by **M/s. Bravo Sponge Iron Pvt. Ltd.**- J-11011/758/2009-IA.II(I). (Prposal No. IA/WB/IND/32308/2015 date of Submission 30<sup>th</sup> December, 2016.) [11:30 am to 12:30 pm]

The proposal for expansion of sponge iron plant was initially received in the Ministry for obtaining Terms of Reference (TOR) as per EIA Notification, 2006. The project was appraised by the Expert Appraisal Committee (Industry) [EAC(I)] during its meeting and prescribed TORs to the project for undertaking detailed EIA study for the purpose of obtaining environmental clearance. Accordingly, the Ministry of Environment, Forest and Climate Change had prescribed TORs to the project dated 3.12.2015. Based on the TORs prescribed to the project, the project proponent submitted an application for environmental clearance to the Ministry online on 30.12.2016.

The project of M/s Bravo Sponge Iron Pvt. Ltd located in village Mahuda, Tehsil-Raghunathpur, District-Purulia is for setting up expansion of its existing project from 0.062 million ton per annum sponge Iron to production of 0.19 million tons of TMT rods per annum(million TPA). The entire land of 16.30 ha has been acquired for the project is. No forest land is involved. No river passes through the project area. No water body exist around the project and modification/diversion in the existing natural drainage pattern at any stage has not been proposed.

The topography of the area is gentle sloping with isolated hillocks highest contour 205m reported to lie between 23° 32' 54.05"N to 23° 33' 00.02"N latitude and 86° 32'55.42"E to 86° 32'57.44"E longitude in survey of India topo sheet no F45C10 at an elevation of 194m AMSL. The ground water table reported to range between 2.5 and 5.5m below the land surface during post-monsoon season and 4.5 and 11.5m below the land surface during the pre-monsoon season. No national park, no wild life sanctuary, no biosphere reserve, no tiger reserve nor elephant reserve etc. are reported to be located in the core and buffer zone of the project. The area also does not report to form corridor for schedule-I fauna.

The targeted production capacity of TMT rods is 0.19 million TPA. The Iron ore for the plant would be procured from Kalinga Mining Corporation(mine owner & exporter)Joruri, Keonjhar, Odisha and Non-coking coal to be imported from Saraogi PTE Ltd., Singapore. The ore transportation will be done through rail, ship and road fully covered.

The water requirement of the project is estimated as 1,18,105m<sup>3</sup>/day out of which makeup water requirement will be 1119.04 m<sup>3</sup>/day which will be obtained from Mautore Dam near Cheliyama through DVC. Treated water to recycle will be 1,17,082.88, wayer water generated will be 47.768. The power requirement of the project is estimated as 30 MW, out of which 18 MW is own generation and 12 MW will be obtained from DVC.

Ambient air quality monitoring has been carried out at 8 locations during December 2015 to February 2016. And data submitted indicated PM10 (44.3 pg/m<sup>3</sup> to 83.5 pg/m<sup>3</sup>), PM2.5 (26.6 pg/m<sup>3</sup> to 42.7 pg/m<sup>3</sup>), SO<sub>2</sub> (11.6 to 13.2 pg/m<sup>3</sup>), NO<sub>x</sub> (11.4 to 19.3 pg/m<sup>3</sup>). It has been reported that there is no settlement in the core zone and no R&R is involved. SO<sub>2</sub> content of flue gas coming out of AFBC power plant is estimated to be 10.82gm/s which is to be reduced to minimum by lime scrubbing of flue gas with lime. Lime will form Gypsum sludge when combined SO<sub>2</sub>. Gypsum shall be filtered, dried and sold as byproduct.

It has been reported that a total char of 18,900 TPA from DRI kilns will be used to generate power through FBC, 52,920 TPA fly ash will be supplied to brick manufacturers for which agreement has been made and part will be supplied to cement manufacturers. 23,320 TPA. If slag being equivalent to river sand can be used in construction work or filled up low land. Land acquired at Alkusha and Dhulabad can be used to dump waste if so required. 3.4 ha of land at Alkusha & 0.28 ha of land at Dhulabad under Para PS of Purulia Dist has been muted in the name of Bhalotia Metcoke Pvt Ltd under Mutation case no 50/2011 and 38/2011 by office of the block land and land reforms officer, Para, Purulia dt 08.02.2012 and an agreement has been made b/w M/s Bhalotia Metcoke Pvt Ltd and M/s Bravo Sponge Iron Pvt Ltd for BSIPL to dump solid waste generated from their Integrated Steel Plant at Alkusha and Dhulabad.

The public hearing of the project was held on 4th November 2016. The issues raised in Public hearing inter-alia include disposal of char from sponge iron plant, to develop infrastructure of local school, measures to be taken to see that local agricultural land are not affected due to the expansion project, training to local youth and subsequently priority to local employment, extension of health care facility to all possible villages and more over ensuring safety of work men of project.

The capital cost of the project is Rs 156.34 Crores and capital cost for environmental protection measures is Rs 625 Lakhs. The annual recurring cost towards the environmental protection measures is proposed as Rs 64 Lakhs. The proponent has mentioned that there is no court case to the project or related activity.

The company proposes to invest on the Enterprise Social Commitment (ESC) activities. For this purpose, the company has allocated Rs. 400.87 Lakhs. This fund shall be utilized over a period of 5 years. Company has identified following areas, to be considered for implementing the ESC activities in the context of the local scenario of the area:

<b>S. No</b>	<b>ESC Activities</b>	<b>Budget allocation in Lakh</b>	<b>Period of completion after CTE</b>
1	Building a community centre having indoor game facilities, library, furniture and utensils for social functions which will also act as emergency shelter for needy people	170.50	2yrs
2	Installing solar lighting system by the side of road passing through slum and connecting project site to state high way.	35.27	1yr
3	Supply of modular latrines to poor needy persons as a major step towards sanitation	15.10	1yr
4	Vocational training program for local youth in various trades so as to make them fit for employment and there by improve economy.	100.00	1yr & 4months
5	Organizing sports meet and cultural activities in the brand name of TMT rods	35.00	6months

6	Development of social forestry by supply of seedlings free of cost to villagers and beautification of locality by creating parks	45.00	3yrs
	Total	400.87	

Based on the presentation made and discussions held, the Committee recommended the project for environment clearance subject to stipulation of the following specific conditions and any other mitigation measures, as prescribed by the Ministry for environmental protection:

- i. The project proponent shall install 24x7 air monitoring devices to monitor air emissions, as provided by the CPCB and submit report to Ministry and its Regional Office.
- ii. In-plant control measures like bag filters, de-dusting and dust suppression system shall be provided to control fugitive emissions from all the vulnerable sources. Dust extraction and suppression system shall be provided at all the transfer points, coal handling plant etc. Water sprinkling system shall be provided to control secondary fugitive dust emissions generated during screening, loading, unloading, handling and storage of raw materials etc.
- iii. The COD level in the effluent should be maintained at the prescribed standard and the STP effluent is to be recycled within the premises.
- iv. No effluent shall be discharged outside the plant premises and 'zero' discharge shall be adopted.
- v. Continuous stack monitoring facilities for all the stacks shall be provided and sufficient air pollution control devices viz. Electrostatic precipitator (ESP), bag house, bag filters etc. shall be provided to keep the emission levels below 50 mg/Nm<sup>3</sup> and installing energy efficient technology.
- vi. Efforts shall further be made to use maximum water from the rain water harvesting sources. Use of air cooled condensers shall be explored and closed circuit cooling system shall be provided to reduce water consumption and water requirement shall be modified accordingly. All the effluent should be treated and used for ash handling, dust suppression and green belt development. ETP sludge should be disposed off scientifically.
- vii. All internal roads shall be black topped. The roads shall be regularly cleaned with mechanical sweepers. A 3-tier avenue plantation using native species shall be developed along the roads. Facilities for parking of trucks carrying raw coal from the linked coalmines shall be created within the Unit.
- viii. The National Ambient Air Quality Emission Standards issued by the Ministry vide G.S.R. No. 826(E) dated 16<sup>th</sup> November, 2009 shall be followed.
- ix. Gaseous emission levels including secondary fugitive emissions from all the sources shall be controlled within the latest permissible limits issued by the Ministry vide G.S.R. 414(E) dated 30<sup>th</sup> May, 2008 and regularly monitored. Guidelines / Code of Practice issued by the CPCB shall be followed.



- x. Regular monitoring of influent and effluent, surface, sub-surface and ground water shall be ensured and treated wastewater shall meet the norms prescribed by the State Pollution Control Board or described under the Environment (Protection) Act, 1986 whichever are more stringent.
- xi. Proper handling, storage, utilization and disposal of all the solid waste shall be ensured and regular report regarding toxic metal content in the waste material and its composition, end use of solid/hazardous waste shall be submitted to the Ministry's Regional Office, SPCB and CPCB.
- xii. A time bound action plan shall be submitted to reduce solid waste generated due to the project related activity, its proper utilization and disposal.
- xiii. Proper utilization of fly ash shall be ensured as per Fly Ash Notification, 1999 and subsequent amendment in 2003 and 2009. All the fly ash shall be provided to cement and brick manufacturers for further utilization and Memorandum of Understanding shall be submitted to the Ministry's Regional Office.
- xiv. A Risk and Disaster Management Plan shall be prepared and a copy submitted to the Ministry's Regional Office, SPCB and CPCB within 3 months of issue of environment clearance letter.
- xv. 10-15 m wide green belt should be developed all along the boundary of the plant and in all 33% of the area should be developed green by planting native and broad leaved species in consultation with local DFO and local communities as per the CPCB guidelines. The complete plantation should be completed in 3 years.
- xvi. All the commitments made to the public during Public Hearing/public consultation meeting shall be satisfactorily implemented and adequate budget provision shall be made accordingly.
- xvii. An amount equal to Rs. 400.87 Lakhs, shall be earmarked towards the Enterprise Social Commitment based on Public Hearing issues, locals need and item-wise details along with time bound action plan as indicated by the project proponent shall be implemented. Action taken report in this regard shall be submitted to the Ministry's Regional Office.
- xviii. The Company shall submit within three months their policy towards Corporate Environment Responsibility which shall inter-alia address (i) Standard operating process/procedure to bring into focus any infringement/deviation/ violation of environmental or forest norms/conditions, (ii) Hierarchical system or Administrative order of the Company to deal with environmental issues and ensuring compliance to the environmental clearance conditions and (iii) System of reporting of non-compliance/violation environmental norms to the Board of Directors of the company and/or stakeholders or shareholders.
- xix. The project proponent shall provide for solar light system for all common areas, street lights, villages, parking around project area and maintain the same regularly.

- xx. The project proponent shall provide for LED lights in their offices and residential areas.
- xxi. Provision shall be made for the housing of construction labour within the site with all necessary infrastructure and facilities such as fuel for cooking, mobile toilets, mobile STP, Safe drinking water, medical health care, crèche etc. The housing may be in the form of temporary structures to be removed after the completion of the project.

#### 15.4 FURTHER CONSIDERATION

**15.4.1** Expansion of Integrated Steel Plant (1 MTPA to 1.3 MTPA) of **M/s JSW Steel Ltd.**, located at Mecheri, Taluk Mettur, District Salem, Tamil Nadu [No.J-11011/281/2006-IA.II(I)] Prposal No. IA/TN/IND/26508/2015 date of Submission 28<sup>th</sup> October, 2016.) [12:30 pm to 1:30 pm]

The proposed expansion of 1 to 1.3 MTPA Special Alloy Steel of M/s. JSW Salem Works was initially received in the Ministry 16.01.2015 for obtaining Terms of Reference (TOR) as per EIA Notification, 2006. The project was appraised by the Expert Appraisal Committee (Industry) [EAC(I)] during its meeting held on 11.02.2015 and prescribed TORs to the project for undertaking detailed EIA study for the purpose of obtaining environmental clearance. Accordingly, the Ministry of Environment and Forests had prescribed TORs to the project on 12.06.2015. Based on the TORs prescribed to the project, the project proponent submitted an application for environmental clearance to the Ministry online on 28.10.2016.

The project is located at M. Kallipatti and Pottaneri Village, Mettur Tehsil, Salem District, Tamil Nadu. Following table presents the existing and the proposed capacities:

Sl. No.	Manufacturing Facilities	Existing Capacity	Proposed Expansion	Total Capacity after Expansion
1	Coke Oven Plant – 1 (Non-Recovery type)	0.5	-	0.5
2	Sinter plant – 1 (20 square meter)	0.175	-	0
3	Sinter plant – 2 (90 square meter)	1.06	-	1.06
4	Sinter plant – 3 (90 square meter)	-	1.06	1.06
5	Blast Furnace – 1 (402 to 650 cubic meter)	0.367	0.316	0.683
6	Blast Furnace – 2 (550 to 650 cubic meter)	0.578	0.105	0.683
7	Energy Optimising Furnace - 1 (45 to 65 T)	0.41	0.23	0.64
8	Energy Optimising Furnace - 2 (45 T)	0.62	-	0.62
9	Ladle Furnace – 1 (45 to 65 T)	45 T/heat	20 T/heat	65 T/heat
10	Ladle Furnace – 2 (65 T)	65 T/heat	-	65 T/heat

11	Ladle Furnace – 3 (65 T)	65 T/heat	-	65 T/heat
12	Ladle Furnace – 4 (65 T)	65 T/heat	-	65 T/heat
13	Continuous Casting Machine - 1	0.35	-	0.35
14	Continuous Casting Machine - 2	0.5	-	0.5
15	Continuous Casting Machine - 3	-	0.45	0.45
16	Bar & Rod Mill augmentation	0.4	0.08	0.48
17	Blooming Mill augmentation	0.36	0.12	0.48
18	Pickling and Annealing steel unit	-	0.06	0.06
19	Peeled and ground	-	0.04	0.04
20	Air separation plant – 1 (150 T/day)	150 T/day	-	150 T/day
21	Air separation plant – 2 (390 T/day)	390 T/day	-	390 T/day
22	Air separation plant – 3 (250 T/day)	-	250 T/day	250 T/day
23	Captive power plant – 1	7 MW	-	7 MW
24	Captive power plant – 2	2 X 30 MW	-	2 X 30 MW
25	Captive power plant – 3	-	30 MW	30 MW

The total available plant site is 237.28 ha and township is 30.80 ha. The land required for the proposed expansion project is 11.74 ha, out of total plant site and township area, scrub land is 37.89 ha, vegetation area is 47.83 ha, open scrub is 27.19, built-up area is 69.27 ha, water bodies like rainwater harvesting pond, guard pond etc is 5.34 ha, open land is 62.50 ha, stock yard is 3.82 ha, roads 9.57 ha and rocky terrain 4.711 ha. No forest land is involved. The entire land has been already acquired for the project. No river/stream passes through the project area. It has been reported that no water body exist around the project and no modification/diversion in the existing natural drainage pattern at any stage has not been proposed.

The topography of the area is slightly undulating and reported to lie between 11<sup>o</sup> 48' 16" to 11<sup>o</sup> 49' 2" N latitude and 77<sup>o</sup> 0' 54" to 77<sup>o</sup> 55' 43" E longitude in Survey of India topo sheet No. 58 E/13, 58 E/14, 58 I/1 and 58 I/2, at an elevation of 339 to 368m AMSL. The ground water table is reported to range between 1.0 to 31.23m below the land surface during March to May 2015. Based on hydro-geological studies, it has been reported that the radius of influence of pumped out water will be 60m. Further, the stage of groundwater development is reported to be 0% and 100% in core and buffer zone respectively and thereby these are designated as critically exploited areas.

No national park/wildlife sanctuary/biosphere reserve/tiger reserve/elephant reserve etc. are reported to be located in the core and buffer zone of the project. The area also does not report to form corridor for Schedule-I fauna. The raw material requirement for the project are listed below:

<b>Sl. NO.</b>	<b>Raw material</b>	<b>Present Quantity MMT/Year</b>	<b>Post Exp. Quantity MMT/Year</b>	<b>Source</b>
1	Iron ore fines	0.845	1.47	Indigenous/Imported
2	Iron ore pellets	NA	0.5	Indigenous source
3	Lump ore	0.806	0.705	Indigenous/Imported
4	Coking coal	0.585	0.585	Imported
5	Non coking coal for COP	0.147	0.147	Imported
6	Non coking coal for PCI	0.147	0.215	Imported
7	Power plant coal	0.172	0.172	Indigenous/Imported
8	Coke breeze for SP	0.023	0.023	In house
9	Limestone	0.08	0.135	Imported/indigenous
10	Dolomite	0.091	0.147	Indigenous
11	Quartzite	0.030	0.039	Indigenous
12	Dunite	0.030	0.039	Indigenous
13	Lime powder	0.0585	0.0945	Imported/indigenous
14	Mill scale	0.097	0.158	Indigenous
15	Purchase coke	0	0.156	Imported
16	Anthracite	0.039	0.095	Imported

The proposed expansion of 0.3 MTPA Integrated Steel Plant (ISP) has been contemplated to adopt conventional BF (Blast Furnace) - EOF (Energy Optimizing Furnace) - CC (Continuous Casting) and RM (Rolling Mill) route. In expansion, additional 1 X 30 MW using the WHR boilers of COP and BF gas is planned.

The targeted production capacity of the proposed expansion is 1.3 million TPA. The ore for the plant would be procured from imported. The ore transportation will be done through rail.

An agreement exists between PWD and JSW to utilize 5 MGD of raw water from downstream of river Cauvery. The present requirement is about 3.17 MGD of raw water, which is met from the intake well located at downstream of Mettur dam which meets the 1 MTPA capacity of steel

plant and captive power plant of 67 MW. Total fresh water requirement after expansion will be to the tune of about 4.4 MGD.

The average power demand of the plant after expansion is estimated to be about 90 MW. It is expected that the power to the tune of 97 MW will be generated from the steel plant facilities after expansion. It is proposed to meet the entire energy requirement from the captive sources taking the support of state electricity grid for stability. Provision will be made to sell out the surplus power if any, through the grid.

Ambient air quality monitoring has been carried out at 8 locations during March to May 2015 and the data submitted indicated: PM<sub>10</sub> (23.28 µg/m<sup>3</sup> to 76.0 µg/m<sup>3</sup>), PM<sub>2.5</sub> (8.90 to 34.83 µg/m<sup>3</sup>), SO<sub>2</sub> (1.21 to 9.50 µg/m<sup>3</sup>) and NO<sub>x</sub> (11.41 to 60.76 µg/m<sup>3</sup>). The results of the modeling study indicates that the maximum increase of GLC for the proposed expansion project is 83.0 µg/m<sup>3</sup> with respect to the PM<sub>10</sub>, 10.6 µg/m<sup>3</sup> with respect to the SO<sub>2</sub>, 20.5 µg/m<sup>3</sup> with respect to the NO<sub>x</sub>. There is no habitant in the core zone of the project. No R&R is involved.

It has been reported that a total of 80 tonnes/day of scrap waste will be generated due to the expansion project from CCM and rolling mill, and the entire waste will be dumped in the earmarked dump yard. It has been already developed that an area of 78.9 ha as green belt around the project site to attenuate the noise levels and trap the dust generated due to the project development activities.

The Public hearing for the project was held on 12.08.2016 for production of 1.0 to 1.3 million TPA of Special Alloy Steels, under the existing premises.

The capital cost of the project is Rs. 1025 Crores and the capital cost for environmental protection measures is proposed as Rs. 50.5 Crores. The annual recurring cost towards the environmental protection measures is proposed as Rs. 8.05 Crores. The proponent has mentioned that there is no court case to the project or related activity.

Based on the presentation made and discussions held, the Committee desired additional information on the following for further consideration of the proposal:

- i. A list of raw material along with the source of the raw material and tie-up with the supplier agency should be provided.
- ii. A detailed design of the ETP to cater to the design load should be submitted along with the layout plan. The ETP should be designed to cater Cynide, phenol and other standards as prescribed in the notification. The treated water can only be recycled.
- iii. Revised table on the cost component for environmental pollution control measures to be submitted
- iv. Safety devise details to be submitted
- v. Analyse the data collected for occupational health and submit.
- vi. Cost breakup for the ESC component along with the time line to implement the project should be submitted. The ESC component should be based on the issues raised in the public hearing.

**15.4.2** Expansion of Integrated Steel Plant Project located at Village Palgam, Kaushalgarh, Chowka-Kandra Road, P.O. Ghatdulmi, Tehsil Chandil, District SaraikelaKharsawan, Jharkhand by **M/s Divine Alloys & Power Co. Limited**- Environmental Clearance

regarding. [No.J-11011/492/2010-IA.II(I)] Prposal No. IA/JH/IND/57731/2010 date of Submission 22<sup>nd</sup> July, 2016.) 10<sup>th</sup> **EAC Aug. -2016 (ADS reply 06.01.2017)**

The proposal was earlier considered during the 10<sup>th</sup> meeting of Expert Appraisal Committee (EAC) (Industry) held on 29<sup>th</sup> – 31<sup>st</sup> August, 2016, when the Committee desired additional information on various issues.

The proponent submitted the requisite information to the Ministry. The Committee deliberated on the additional information as presented by the project proponent. The Committee verified the details submitted by the project proponent and satisfied with the submissions made by the project proponent.

Based on the presentation made and discussions held, the Committee recommended the project for environment clearance subject to stipulation of the following specific conditions and any other mitigative measures, as prescribed by the Ministry for environmental protection:

- i. The project proponent should install 24x7 air and water monitoring devices to monitor air emission and effluent discharge, as provided by CPCB and submit report to Ministry and its Regional Office.
- ii. The Phenol and Cyanide should be recovered/treated before the waste water is recycled/reused.
- iii. The ETP for coke oven by-product should be designed to meet EPA notified standards especially the cyanide and phenol.
- iv. Coke oven plant should meet visible emission standards notified by the MoEFCC.
- v. Coal and coke fines shall be recycled and reused in the process. The breeze coke and dust from the air pollution control system shall be reused in sinter plant. The waste oil shall be properly disposed of as per the Hazardous Waste (Management, Handling, Handling and Transboundary Movement) Rules, 2016.
- vi. The wastewater from coal washery shall be treated in thickener and used in the process. Acidic and Alkaline effluent from demineralization (DM) plant shall be neutralized and reused in the plant through ash pond for dust control and gardening. All the wastewater from process and domestic sources shall be treated and recycled and reused. No wastewater shall be discharged outside the premises and 'Zero' effluent discharge shall be ensured.
- vii. Char, coal washery rejects and middling shall be used in AFBC based power plant. All the blast furnace (BF) slag shall be granulated and provided to cement manufacturers for further utilization. All the other solid wastes including broken refractory mass shall be properly disposed off in environment friendly manner within the premises or any other designated area after prior approval from the SPCB. Oily waste shall be provided to authorized recyclers / reprocessors.
- viii. On-line ambient air quality monitoring and continuous stack monitoring facilities for all the stacks shall be provided and sufficient air pollution control devices viz. Electrostatic

precipitator (ESP), and bag filters etc. shall be provided to keep the emission levels below 50 mg/Nm<sup>3</sup> by installing energy efficient technology.

- ix. In-plant control measures like bag filters, de-dusting and dust suppression system shall be provided to control fugitive emissions from all the vulnerable sources. Dust extraction and suppression system shall be provided at all the transfer points. Bag filters shall be provided to hoods and dust collectors. Water sprinkling system shall be provided to control secondary fugitive dust emissions generated during screening, loading, unloading, handling and storage of raw materials etc.
- x. The Standards issued by the Ministry vide G.S.R. 277(E) dated 31<sup>st</sup> March, 2012 shall be strictly adhered to and the Standards prescribed for the Coke Oven plant shall be monitored and a report should be submitted along with the six monthly compliance report
- xi. The National Ambient Air Quality Emission Standards issued by the Ministry vide G.S.R. No. 826(E) dated 16<sup>th</sup> November, 2009 shall be followed.
- xii. Multi stage scrubber, cyclone and bag filters etc. to control particulate emissions within the prescribed limits from coke oven shall be provided. Carbon mono-oxide (CO) shall also be monitored along with other parameters and standards notified under Environment (Protection) Act shall be followed. The reports shall be submitted to the Ministry's Regional Office, CPCB and SPCB.
- xiii. The emission standards specified in the Environmental (Protection) Amendment Rules, 2015 issued by vide SO -3305 (E) dated 7th December, 2015 for the Thermal Power Plant shall be strictly adhered to.
- xiv. The National Ambient Air Quality Emission Standards issued by the Ministry vide G.S.R. No. 826(E) dated 16th November, 2009 shall be followed.
- xv. On-line ambient air quality monitoring and continuous stack monitoring facilities for all the stacks shall be provided and sufficient air pollution control devices viz. Electrostatic precipitator (ESP), and bag filters etc. shall be provided.
- xvi. A statement on carbon budgeting including the quantum of equivalent CO<sub>2</sub> being emitted by the existing plant operations, the amount of carbon sequestered annually by the existing green belt and the proposed green belt and the quantum of equivalent CO<sub>2</sub> that will be emitted due to the proposed expansion shall be prepared by the project proponent and submitted to the Ministry and the Regional Office of the Ministry. This shall be prepared every year by the project proponent. The first such budget shall be prepared within a period of 6 months and subsequently it should be prepared every year.
- xvii. For the employees working in high temperature zones falling in the plant operation areas, the total shift duration would be 4 hrs or less per day where the temperature is more than 50oC. Moreover, the jobs of these employees will be alternated in such a way that no employee is subjected to working in high temperature area for more than 1 hr continuously. Such employees would be invariably provided with proper protective

equipments, garments and gears such as head gear, clothing, gloves, eye protection etc. There should also be an arrangement for sufficient drinking water at site to prevent dehydration etc

- xviii. Gaseous emission levels including secondary fugitive emissions from all the sources shall be controlled within the latest permissible limits issued by the Ministry vide G.S.R. 414(E) dated 30th May, 2008 (Sponge Iron Plant) and regularly monitored. Guidelines / Code of Practice issued by the CPCB shall be followed.
- xix. Efforts shall further be made to use maximum water from the rain water harvesting sources. If needed, capacity of the reservoir shall be enhanced to meet the maximum water requirement.
- xx. Risk and Disaster Management Plan along with the mitigation measures shall be prepared and a copy submitted to the Ministry's Regional Office, SPCB and CPCB within 3 months of issue of environment clearance letter.
- xxi. Coal and coke fines shall be recycled and reused in the process. The breeze coke and dust from the air pollution control system shall be reused in sinter plant. The waste oil shall be properly disposed of as per the Hazardous Waste (Management, Handling, Handling and Transboundary Movement) Rules, 2008.
- xxii. Green belt shall be developed in 33 % of plant area. Selection of plant species shall be as per the CPCB guidelines and preference will have to be given to local tree species.
- xxiii. All the recommendations made in the Charter on Corporate Responsibility for Environment Protection (CREP) for the Steel Plants and Coke Oven Plants shall be implemented.
- xxiv. At least 2.5% of the total cost of the project shall be earmarked towards the Enterprise Social Commitment based on Public Hearing issues, locals need and item-wise details along with time bound action plan shall be prepared and submitted to the Ministry's Regional Office. Implementation of such program shall be ensured by constituting a Committee comprising of the proponent, representatives of village Panchayat and District Administration. Action taken report in this regard shall be submitted to the Ministry's Regional Office.
- xxv. All the commitments made to the public during the Public Hearing / Public Consultation meeting shall be satisfactorily implemented and a separate budget for implementing the same shall be allocated and information submitted to the Ministry's Regional Office at Bhubaneswar.
- xxvi. Provision shall be made for the housing of construction labour within the site with all necessary infrastructure and facilities such as fuel for cooking, mobile toilets, mobile STP, Safe drinking water, medical health care, crèche etc. The housing may be in the form of temporary structures to be removed after the completion of the project.



- 15.4.3** Proposed expansion of existing 2X100 TPD Sponge Iron Plant by installing 08 MW CPP based on 2X11 TPH Boiler (Waste Gases) and 30 TPH AFBC Boiler (Firing Mixed Fuel) located at Tuidungri, Chowka Panchayat, Chandil Tehsil, Sarakela Kharsawan District, Jharkhand of **M/s Emaar Alloys Pvt Ltd.** J-11011/243/2015-IA.II(I).

The proposal was earlier included in the agenda of 1<sup>st</sup> meeting of Expert Appraisal Committee (Industry-I) held on 18<sup>th</sup> – 20<sup>th</sup> November, 2015 and 5<sup>th</sup> meeting of Expert Appraisal Committee (Industry-I) held on 30<sup>th</sup> – 31<sup>st</sup> March, 2016. Consideration of the proposal was deferred in both the accusation as the PP did not attend the meetings. However, in the mean time system generated automatic ToRs were issued to the PP from the website of the Ministry on 03.12.2015. It has been decided that since site specific ToRs were not been prescribed by the Expert Appraisal Committee (Industry-I); therefore automatic ToRs are incomplete. Therefore a communication was sent to the PP to confirm, whether the PP is interested to take up the project.

Based on the response received from the PP, the proposal is again placed in the agenda of the EAC meeting to prescribe specific ToRs, if any.

M/s. Emaar Alloys Private Limited has proposed for expansion of existing 2 X 100 TPD Sponge Iron Plant by installing 08 MW Captive Power Plant based on 2 X 11 TPH Boiler(Waste Gases) and 30 TPH AFBC Boiler(Firing Mixed Fuel) At- Chowka, Saraikela Kharsawan district, Jharkhand. The land area acquired for the proposed expansion is 19 Acre (7.69 Ha) out of which 6.30 Acre (2.55 Ha) land is dedicated for green belt development. Total project cost is approx 36.25 Crore rupees. Proposed employment generation after proposed expansion is will be 220 including direct employment and indirect employment.

The proposed capacity for different products for new site area as below:

SI. No.	Units		Product	Configuration	Capacity
	Existing	Expansion			
1	Sponge Iron Plant	--	DRI	2 X 100 TPD	66,000 T/Annum
2		08 MW Captive Power plant based on WHRB and AFBC Boiler	8 MW (4 MW WHRB + 4 MW AFBC)	2 X 11 TPH WHRB Boiler and 1 X 30 TPH AFBC Boiler	(467.92 Lakh Units/Annum)

No additional power is required for the proposed expansion. Only construction power of not more than 0.5 MVA will be met from existing 11 KV HT line of existing plant.

#### Raw Material Requirement

SI No.	Description	Quantity In TPA	Source	Mode of Transport
<b>A. Sponge Iron Plant( Existing)</b>				
1	Iron Ore	1,05,600	From Nearby mines	Road/Rail
2	Coal	85,800	From CCL/ Imported from Indonesia	Road/Rail

3	Dolomite	1980	Chhattisgarh	Road/Rail
<b>B. Captive Power Plant</b>				
1	Coal( E & F Grade)	15,250 MT	From CCL	Road/Rail
2	Dolo Char	15,250 MT	In- house	--
3	Coal Fines	7,500 MT	From CCL	Road/Rail

Water Consumption after proposed expansion will be 180 m<sup>3</sup>/Day and waste water generation will be 18 m<sup>3</sup>/Day. Domestic waste water will be treated in Neutralizing pit and reused for greenbelt.

After detailed deliberations, the Committee recommended that the TOR be issued and prescribed following specific TORs, in addition to the standard TOR, for undertaking detailed EIA-EMP study in addition to the generic TOR enclosed at **Annexure I read with additional TORs at Annexure-2:**

- i. Public Hearing to be conducted by the Jharkhand Pollution Control Board.
- ii. The issues raised during public hearing and commitment of the project proponent on the same along with time bound action plan to implement the commitment and financial allocation thereto should be clearly provided.
- iii. The project proponent should carry out social impact assessment of the project as per the Office Memorandum No. J-11013/25/2014-IA.I dated 11.08.2014 issued by the Ministry regarding guidelines on Environment Sustainability and CSR related issues. The social impact assessment study so carried out should form part of EIA and EMP report.

**15.4.4** Expansion of manufacturing of MS Expansion of Manufacturing of M. S. Billets of **M/s A One Steel and Alloy Pvt Ltd.**, located at Gowribidanur, Tehsil & District Chikballapura, Karnataka. J-11011/244/2016[Proposal No. IA/KA/IND/60536/2016 Date of Submission 25<sup>th</sup> November, 2016]

The proposal was earlier placed in the agenda of the 14<sup>th</sup> EAC meeting, however, the PP did not attend the meeting.

The proposal was considered by the Expert Appraisal Committee(Industry-I) to determine Terms of Reference (TORs) for undertaking detailed EIA and EMP study for the purpose of obtaining Environment Clearance in accordance with the provisions of EIA Notification, 2006, as amended. For this purpose, the project proponent submitted information in prescribed format (Form-I) along with the pre-feasibility report. The proposed project activity is listed at S.No. 3(a), under category 'A' of the Schedule of EIA Notification, 2006 and appraised at the Central level.

M/s. A One Steel and Alloys Pvt. Ltd. proposes expansion in existing manufacturing unit for all types of Mild steel billets and re-rolling of MS steel, Alloy steel, TMT Bars, Square bars & structural steel. It is proposed to increase production capacity of the plant for all types of Mild steel billets and re-rolling of MS steel, Alloy steel, TMT Bars, Square bars & structural steel based on induction furnace technology.

The proposed unit is located at Plot no. IP-62 & IP-63, KIADB Industrial Area, Village Kudumalkunte, Taluka Gowribidanur, District Chikballapura, Karnataka. The land area

acquired for the steel plant is 32,941.41 sq.m. out of which 800 sq.m. land is utilised for green belt development and it will be further increased upto 10,870 sq.m. Total project cost is approximate 20 Crore rupees. Proposed employment generation from proposed project will be 22 direct employment and around 10 indirect employment.

The proposed capacity for different products for new site area as below:

No.	Name of the unit	Existing Configuration (Nos. of unit with production capacity)	Proposed Configuration (Nos. of unit with production capacity)	Final Configuration (Nos. of unit with production capacity)
1.	Induction Furnace	2 No. X 8 Ton capacity Per Heat (Per Cycle) (Total Capacity 16 Ton Per Heat)	Existing replaced with 2 No. X 12 Ton capacity Per Heat (Per Cycle) (Total Capacity 24 ton per heat) and addition of 2 No. X 12 Ton capacity Per Heat (Per Cycle) (Total Capacity 24 ton per heat)	4 No. X 12 Ton capacity Per Heat (Per Cycle) (Total Capacity 48 Ton Per Heat)
2.	Billet Caster	1 No. 4/7 caster with 2 No. Strand	1 Nos. of Strand	1 No. 4/7 caster with 3 No. Strand
3.	Re rolling mill	600 TPD	-	600 TPD
4.	D. G. Set for lighting and temporary power supply	125 KVA and 250 KVA	500 KVA	125 KVA, 250 KVA and 500 KVA

**Note:** Each Induction Furnace Having 2 No. of Crucible out of that 1 no. is stand by. Timing Per Heat (Per cycle) is approx. 2 Hrs and No. of Heat Per Furnace Per Day is 11-12

The additional electricity load of 15.5 MW will be procured from BESCO. Company has also proposed to install one additional 500 KVA DG Set.

Proposed additional raw material and fuel requirement for the project are Sponge Iron-1,71,600 TPA, Iron Scrap-46,200 TPA and additives alloy-2,200 TPA total around 2,20,000 TPA and fuel HSD 90 lit/hr respectively. Requirement would be fulfilled by Local manufacturer/suppliers as well as HSD Fuel consumption will be mainly for D. G. Set.

Additional water consumption for the proposed project will be 36 KLD and no waste water generation from the proposed project. Domestic waste water will be treated in Sewage Treatment Plant of capacity 10 KLD. No industrial waste water will be generated from the proposed project.

After detailed deliberations, the Committee recommended that the TOR be issued and prescribed following specific TORs, in addition to the standard TOR, for undertaking detailed EIA-EMP

study in addition to the generic TOR enclosed at **Annexure I read with additional TORs at Annexure-2:**

- i. Public Hearing to be conducted by the Karnataka Pollution Control Board.
- ii. The issues raised during public hearing and commitment of the project proponent on the same along with time bound action plan to implement the commitment and financial allocation thereto should be clearly provided.
- iii. The project proponent should carry out social impact assessment of the project as per the Office Memorandum No. J-11013/25/2014-IA.I dated 11.08.2014 issued by the Ministry regarding guidelines on Environment Sustainability and CSR related issues. The social impact assessment study so carried out should form part of EIA and EMP report.

## **15.5 ANY OTHER ITEM**

**15.5.1** Extension of Validity of Environmental Clearance for Integrated Proposal of Expansion of Cement Plant for Clinker Production 6 to 7.75 MTPA Cement Production 9 MTPA to 11.7 MTPA, Captive Power Plant 79.2 to 84.2 MW (WHRBI & Captive Limestone Mine Limestone Production From 9.0 to 11.3 MTPA Shale Production From 0.5 to 0.66 MTPA of **M/s Vasavadatta Cement Limited** located at Sedam village, Gulbarga District, Karnataka-reg. – J-11011/1044/2007-IA.II(I) (Prposal No. IA/KA/IND/2211/2009 date of Submission 21<sup>st</sup> December, 2016.)

Vasavadatta Cement has proposed for expansion of cement plant along with captive power plant and Captive Limestone Mine at Sedam village, Gulbarga district, Karnataka for which Environmental clearance was granted by the Ministry vide letter No. F.No. J-11011/1044/2007-IA-II (I) dated 20.01.2010. Validity of EC was extended vide letter dated 6<sup>th</sup> August, 2015 up to 20.01.2017. Capital cost of the Project is Rs 800 crores.

CFE for the Integrated Proposal obtained on 04.02.2011 vide letter No. KSPCB/HPI/009/Cement/Vasavadatta/10-11/316.

The project could not be implemented due to sluggish market and financial constraint. So far about Rs 90 crores was spent on the project by implementing the Power plant. The PP explained that the financial position of the company improved and they would like to go ahead with the project and requested for extension of validity of environmental clearance for another 3 years i.e., upto 19.01.2020.

The Committee after detailed deliberations, recommended the proposal for extension of validity of EC for further period upto 19.01.2020.

**15.5.2** Application under clause 7(ii) (a) of EIA Notification 2006 and its further amendment for addition of rolling mill of 0.25 MTPA by the name of **M/s Rashmi metaliks limited** at Village Gokulpur, P.S Shyamraipur, P.O Kharagpur (Local), District Paschim Midnapore, West Bengal.-J-11011/227/2007-IA.II(I) (Prposal No. IA/WB/IND/3509/2007 date of Submission 22<sup>nd</sup> December, 2016.)

The Environmental Clearance for the project of Steel Plant (500000 TPA, MBF, SMS) was accorded by the Ministry vide letter No-J-11011/227/2008.I A II (I) dated 12.06.2008. The plant is located at Village Gokulpur, P.S Shyamraipur, P.O Kharagpur (Local), District Paschim

Mednipur, State West Bengal. Extension of validity for the environmental clearance was accorded by the Ministry up to 11<sup>th</sup>-June- 2018.

Ministry has transferred the environmental clearance for Sponge Iron Plant [6, 00,000 TPA (DRI kiln-10 X100 TPD, 3 X350 TPD)] with A.F.B.C, W.H.R.B based CPP and also upcoming MBF (1 x320 m<sup>2</sup>) to M/s Orissa Metaliks Private Limited vide letter No- J-11011/227/2007-IA II (I) On 6<sup>th</sup>- Jan -2017

PP has proposed to expand their business model by setting up Rolling Mill of 2, 50,000 TPA on 1 acres of land by the name of M/s Rashmi Metaliks Limited, at existing premises at Mouza Khidipur (J.L No. 140) Village Gokulpur, P.O. Shyamraipur, Kharagpur, District- Paschim Mednipur in West Bengal.

It has been mentioned by the PP that the raw material billets for the rolling mill will be sourced from existing SMS plant having 0.378 MTPA production capacity. There will be no change in the pollution load i.e. point/ fugitive source emission because instead of conventional preheating furnace technology the pp has proposed for using 02 Nos. of Induction Heater of 20 T/hr. Billets from existing SMS plant of RML will be heated into the induction heater which will be operated by electricity for bringing it to desire temperature and then directly transferred to the Rolling Mill. The cost of the project is 25 Crores. The electricity required 7.8 MW will be sourced from West Bengal State Electricity Distribution Company Limited (WBSEDCL). The additional water requirement is 70 KLD, which will be sourced from Bore Well. PP mentioned that M/s Rashmi Metaliks have 0.23 MGD water withdrawal permission from SWID. The solid waste (Scraps/ missed roll, end cuts) that is going to be generated will be used in the SMS plant.

PP mentioned that, as per amendment Notification dated 23<sup>rd</sup> November, 2016 the PP do not require separate environmental clearance as the PP is not generating any pollution due to new installation and also there is no increase in the production capacity as the project is only using billets for the rolling mill from existing SMS plant having 0.378 MTPA production capacity.

The Committee, after detailed deliberations, reached the opinion that the PP has to apply directly to the Ministry along with a certificate from the Pollution Control Board as per the amendment Notification. A compliance report from the Regional Office of the Ministry should also be submitted.

**15.5.3** Request for extension of validity of Environment Clearance for our Mini Steel Plant by **M/s Agarwal Induction Furnace Private Limited** located at Village Gollapuram, Hindupur Mandal , District Ananthapur, Andhra Pradesh. – J-11011/221/2009-IA.II(I) (Prposal No. IA/AP/IND/3467/2009 date of Submission 22<sup>nd</sup> December, 2016.)

M/s Agarwal Induction Furnace Pvt. Ltd. has obtained Environmental Clearance vide letter No. F. No. J-11011/221/2009 IA-II (I) dated 27<sup>th</sup> January 2010, 4<sup>th</sup> September 2012 (for name change) & 4<sup>th</sup> June 2015 (extension for 2 years).

Following is the plant configuration for which Environmental Clearance was obtained:

S.No.	UNIT	CAPACITY
1	Sponge iron Kilns	2 x 100 TPD
2	Induction Furnaces	2 x 300 TPD

3	Rolling mill	1 x 500 TPD
4	Power plant	8 MW (WHRB - 4 MW + FBC - 4MW)

Following is implementation status of the project:

S.No.	UNIT	CAPACITY	STATUS OF IMPLEMENTATION
1	Sponge iron Kilns	2 x 100 TPD	Yet to be implemented
2	Induction Furnaces	2 x 300 TPD	1 x 300 TPD Induction Furnace is in operation 1 x 300 TPD Induction Furnace is yet to be implemented
3	Rolling mill	1 x 500 TPD	Yet to be implemented
4	Power plant	8 MW (WHRB - 4 MW + FBC - 4MW)	Yet to be implemented

It has been mentioned by the PP that after obtaining the Environmental Clearance, part of the facilities has been implemented. However the PP could not complete the implementation of the unimplemented portion of the above referred EC due to severe recession in steel sector (sluggish market condition) and fall in cash flow of the company during the past few years.

With the improvement in market condition, the PP mentioned that they may likely to implement the remaining unimplemented portion for which EC has accorded by the Ministry. The PP requested to accord extension of validity of EC for further period upto 26<sup>th</sup> January, 2020.

After detailed deliberations, the Committee recommended the proposal for extension of validity of Environment Clearance granted by the Ministry upto 26<sup>th</sup> January, 2020.

**15.5.4** Amendment in Environment Clearance for expansion of present capacity of 5.0 MTPA cement production to 6.0 MTPA cement production under Clause 7 (ii) of Prior environmental Clearance by **M/s Manikgarh Cement** located at P.O : Gadchandur, Tehsil Korpana, District Chandrapur, Maharashtra.- J-11011/458/2006-IA.II(I) (Prposal No. IA/MH/IND/19591/2008 date of Submission 28<sup>th</sup> December, 2016.)

The Ministry had granted Environment Clearance for the expansion of Cement Plant from 2.0 MTPA to 5.0 MTPA vide F.No. J-11011/458/2006-IA II (I) dated 7<sup>th</sup> Jan 2008.

M/s Manikgarh Cement is proposing an expansion of its combined capacity from 5.0 MTPA to 6.0 MTPA by process optimization and increasing production of blended cement without any Capital Investment. The plant is located at village Gadchandur, Dist Chandrapur, Maharashtra at Latitude 79<sup>0</sup> 09' 15", Longitude 19<sup>0</sup> 40' 45". It is 215 Km from Nagpur, 50 Km from Chandrapur and on state highway No 268.

The present Consent to operate from Maharashtra State Pollution Control Board vide Format 1.0/BO/CAC-Cell/EIC No.-CH-1673-14/CH-1674-14 CAC/ CAC-12547-A dated 14/08/2015 and is valid till 31/10/2017.

The expended capacity will be achieved by process optimization, increasing production of blended cement by increasing running hours in a calendar year. There will not be any additional Capital Investment. The plant is having the sufficient grinding capability to grind 6.0 MTPA from both Lines. The plant is having sufficient packing capability to pack and dispatch 6.0 MTPA from both the Lines. The existing water allotted is 10840 KLD which will be sufficient for the expansion proposal. No extra water is needed. No extra power is required.

After detailed deliberation the Committee advised the PP to submit the following additional information:

- i. Compliance report to be submitted from RO, Nagpur
- ii. Pollution will not increase
- iii. Revised norms are complying

## **15.6 CASE FOR TERMS OF REFERENCE (TOR)**

**15.6.1** SSI unit of cement grinding plant of 20MT/day (0.006 Million tonnes per annum) located at Sy No-46,46/3/3&46/4, Redlakunta Village, Kodad Mandal, Suryapet Dist( part of old Nalgonda dist) , Telangana State by **M/s Sri Lakshmi Venkateswara Industries** F. No-J-11011/---/2017-IA.II(I) (Prposal No. IA/TG/IND/61608/2017 date of Submission 7<sup>th</sup> January, 2017.)

The proposal was considered by the Expert Appraisal Committee to determine Terms of Reference (TORs) for undertaking detailed EIA and EMP study for the purpose of obtaining Environment Clearance in accordance with the provisions of EIA Notification, 2006, as amended. For this purpose, the project proponent submitted information in prescribed format (Form-I) along with the pre-feasibility report. The proposed project activity is listed at S.No. 3(b), under category 'B' of the Schedule of EIA Notification, 2006, however, general condition is applicable due to the location of inter-state boundary at a distance of 1.05km from Andhra Pradesh. Hence the project become category 'A' and appraised at the central level.

M/s Sri Lakshmi Venkateshwara Industries proposes to install a new manufacturing unit for Cement. It is proposed to set up the plant for cement grinding based on ball mill technology. The proposed unit will be located at Redlakunta Village Kodad, Taluka Suryapet District Telangana. The land area acquired for the integrated steel plant is 1.51 Acres out of which 1.1 Acre land will be used for green belt development. Total project cost is approx 1.515 Crore rupees. Proposed employment generation from proposed project will be 5 direct employment and more indirect employment.

Infrastructure required for setting up a Cement Grinding unit of 20 MT/day (0.006 MTPA) with allied facilities. The plant buildings/ structure will include clinker, gypsum storage, cement mill conveyor & feed hopper, ball mill, cement packing empty bag store, truck loading bay, compressor room, laboratory, technical office, general store, workshop & security office.

The electricity load of 99HP / 0.0738 MW will be procured from TSSPDCL. The company has also proposed to install 100KVA DG Set after 1<sup>st</sup> year of commercial production.

Water Consumption for the proposed project will be 2KLD and waste water generation will be 0.4 KLD Domestic waste water will be treated in septic tank followed by soak pit and industrial waste water generated will be treated nil and will be reused whenever they are generated at the time of cleaning.

After detailed deliberations, the Committee recommended that the TOR be issued and prescribed following specific TORs, in addition to the standard TOR, for undertaking detailed EIA-EMP study in addition to the generic TOR enclosed at **Annexure I read with additional TORs at Annexure-2:**

- i. Public Hearing to be conducted by the Telangana Pollution Control Board.
- ii. The issues raised during public hearing and commitment of the project proponent on the same along with time bound action plan to implement the commitment and financial allocation thereto should be clearly provided.
- iii. The project proponent should carry out social impact assessment of the project as per the Office Memorandum No. J-11013/25/2014-IA.I dated 11.08.2014 issued by the Ministry regarding guidelines on Environment Sustainability and CSR related issues. The social impact assessment study so carried out should form part of EIA and EMP report.

## **15.7 ENVIRONMENTAL CLEARANCE (EC)**

15.7.1.1 Third phase expansion of Alumina Refinery (from 2.275 MTPA to 3.275 MTPA), by addition of 5<sup>th</sup> Stream in Alumina Refinery having capacity of 1.0 Million Tonne per Annum and expansion of steam cum co-generation Power Plant (92.5 MW to 111 MW) by adding from 18.5 MW co-generation Power Plant at Damanjodi Village, Koraput CD Block, Koraput district, Odisha by **M/s National Aluminium Company Limited (NALCO)** - J-11011/65/2008-IA.II(I). (Prposal No. IA/OR/IND/30479/2015 date of Submission 27<sup>th</sup> December, 2016.) [10:30 am to 11:30 am]

The proposal of M/s National Aluminium Company Limited (NALCO) was initially received in the Ministry on 29<sup>th</sup> August, 2015 for obtaining Terms of Reference (TOR) as per EIA Notification, 2006. The project was appraised by the Expert Appraisal Committee (Industry-I) during its meeting held on 18<sup>th</sup>-20<sup>th</sup> November, 2015 and prescribed TORs to the project for undertaking detailed EIA study for the purpose of obtaining environmental clearance. Accordingly, the Ministry of Environment and Forests had prescribed TORs letter no. F. No. J-11011/65/2008-IA II (I), to the project on 15<sup>th</sup> January, 2016. Based on the TORs prescribed to the project, the project proponent submitted an application for environmental clearance to the Ministry online on 27<sup>th</sup> December, 2016.

The project of M/s National Aluminium Company Limited (NALCO) (a Navratna PSU under administrative control of Ministry of Mines, Government of India) located in village Damanjodi, Pottangi Tehsil, Semiliguda block, District Koraput, Odisha is for setting up of a new stream (5<sup>th</sup>) to its existing 04 streams of Alumina refinery Plant for production of 1.0 Million Tonne Per Annum (MTPA) of Alumina (Both Hydrate & Calcined).The total alumina production capacity enhancement will be from 2.275 MTPA to 3.275 MTPA, after this proposed expansion. In this proposed expansion, 1 No. of 300 TPH boiler and 1 No. of 18.5 MW Turbo Generator shall also



be added in existing Steam-Cum-Co-Generation Power Plant (SPP). The SPP capacity will be increased from 92.5 MW to 111 MW.

The total land required for the project is 25.09 Hectares, which falls in the existing Alumina Refinery Plant industry premises, on the land already under possession of Nalco. The present land use is basically built-up area for industrial purpose with greenbelt, raw water reservoir and solid waste processing and storage area. No river passes through the project area. It has been reported that no water body exist around the project area and modification / diversion in the existing natural drainage pattern at any stage has not been proposed.

The topography of the area is undulated and reported to lie between 18° 46' 24.4" N to 18° 45' 53.4" N Latitude and 82° 54' 09.1" E to 82° 54' 54.2" E Longitude in Survey of India topo sheet No. 65 J/13, 65 J/14, 65 N/1 and 65 N/2 at an elevation ranging from 900 m to 1,400 m above AMSL. The depth to water level during winter range from 2.35 m to 15.60 m below ground level and the average water level is 7.15 m. The reported depth to water during post-monsoon range from 1.05 m to 9.35 m below ground level and the average water level is 2.89 m. The average fluctuation between pre and post monsoon is estimated to be 4.75 m. The stage of ground water development in the study area is 10.53% and categorized as "Safe". The average stage of ground water development in Koraput, Dasamantapur, Semiliguda, Lakshmipur and Narayanpatana blocks as per CGWB assessment is 14.26% and categorized as "Safe".

No national park, wildlife sanctuary, biosphere reserve, tiger reserve, elephant reserve etc. are reported to be located in the core and buffer zone of the project. The area also does not report to form corridor for Schedule-I fauna. The authenticated list of flora and fauna provided through District Forest Official is reporting presence of schedule-I fauna in the study area i.e. buffer zone.

The targeted production capacity of the proposed 5<sup>th</sup> stream alumina refinery is 1.0 MTPA. The ore for the plant i.e. bauxite, will be sourced from Nalco's own Panchpatmali Mines. The ore transportation will be done through overland conveyor belt from mines to refinery. The water requirement of the project is estimated as 13700 m<sup>3</sup>/day. Source of water for the refinery and power plant will be from upper Kolab reservoir. The power requirement of the project is estimated as 43 MW. The power requirement for alumina refinery plant shall be met from Steam-cum-Cogeneration Power Plant as well as from Nalco Captiva Power Plant at Angul through wheeling arrangement.

Ambient air quality monitoring has been carried out at 8 locations during 1<sup>st</sup> December 2015 to 29<sup>th</sup> February 2016. The study were carried out PM10 (26.3 µg/m<sup>3</sup> to 68.1 µg/m<sup>3</sup>), PM2.5 (13.2 µg/m<sup>3</sup> to 40.1 µg/m<sup>3</sup>), SO<sub>2</sub> (8.2 µg/m<sup>3</sup> to 21.7µg/m<sup>3</sup>) and NO<sub>x</sub> (10.1 µg/m<sup>3</sup> to 33.6 µg/m<sup>3</sup>).The results of modelling study indicates that the maximum increase of GLC for the proposed project is 0.29 µg/m<sup>3</sup> with respect to the PM10, 4.37 µg/m<sup>3</sup> with respect to the SO<sub>2</sub> and 2.70 µg/m<sup>3</sup> with respect to the NO<sub>x</sub>. The project is proposed to be built within existing NALCO premises, which is already under industrial use. There will be no additional land acquisition for this expansion project. No R&R is involved.

The major solid waste from the proposed expansion project will be red mud and fly ash. The red mud will be disposed in the existing specially constructed pond. The fly ash will be collected in dry form in silos and will be utilized to the maximum extent in brick making, cement making, low lying area filling, stone quarry area filling, road embankment, etc. Emergency provision will

be kept for wet disposal of ash (both bottom & fly) in the existing ash pond. The organic portion of solid waste generated in the Sewage Treatment Plant (STP) will be used as manure in greenbelt development. The proposed expansion about 11250 trees will be planted over an area of additional 7.5 ha with a density of 1500 trees/ha to attenuate the noise levels and trap the dust generated due to the project development activities.

The Public hearing of the project was held on 28<sup>th</sup> September 2016 at NALCO HRD Centre auditorium, Damanjodi, Koraput District. The PH proceedings has been forwarded by MS-OSPCB to Ministry on 22/10/2016. The issues raised during public hearing are rehabilitation of affected people, employment, health, education, drinking water facilities, rehabilitation of widows and peripheral development. The detailed action plan against the issues raised in PH is elaborated in EIA report.

The capital cost of the project is Rs 4,357.20 Crores and the capital cost for environmental protection measures is proposed as Rs 235 Crores. The annual recurring cost towards the environmental protection measures is proposed as Rs 4.89 Crores. The break-up of cost against ESC component is indicated in the following table:

BUDGET BREAKUP OF ESC (Enterprise Social Commitment) ACTIVITIES						
Sl.No.	Main Activities	Amount in Crores	Phasing of expenditure year wise			
			2018	2019	2020	2021
1	Education to Children	5.00	0.50	2.00	2.00	0.50
	a. 100 nos. of additional class rooms					
2	Health and family welfare	22.50	2.25	9.00	9.00	2.25
	a. CT Scan machine for district HQ - Koraput					
	b. Ultrasound machine for Borigumha and Pottangi CHC					
	c. 400 nos. of Angnawadi center					
3	Infrastructural facility	79.74	7.97	31.90	31.90	7.97
	a. Construction culverts/bridges : 90 numbers in 83 villages					
	b. Construction of roads : 22 numbers in 22 villages					
	c. Construction of water bodies : 2 numbers at laxmipur					
	d. Construction of multipurpose conference hall at Kundra					
	e. Construction of drainage in Laxmipur Township					
4	Promotion of Sports and Socio-Cultural activities	0.25	0.02	0.10	0.10	0.03
	a. Construction of mini stadium at Narayanpatana					
	b. Construction of Kalayan Mandap/ kalayan Mandap cum multipurpose hall: 10					

	numbers in 10 villages					
5	Women Empowerment	0.30	0.03	0.12	0.12	0.03
	Imparting skill development and financial assistance to tribal women & widows					
6	Aids for differently abled people	0.21	0.02	0.08	0.08	0.03
	Distribution of assistive devices to differently abled persons					
TOTAL		108.00	10.79	43.20	43.20	10.81

Based on the presentation made and discussions held, the Committee recommended the project for Environment Clearance subject to stipulation of the following specific conditions and any other mitigation measures, as prescribed by the Ministry for environmental protection:

- i. The project proponent should install 24x7 air monitoring devices to monitor air emission, as provided by CPCB and submit report to Ministry and its Regional Office.
- ii. Used oil, oil containing sludge and grease, filter and filter material containing oil should not be incinerated in the plant premises and should be sold to the authorized vendors.
- iii. Electrostatic precipitator(s) shall be provided to kiln and boiler stacks to control gaseous emissions within 50 mg/Nm<sup>3</sup>. The height of the stacks shall be as per the CPCB guidelines. Gaseous emissions shall be regularly monitored and records maintained and reports submitted to this Ministry including its Regional Office as part of the compliance report.
- iv. The red mud generated from the project shall be stored in the red mud pond only designed as per the CPCB guidelines with proper leachate collection system and ground water all around the red mud disposal area shall be monitored regularly and report submitted to the Regional Office of the Ministry. Proper care shall be taken to ensure no run off or seepage from the red mud disposal site to natural drainage. Sewage sludge shall be used as manure within the premises.
- v. The leachate collection for the existing and the proposed facility should be properly designed and no leachate should escape either into the ground water or outside the plant premises without treatment.
- vi. The present status of the existing red mud pond should be assessed and its capacity should be evaluated. A new site for red mud pond should be earmarked on the map and should be submitted along with the 6 monthly compliance report once the capacity of the existing red mud pond is exhausted.
- vii. A plan for utilisation of red mud generated shall be implemented. Under the Plan, MOU with shall be signed with potential buyers including cement companies for supply of red mud.
- viii. All the fly ash generated from the Alumina Refinery shall be properly stored in ash storage pond and supplied to cement and brick manufacturers for further utilization. Ash pond created for the existing project shall be used for storage of ash for the expansion project. Ash shall be evacuated through HCSD.

- ix. Green belt shall be developed in 33% area to mitigate the effects of fugitive emissions as per the CPCB guidelines. Plant species from local area shall be selected in consultation with DFO for green belt development.
- x. All the recommendations made in the Charter on Corporate Responsibility for Environment Protection (CREP) for the Aluminium sector shall be strictly implemented.
- xi. The gaseous emissions (PM10, PM2.5, SO2, NOX,) from various process units shall conform to the standards prescribed by the concerned authorities from time to time. The particulate emissions from the plant shall not exceed 50 mg/Nm<sup>3</sup>. At no time the emissions level should go beyond the prescribed standards. In the event of failure of any pollution control system adopted by the unit, the respective unit should not be restarted until the control measures are rectified to achieve the desired efficiency.
- xii. In-plant control measures for checking fugitive emissions from spillage/raw materials handling etc. should be provided and particulate matter from Bauxite transport and crushing shall be provided with highly efficient bag filters and covered conveyers and adequate water sprinkling shall be done.
- xiii. The company shall construct separate RCC drains for carrying storm water inside the plant. Decanted water from red mud pond is collected in the Process Water Lake during the monsoon and the same water recycled back to the process through pumping arrangements.
- xiv. The plant will operate on a zero-discharge concept and all treated water shall be recycled and reused. No effluents shall be discharged outside the premises during the non-monsoon period and during the monsoon period water should be discharged only after proper treatment and meeting the norms of the SPCB/CPCB. There shall be separate drain for storm water/rainwater. The concrete drains shall be de-silted and regular supervision of the areas shall be carried out so that blocking of drains may be avoided for quick discharge of rainwater.
- xv. Provision shall be made for the housing of construction labour within the site with all necessary infrastructure and facilities such as fuel for cooking, mobile toilets, mobile STP, Safe drinking water, medical health care, crèche etc. The housing may be in the form of temporary structures to be removed after the completion of the project.
- xvi. An amount equal to Rs. 108.00 crore, shall be earmarked towards the Enterprise Social Commitment based on Public Hearing issues, locals need and item-wise details along with time bound action plan as indicated by the project proponent shall be implemented. Action taken report in this regard shall be submitted to the Ministry's Regional Office.
- xvii. All the hazardous waste shall be properly disposed of as per the Hazardous Waste (Management, Handling, Handling and Transboundary Movement) Rules, 2016.
- xviii. The water drawl should not exceed the 8.42 MGD for the existing and the expansion project put together.
- xix. Oil water separation system provided for the existing facility and to be provided for the proposed facility should meet the standards stipulated by SPCB/CPCB/MoEFCC.

- xx. All new ash ponds and the red mud ponds should be lined at the bottom with proper drainage and leachate collection facility.
- xxi. The project proponent shall provide for solar light system for all common areas, street lights, villages, parking around project area and maintain the same regularly.
- xxii. The project proponent shall fully provide for LED lights in their offices and residential areas.
- xxiii. Provision shall be made for the housing of construction labour within the site with all necessary infrastructure and facilities such as fuel for cooking, mobile toilets, mobile STP, Safe drinking water, medical health care, crèche etc. The housing may be in the form of temporary structures to be removed after the completion of the project.

## **15.8 FURTHER CONSIDERATION**

**15.8.1** Kraft paper production(150 TPD) using locally available hard wood along with captive power plant(5 MW) by **M/s Rajmax Paper Industries LLP**, located at Village Sundargadh, Taluka Halvad, District Morbi, Gujarat [**J-11011/108/2016-IA.II(I)**]. [12:00 am to 12:30 pm]

The proposal was earlier considered during the 13<sup>th</sup> EAC meeting held on 23<sup>rd</sup> – 24<sup>th</sup> November, 2016. The Committee desired additional information on various issues.

The proponent submitted the requisite information to the Ministry. The Committee deliberated on the additional information as presented by the project proponent. The Committee verified the details submitted by the project proponent and satisfied with the submissions made by the project proponent.

Based on the presentation made and discussions held, the Committee recommended the project for environment clearance subject to stipulation of the following specific conditions and any other mitigation measures, as prescribed by the Ministry for environmental protection:

- i. The project proponent should install 24x7 air and water monitoring devices to monitor air emission and effluent discharge and submit report to Ministry and its Regional Office.
- ii. The project authority shall install multi cyclones, wet scrubbers to the boilers to achieve the particulate emission below 50 mg/Nm<sup>3</sup>. The emissions from chemical recovery section shall be controlled through primary and secondary venturi scrubbers.
- iii. In case of treatment process disturbances/failure of pollution control equipment adopted by the unit, the respective unit shall be shut down and shall not be restarted until the control measures are rectified to achieve the desired efficiency.
- iv. The industry shall ensure the compliance of the standards for discharge of the treated effluent from the unit as stipulated under the EPA rules or SPCB whichever is more stringent. Adequate steps including use of modern RO/UF based technologies shall be used to increase recycling and reduce water consumption.
- v. Ground water quality study in and around the project area shall be conducted every 6 months and report submitted to Ministry's Regional Office, SPCB and CPCB.

- vi. The project authority shall dispose of hazardous waste as per the provision of Hazardous Wastes (Management, Handling and Transboundary Movement) Rules, 2008.
- vii. The company shall develop green belt in 33% of the total land as per the CPCB guidelines to mitigate the effect of fugitive emissions.
- viii. Occupational health surveillance of the workers shall be done on a regular basis and records maintained as per the Factories Act.
- ix. The company shall make the arrangement for protection of possible fire hazards during manufacturing process in material handling.
- x. All the recommendations made in the Charter on Corporate Responsibility for Environment Protection (CREP) for the pulp and paper sector shall be strictly implemented.
- xi. All the commitments made to the public during the Public Hearing/Public Consultation meeting shall be satisfactorily implemented and a separate budget for implementing the same shall be allocated and information submitted to the Ministry's Regional Office.
- xii. Provision shall be made for the housing of construction labour within the site with all necessary infrastructure and facilities such as fuel for cooking, mobile toilets, mobile STP, Safe drinking water, medical health care, crèche etc. The housing may be in the form of temporary structures to be removed after the completion of the project.
- xiii. At least 2.5% of the total cost of the project shall be earmarked towards the Enterprise Social Commitment based on Public Hearing issues, locals need and item-wise details along with time bound action plan shall be prepared and submitted to the Ministry's Regional Office. Implementation of such program shall be ensured by constituting a Committee comprising of the proponent, representatives of village Panchayat and District Administration. Action taken report in this regard shall be submitted to the Ministry's Regional Office.
- xiv. The proponent shall prepare a detailed CSR Plan for every year for the next 5 years for the existing-cum-expansion project, which includes village-wise, sector-wise (Health, Education, Sanitation, Health, Skill Development and infrastructure requirements such as strengthening of village roads, avenue plantation, etc) activities in consultation with the local communities and administration. The CSR Plan will include the amount of 2% retain annual profits as provided for in Clause 135 of the Companies Act, 2013 which provides for 2% of the average net profits of previous 3 years towards CSR activities for life of the project. A separate budget head shall be created and the annual capital and revenue expenditure on various activities of the Plan shall be submitted as part of the Compliance Report to RO. The details of the CSR Plan shall also be uploaded on the company website and shall also be provided in the Annual Report of the company. The plan so prepared shall be based on SMART (Specific, Measurable, Achievable, Relevant and Time bound) concept. The expenditure should be aimed at sustainable development and direct free distribution and temporary relief should not be included.

- xv. Provision shall be made for the housing of construction labour within the site with all necessary infrastructure and facilities such as fuel for cooking, mobile toilets, mobile STP, Safe drinking water, medical health care, crèche etc. The housing may be in the form of temporary structures to be removed after the completion of the project.

**15.8.2** Bangur Cement Unit at capacity of Clinker 3.0 Million TPA (Unit-XI), 23 MW WHRS and Cement 4-4 Million TPA at Village- Bhivgarh, Jawangarh & Ras-II, Tehsil Jaitaran, Dist Pali (Rajasthan) by **M/s Shree Cement Ltd.** [F.No-J-11011/212/2016-IA.II(I)]. Proposal No IA/RJ/IND/58395/2016 Date of Submission 13<sup>th</sup> August, 2016. Considered 10<sup>th</sup> Meeting and 14<sup>th</sup> EAC (absent) [12:30 pm to 1:00 pm]

Consideration of the proposal was deferred as the Project Proponent did not attend the meeting. The proposal may be considered subject to satisfactory explanation of the reasons of absence by the applicant.

**15.8.3** Extension of ToR for Cement Plant of 3500 TPD by **M/s Trumboo Cement Pvt Ltd.** located at Village Khrew, District Pulwama Srinagar, Jammu and Kashmir. **J-11011/349/2009-IA.II (I)**[Proposal No. IA/JK/IND/4412/2009 Date of Submission 5<sup>th</sup> December, 2016] **Considered 13<sup>th</sup> EAC (Absent)** [1:00 pm to 1:30 pm]

Consideration of the proposal was deferred as the Project Proponent did not attend the meeting. The proposal may be considered subject to satisfactory explanation of the reasons of absence by the applicant.

## **15.9 ANY OTHER ITEM**

**15.9.1** Amendment in EC Under Clause 7(ii) for Enhancement of DRI Production 35,000 TPA (From 3,90,000 TPA to 4,25,000 TPA) in the existing facility by **M/s Tata Spogo Iron Ltd.**, located at Village Bileipada, Tehsil Barbil, District Keonjhar, Odisha. - J-11011/16/2004-IA.II(I) (Prposal No. IA/OR/IND/2929/2004 date of Submission 29<sup>th</sup> December, 2016.)

The proposal for enhancement in capacity from 3,90,000 to 4,25,000 TPA of DRI of M/s. Tata Sponge Iron Limited located in Village Bileipada, Tehsil Barbil, District Keonjhar, State Odisha was received in the Ministry on 29.12.2016 for amendment in Environmental clearance as per clause 7(ii) of EIA Notification, 2006.

The project comprises three kilns of 2X 375 TPD and 1 X500 TPD and last environmental clearance was granted vide letter no. J-11011/16/2004-IA.II(I) dated 11.11.2004 for a total capacity of 3,90,000 TPA. A total of 26 MW WHRB based power plant is also in operation. The existing project is in an area of 122.65 ha. Land is already in possession of the company and no R&R is required. An area of 41 ha has been developed as green belt around the project site.

No additional land will be required for the enhancement of capacity. There will be no addition of any plant and machineries. No forestland is involved. No river passes through the project area. No natural water body exists within the project nor any modification/ diversion in the existing natural drainage pattern at any stage has been proposed.

DRI is and shall be produced through direct reduction of iron ore using coal and heat from the waste gases is and shall be used for power generation. Increase in production (from 3.9 to 4.25 lakhs TPA) will be achieved by increasing of feed ore and decreasing of coal inside the rotary kilns.

This will generate about 20% lesser quantity (1,95,500 TPA in place of 2,45,000 TPA) of waste i.e. char, ESP dust, etc. due to decrease in coal consumption. Char is 100% utilised by various consumers such as power generators, briquette makers, etc. for energy recovery. ESP dust is 100% utilized for brick & paver manufacturing, low lying land reclamation, etc. An area of 17.5 ha is earmarked as dump for temporary storage of wastes.

The ore for the plant would be procured from Joda East, Khandband and other iron ore mines. The ore transportation will be done through rail and road. The additional water requirement for the additional capacity shall be approximately 6.2 KLH (150 KLD), which shall be obtained from the existing fresh water allocation of 410 KLH (9840 KLD).

No additional power requirement is anticipated for the enhancement of in production. No incremental increase in emissions is anticipated due to reduction in coal consumption and flue gas volume. Consent to Operate for 3,90,000 TPA has been obtained from the Odisha State Pollution Control Board obtained. No additional capital investment will be incurred for enhancement of production. The recurring cost for environmental protection measures of the existing plant is approximately Rs. 6 crores per year. The proponent has mentioned that there is no court case to the project or related activity.

The Compliance report submitted by the regional office was also discussed during the meeting. It was observed that the RO visit was held on 29.04.2015 and the report was submitted by the RO on 11.05.2015. During the RO visit, there were some non-complying points, which the PP later complied and submitted its report. It was observed that, among the non-complying points, all the conditions were complied except construction of drainage. The PP has submitted an undertaking to complete the work in due course.

After detailed deliberations, the Committee recommended the proposal to increase the production capacity from 3.9 to 4.25 lakhs TPA by increasing the feed ore and decreasing the coal inside the rotary kilns under clause 7(ii) of EIA, Notification, 2006 with the following conditions:

- i. The project proponent should install 24x7 air monitoring devices to monitor air emissions, as provided by the CPCB and submit report to Ministry and its Regional Office.
- ii. All the conditions prescribed in the environmental clearance letter No J-11011/284/2008-IA.II(I) dated 29.01.2008 shall be strictly complied with.

**15.9.2** Proposed expansion of integrated cement project clinker (4.80 MTPA to 7.30 MTPA), Cement (4.85 MTPA to 8.10 MTPA), CPP (70 MW to 125 MW) and WHRS (12 MW to 21 MW) by **M/s Binani Cement Ltd.**, located at Village Amli, Tehsil Pindwara, District Sirohi, Rajasthan. – Extension Validity of ToR, J-11011/59/2010-IA.II(I) (Proposal No. IA/RJ/IND/31724/2013 date of Submission 24<sup>th</sup> December, 2016.)



M/s. Binani Cement Limited is having an existing Integrated Cement Plant with Clinker production capacity of 4.8 MTPA, Cement - 4.85 MTPA and CPP - 70 MW at Village: Pindwara, District: Sirohi (Rajasthan).

The company has proposed for expansion of Integrated Cement Project - Clinker (4.8 to 7.3 MTPA), Cement (4.85 to 8.1 MTPA), CPP (70 to 125 MW) and WHRS (12 to 21 MW) at Village: Amla, Tehsil: Pindwara, District: Sirohi (Rajasthan). Application for the same was submitted to MoEFCC, New Delhi on 20<sup>th</sup> Sept., 2013. First Technical Presentation (for ToR approval) for the same was held before EAC (I) on 18<sup>th</sup> Nov., 2013 and subsequently, ToR was granted by MoEFCC, New Delhi vide letter no. J-11011/59/2010- IA-II (I) dated 14<sup>th</sup> January, 2014. M/s. Binani Cement Limited is now proposing for extension of the validity ToR letter for one year.

PP mentioned that the draft EIA / EMP has been submitted to Rajasthan State Pollution Control Board for Public Hearing on 23.08.2016. Earlier Public hearing scheduled on 5th October 2016 could not be conducted due to downpour, witnessed at that time (highly unpredictable during the period). District Administration postponed the Public Hearing due to disturbance created by heavy rains. Public consultation is yet to be done for preparation of Final EIA / EMP. Since, ToR prescribed for the Cement Plant Expansion was valid for a period of two years, thereby extended by one year vide OM date 8th October 2014 i.e. total three years expired on 15.01.2017. Therefore, pp requested to extend the validity of ToR as per OM dated 07.11.2014.

The Committee after detailed deliberation recommended to extend the validity of ToR for a period of 1 year i.e. up to 13.01.2018.

**15.9.3** Proposed clinkerisation unit of 1.65 MTPA capacity and cement grinding unit (90% PPC & 10% OPC) of 2.3 MTPA capacity of **M/s Magic cement** ltd. located at Village Bansa, Tehsil Huzur, District Rewa, Madhya Pradesh – Extension Validity of ToR, J-11011/313/2013-IA.II(I) (Prposal No. IA/MP/IND/20299/2013 date of Submission 29<sup>th</sup> December, 2016.)

The ToR for the project was granted by the Ministry vide letter No. J-11011/313/2013-IA.II(I) dated 5<sup>th</sup> January, 2014. PP mentioned that the baseline environmental study has been carried out in March, April and May 2014. The draft EIA/EMP report was submitted for the Public Hearing process, however, the public hearing/public consultation could not able to happen.

The PP requested to extend the validity of ToRs for further period of 1 year upto 4<sup>th</sup> January, 2018.

The Committee after detailed deliberation recommended to extend the validity of ToR for a period of 1 year i.e. up to 4<sup>th</sup> January, 2018.

**15.9.4** Proposed 0.70 MTPA Integrated Steel Plant by **M/s Jai Raj Ispat Ltd., (JRIL)** at Orvakal Mega Industrial Hub of APIIC, Government of Andhra Pradesh located at Village Guttapadu, Orvakal Mandal, District Kurnool, Andhra Pradesh- Amendment of ToR J-11011/110/2016-IA.II(I) (Prposal No. IA/AP/IND/52609/2016 date of Submission 13<sup>th</sup> January, 2017.)

The TOR letter for the proposed 0.50 MTPA Integrated Steel Plant was issued by the Ministry on 22<sup>nd</sup> June 2016 by MoEFCC. PP mentioned that based on the discussions with equipment suppliers and market conditions, the PP wishes to increase the installed capacity from 0.50 to 0.70 MTPA Integrated Steel Plant. Following table presents the existing ToR details and the proposed components for which the PP has applied for amendment in the ToR:

<b>Description</b>	<b>TOR Received</b>	<b>Amendment applied for to the TOR</b>
Installed Capacity	0.50 MTPA	0.70 MTPA
Finished Products	TMT Rebars Alloy Steel bars	TMT Rebars, Alloy Steel Bars, Pig Iron, Structural Steel Products

<b>S. No</b>	<b>DESCRIPTION</b>	<b>TOR RECEIVED</b>	<b>AMENDMENT TO TOR RECEIVED</b>
1	Land requirement	400 Acres (Approx.)	400 Acres (Approx.)
2	Water requirement	9600 kld	9600 kld
3	Power Requirement	50.70 MW	63 MW
4	Project cost	1700	1451 (Approx.)
5	Employment Generation	1355	1133

<b>S. No</b>	<b>DESCRIPTION</b>	<b>TOR Received</b>	<b>Amendment to TOR</b>
1	Coke Oven Plant	2,50,000 Tonnes (T) Coke	Removed
2	Sinter Plant	6,17,400 T	7,98,990 T
3	Blast Furnace	4,16,500 T	5,96,750 T
4	Steel Melting Shop	5,13,393 T	5,56,700 T
5	Power Plant (Captive )	27 MW	18 MW
6	Air Separation Plant (Oxygen/Nitrogen/Argon)	87,500 T	87,500 T
7	Lime Calcination Plant	56,100 T Lime	56,000 T Lime

PP has requested for amendment in the Terms of Reference to increase the capacity of the plant from 0.5 MTPA to 0.7 MTPA with the above mentioned revised components.

The committee, after detailed deliberations, recommended the proposal for amendment in the ToRs as mentioned above.

**15.9.5** Expansion of sponge Iron plant (29,700 TPA to 95,700 TPA), semi-Finished Steel Induction Furnace 1,00,000 TPA and Captive Power Plant WHRB (7MW) and CFBB (8MW) by **M/s Mahendra Sponge & Power Ltd (Unit.II)** located at Sarora, Tehsil Tilda, District Raipur, Chhattisgarh-Extension of Validity of EC J-

Environmental Clearance for the project of M/s Mahendra Sponge & Power Limited (Unit # II) was granted by the Ministry vide letter No. J-11011/1154/2007 IA-II (I) dated 27<sup>th</sup> January 2010. Subsequently the EC was transferred from M/s Arsh Iron & Steel Pvt. Ltd to M/s Mahendra Sponge & Power Limited on 30<sup>th</sup> November 2015.

Following is the plant configuration for which Environmental Clearance was obtained:

S.No.	Name of Product	Existing Capacity (TPA)	Proposed Capacity (TPA)	Total Capacity after expansion (TPA)
1	Sponge Iron	29,700 (1 x 90 TPD)	66,000 (2 x 100 TPD)	95,700
2	Mild Steel Ingot & Billets through Induction Furnace 10 X 3	--	1,00,000	1,00,000
3	Captive Power Plant	--	15 MW (7 MW WHRB + 8 MW CFBC)	15 MW (7 MW WHRB + 8 MW CFBC)

Following is implementation status of the project:

S.No.	Name of Product	Existing Capacity (TPA)	Proposed Capacity (TPA)	Total Capacity after expansion (TPA)	Status of Implementation
1	Sponge Iron	29,700 (1 x 90 TPD)	66,000 (2 x 100 TPD)	95,700	1 x 90 TPD & 1 x 100 TPD is in operation 1 x 100 TPD to be implemented
2	Mild Steel Ingot & Billets through Induction Furnace 10 X 3	--	1,00,000	1,00,000	To be implemented
3	Captive Power Plant	--	15 MW (7 MW WHRB + 8 MW CFBC)	15 MW (7 MW WHRB + 8 MW CFBC)	To be implemented

It has been mentioned by the PP that after obtaining the Environmental Clearance, part of the facilities has been implemented. However the PP could not complete the implementation of the

unimplemented portion of the above referred EC due to severe recession in steel sector (sluggish market condition) and fall in cash flow of the company during the past few years.

With the improvement in market condition, the PP mentioned that they may likely to implement the remaining unimplemented portion for which EC has accorded by the Ministry. The PP requested to accord extension of validity of EC for further period upto 26<sup>th</sup> January, 2020.

After detailed deliberation the Committee recommended the proposal for extension of validity of Environment Clearance granted by the Ministry upto 26<sup>th</sup> January, 2020.

**15.9.6** Amedment in EC for construction of raw meal silo in existing Cement Plant premises of **M/s Ultratech cement ltd (unit kotputil cement works)** located at village Mohanpura, Tehsil kotputil, District jajpur, Rajasthan –J-11011/971/2007-IA.II(I) (Prposal No. IA/RJ/IND/61796/2008 date of Submission 16<sup>th</sup> January, 2017.)

The environmental clearance to the project was granted by the Ministry vide letter no. J-11011/301/2005-IA II (I) dated 18.11.2005 for Cement plant (3.0MTPA and 30 MW Captive Power Plant). Further an environmental clearance was granted by the Ministry for the expension project vide letter no. J- 11011/971/2007-IA II (II) dated 27.02.2008 for Cement plant (4.0MTPA and 46 MW Captive Power Plant)

Unit is spread over in area of 1027.73 hectares consisting of plant & colony area of 161.87 hectares and Mines area of 867.564 hectares.

Kotputli is planning to construct 18000 MT capacity Raw Meal Silo as it is unable to utilize 100% capacity of the existing raw meal silo. The existing capacity of the raw meal silo is 36000 MT. It is proposed in the existing plant premises and the plot area is 1257 sq. m. The project cost would be around Rs. 45.00 Crores. The PP has obtained CTE from Rajasthan Pollution Control Board for the same.

It has been mentioned by the PP that no additional land required for proposed raw meal silo construction, no change in original production capacity, no change in fuel, no Change in product mix, no change in raw material, no additional pollution load beyond the earlier approved limit envisaged.

PP mentioned that as per the EIA Notification, 2006, Amendment Notification dated 23.11.2016, since there is no increase in the production capacity of the cement plant and no additional pollution load beyond the earlier approved limit envisaged, construction of the Raw Meal Silo may be exempted from separate Environment Clearance.

The Committee after detained deliberations, reached the opinion that the PP has to apply directly to the Ministry along with a certificate from the State Pollution Control Board as per the amendment Notification. A compliance report from the Regional Office of the Ministry should also be submitted.

## **15.10 CASE FOR TERMS OF REFERENCE (TOR)**

**15.10.1** Integrated cement plant Clinker from 2.4 to 4.5 Million TPA, Cement from 4.0 to 6.0 Million TPA, Captive Power Plant from 2 x22 MW to 2x25 MW, Waste Heat Recovery Power Generation from 20 to 35 MW, 1560 TPD Synthetic Gypsum Plant,

D.G. Sets of 2000KVA and Residential Colony from 400 to 535 households (buildup area 119776 sq meter) located at the same site, Village Benkanhalli, Taluka Sedam, District Gulbarga, Karnataka by M/s Shree Cement Ltd., Unit Karnataka Cement Project. – J-11011/458/2008-IA.II(I) (Prposal No. IA/KA/IND/61470/2017 date of Submission 2nd January, 2017.)

The proposal was considered by the Expert Appraisal Committee to determine Terms of Reference (TORs) for undertaking detailed EIA and EMP study for the purpose of obtaining Environment Clearance in accordance with the provisions of EIA Notification, 2006, as amended. For this purpose, the project proponent submitted information in prescribed format (Form-I) along with the pre-feasibility report. The proposed project activity is listed at S.No. 3(b), under category ‘A’ of the Schedule of EIA Notification, 2006.

Shree Cement Limited (SCL) has obtained Environmental Clearance for Integrated Cement Project - Clinker (2.4 Million TPA), Cement (4.0 Million TPA), Captive Power Plant (44 MW) & Captive Limestone Mine (3.8 MTPA, 551.36 ha) at Villages - Kodla & Benkanhalli, Taluka - Sedam, District - Gulberga (Karnataka) from MoEFCC, New Delhi vide letter no. J-11011/458/2008-IA-II(I) dated 19<sup>th</sup> September, 2012. Last public hearing was held on 02/03/2012.

The company is now proposing expansion of Integrated Cement Plant - Clinker (2.4 to 4.5 Million TPA), Cement (4.0 to 6.0 Million TPA), CPP (2 x 22 MW to 2 x 25 MW), Waste Heat Recovery Power Generation (20 to 35 MW), Residential Colony (400 to 535 households) along with Proposed Synthetic Gypsum Plant (1560 TPD) and D.G. Sets (2000 KVA) within the existing plant premises at Village - Benkanhalli, Taluka - Sedam, District - Gulbarga (Karnataka).

Total plant and colony area is 173.32 ha, out of which, 57.2 ha (i.e. 33% of the total project area) will be developed under greenbelt / plantation. Total cost of the project is Rs. 1800 Crores. The total manpower requirement (operation phase) after the proposed expansion project will be around 498 persons.

The proposed expansion capacities for different products are as below:

S. No.	Units	Existing EC Granted Capacity	Total Capacity after expansion
1.	Clinker (MTPA)	2.4	4.5
2.	Cement (MTPA)	4.0	6.0
3.	Captive Power Plant (MW)	44 (2 x 22)	50 (2 x 25)
4.	WHRB (MW)	20	35
5.	Synthetic Gypsum Unit (TPD)	Nil	1560
6.	D.G. Set (KVA)	Nil	2000
7.	Residential Colony	400 households	535 households

Total power requirement after proposed expansion will be 58.4 MW, which will be sourced from Captive Power Plant, WHRB, Grid and D.G Set (for back - up).

Total water requirement after the proposed expansion will be 2000 KLD; which will be sourced from Ground Water. No industrial wastewater will be generated from the Cement Plant. RO reject from CPP will be used in Synthetic Gypsum Unit, Mill Spray and Ash Quenching. Domestic wastewater from plant & colony will be treated in STP & treated water will be utilized for greenbelt development/ plantation.

After detailed deliberations, the Committee recommended that the TOR be issued and prescribed following specific TORs, in addition to the standard TOR, for undertaking detailed EIA-EMP study in addition to the generic TOR enclosed at **Annexure I read with additional TORs at Annexure-2:**

- i. Public Hearing to be conducted by the Karnataka Pollution Control Board.
- ii. The issues raised during public hearing and commitment of the project proponent on the same along with time bound action plan to implement the commitment and financial allocation thereto should be clearly provided.
- iii. The project proponent should carry out social impact assessment of the project as per the Office Memorandum No. J-11013/25/2014-IA.I dated 11.08.2014 issued by the Ministry regarding guidelines on Environment Sustainability and CSR related issues. The social impact assessment study so carried out should form part of EIA and EMP report.
- iv. Compliance report of earlier ECs should be submitted

## Executive Summary

Executive summary of the report in about 8-10 pages incorporating the following:

- i. Project name and location (Village, Dist, State, Industrial Estate (if applicable))
- ii. Products and capacities. If expansion proposal, then existing products with capacities and reference to earlier EC.
- iii. Requirement of land, raw material, water, power, fuel, with source of supply (Quantitative)
- iv. Process description in brief, specifically indicating the gaseous emission, liquid effluent and solid and hazardous wastes. Materials balance shall be presented.
- v. Measures for mitigating the impact on the environment and mode of discharge or disposal.
- vi. Capital cost of the project, estimated time of completion
- vii. Site selected for the project – Nature of land – Agricultural (single/double crop), barren, Govt/private land, status of its acquisition, nearby (in 2-3 km.) water body, population, within 10km other industries, forest, eco-sensitive zones, accessibility, (note – in case of industrial estate this information may not be necessary)
- viii. Baseline environmental data – air quality, surface and ground water quality, soil characteristic, flora and fauna, socio-economic condition of the nearby population
- ix. Identification of hazards in handling, processing and storage of hazardous material and safety system provided to mitigate the risk.
- x. Likely impact of the project on air, water, land, flora-fauna and nearby population
- xi. Emergency preparedness plan in case of natural or in plant emergencies
- xii. Issues raised during public hearing (if applicable) and response given
- xiii. CSR plan with proposed expenditure.
- xiv. Occupational Health Measures
- xv. Post project monitoring plan

**GENERIC TERMS OF REFERENCE (TOR) IN RESPECT OF INDUSTRY SECTOR**

1. Executive Summary
2. Introduction
  - i. Details of the EIA Consultant including NABET accreditation
  - ii. Information about the project proponent
  - iii. Importance and benefits of the project
3. Project Description
  - i. Cost of project and time of completion.
  - ii. Products with capacities for the proposed project.
  - iii. If expansion project, details of existing products with capacities and whether adequate land is available for expansion, reference of earlier EC if any.
  - iv. List of raw materials required and their source along with mode of transportation.
  - v. Other chemicals and materials required with quantities and storage capacities
  - vi. Details of Emission, effluents, hazardous waste generation and their management.
  - vii. Requirement of water, power, with source of supply, status of approval, water balance diagram, man-power requirement (regular and contract)
  - viii. The project proponent shall furnish the requisite documents from the competent authority in support of drawl of ground water and surface water and supply of electricity.
  - ix. Process description along with major equipments and machineries, process flow sheet (Quantative) from raw material to products to be provided
  - x. Hazard identification and details of proposed safety systems.
  - xi. Expansion/modernization proposals:
    - a. Copy of all the Environmental Clearance(s) including Amendments thereto obtained for the project from MOEF/SEIAA shall be attached as an Annexure. A certified copy of the latest Monitoring Report of the Regional Office of the Ministry of Environment and Forests as per circular dated 30<sup>th</sup> May, 2012 on the status of compliance of conditions stipulated in all the existing environmental clearances including Amendments shall be provided. In addition, status of compliance of Consent to Operate for the ongoing /existing operation of the project from SPCB shall be attached with the EIA-EMP report.
    - b. In case the existing project has not obtained environmental clearance, reasons for not taking EC under the provisions of the EIA Notification 1994 and/or EIA Notification 2006 shall be provided. Copies of Consent to Establish/No Objection Certificate and Consent to Operate (in case of units operating prior to EIA Notification 2006, CTE and CTO of FY 2005-2006) obtained from the SPCB shall be submitted. Further, compliance report to the conditions of consents from the SPCB shall be submitted.
4. Site Details
  - i. Location of the project site covering village, Taluka/Tehsil, District and State, Justification for selecting the site, whether other sites were considered.



- ii. A toposheet of the study area of radius of 10km and site location on 1:50,000/1:25,000 scale on an A3/A2 sheet. (including all eco-sensitive areas and environmentally sensitive places)
- iii. Co-ordinates (lat-long) of all four corners of the site.
- iv. Google map-Earth downloaded of the project site.
- v. Layout maps indicating existing unit as well as proposed unit indicating storage area, plant area, greenbelt area, utilities etc. If located within an Industrial area/Estate/Complex, layout of Industrial Area indicating location of unit within the Industrial area/Estate.
- vi. Photographs of the proposed and existing (if applicable) plant site. If existing, show photographs of plantation/greenbelt, in particular.
- vii. Landuse break-up of total land of the project site (identified and acquired), government/private - agricultural, forest, wasteland, water bodies, settlements, etc shall be included. (not required for industrial area)
- viii. A list of major industries with name and type within study area (10km radius) shall be incorporated. Land use details of the study area
- ix. Geological features and Geo-hydrological status of the study area shall be included.
- x. Details of Drainage of the project upto 5km radius of study area. If the site is within 1 km radius of any major river, peak and lean season river discharge as well as flood occurrence frequency based on peak rainfall data of the past 30 years. Details of Flood Level of the project site and maximum Flood Level of the river shall also be provided. (mega green field projects)
- xi. Status of acquisition of land. If acquisition is not complete, stage of the acquisition process and expected time of complete possession of the land.
- xii. R&R details in respect of land in line with state Government policy

5. **Forest and wildlife related issues (if applicable):**

- i. Permission and approval for the use of forest land (forestry clearance), if any, and recommendations of the State Forest Department. (if applicable).
- ii. Land use map based on High resolution satellite imagery (GPS) of the proposed site delineating the forestland (*in case of projects involving forest land more than 40 ha*).
- iii. Status of Application submitted for obtaining the stage I forestry clearance along with latest status shall be submitted.
- iv. The projects to be located within 10 km of the National Parks, Sanctuaries, Biosphere Reserves, Migratory Corridors of Wild Animals, the project proponent shall submit the map duly authenticated by Chief Wildlife Warden showing these features vis-à-vis the project location and the recommendations or comments of the Chief Wildlife Warden-thereon.
- v. Wildlife Conservation Plan duly authenticated by the Chief Wildlife Warden of the State Government for conservation of Schedule I fauna, if any exists in the study area.
- vi. Copy of application submitted for clearance under the Wildlife (Protection) Act, 1972, to the Standing Committee of the National Board for Wildlife

6. **Environmental Status**

- i. Determination of atmospheric inversion level at the project site and site-specific micro-meteorological data using temperature, relative humidity, hourly wind speed and direction and rainfall.
- ii. AAQ data (except monsoon) at 8 locations for PM10, PM2.5, SO2, NOX, CO and other parameters relevant to the project shall be collected. The monitoring stations shall be based CPCB guidelines and take into account the pre-dominant wind direction, population zone and sensitive receptors including reserved forests.
- iii. Raw data of all AAQ measurement for 12 weeks of all stations as per frequency given in the NAQQM Notification of Nov. 2009 along with – min., max., average and 98% values for each of the AAQ parameters from data of all AAQ stations should be provided as an annexure to the EIA Report.
- iv. Surface water quality of nearby River (60m upstream and downstream) and other surface drains at eight locations as per CPCB/MoEF&CC guidelines.
- v. Whether the site falls near to polluted stretch of river identified by the CPCB/MoEF&CC.
- vi. Ground water monitoring at minimum at 8 locations shall be included.
- vii. Noise levels monitoring at 8 locations within the study area.
- viii. Soil Characteristic as per CPCB guidelines.
- ix. Traffic study of the area, type of vehicles, frequency of vehicles for transportation of materials, additional traffic due to proposed project, parking arrangement etc.
- x. Detailed description of flora and fauna (terrestrial and aquatic) existing in the study area shall be given with special reference to rare, endemic and endangered species. If Schedule-I fauna are found within the study area, a Wildlife Conservation Plan shall be prepared and furnished.
- xi. Socio-economic status of the study area.

## 7. Impact Assessment and Environment Management Plan

- i. Assessment of ground level concentration of pollutants from the stack emission based on site-specific meteorological features. In case the project is located on a hilly terrain, the AQIP Modelling shall be done using inputs of the specific terrain characteristics for determining the potential impacts of the project on the AAQ. Cumulative impact of all sources of emissions (including transportation) on the AAQ of the area shall be well assessed. Details of the model used and the input data used for modelling shall also be provided. The air quality contours shall be plotted on a location map showing the location of project site, habitation nearby, sensitive receptors, if any.
- ii. Water Quality modelling – in case, if the effluent is proposed to be discharged in to the local drain, then Water Quality Modelling study should be conducted for the drain water taking into consideration the upstream and downstream quality of water of the drain.
- iii. Impact of the transport of the raw materials and end products on the surrounding environment shall be assessed and provided. In this regard, options for transport of raw materials and finished products and wastes (large quantities) by rail or rail-cum road transport or conveyor-cum-rail transport shall be examined.
- iv. A note on treatment of wastewater from different plant operations, extent recycled and reused for different purposes shall be included. Complete scheme of effluent treatment. Characteristics of untreated and treated effluent to meet the prescribed standards of discharge under E(P) Rules.

- v. Details of stack emission and action plan for control of emissions to meet standards.
- vi. Measures for fugitive emission control
- vii. Details of hazardous waste generation and their storage, utilization and disposal. Copies of MOU regarding utilization of solid and hazardous waste shall also be included. EMP shall include the concept of waste-minimization, recycle/reuse/recover techniques, Energy conservation, and natural resource conservation.
- viii. Proper utilization of fly ash shall be ensured as per Fly Ash Notification, 2009. A detailed plan of action shall be provided.
- ix. Action plan for the green belt development plan in 33 % area i.e. land with not less than 1,500 trees per ha. Giving details of species, width of plantation, planning schedule etc. shall be included. The green belt shall be around the project boundary and a scheme for greening of the roads used for the project shall also be incorporated.
- x. Action plan for rainwater harvesting measures at plant site shall be submitted to harvest rainwater from the roof tops and storm water drains to recharge the ground water and also to use for the various activities at the project site to conserve fresh water and reduce the water requirement from other sources.
- xi. Total capital cost and recurring cost/annum for environmental pollution control measures shall be included.
- xii. Action plan for post-project environmental monitoring shall be submitted.
- xiii. Onsite and Offsite Disaster (natural and Man-made) Preparedness and Emergency Management Plan including Risk Assessment and damage control. Disaster management plan should be linked with District Disaster Management Plan.

## 8. Occupational health

- i. Details of existing Occupational & Safety Hazards. What are the exposure levels of above mentioned hazards and whether they are within Permissible Exposure level (PEL). If these are not within PEL, what measures the company has adopted to keep them within PEL so that health of the workers can be preserved,
- ii. Details of exposure specific health status evaluation of worker. If the workers' health is being evaluated by pre designed format, chest x rays, Audiometry, Spirometry, Vision testing (Far & Near vision, colour vision and any other ocular defect) ECG, during pre placement and periodical examinations give the details of the same. Details regarding last month analyzed data of abovementioned parameters as per age, sex, duration of exposure and department wise.
- iii. Annual report of health status of workers with special reference to Occupational Health and Safety.
- iv. Plan and fund allocation to ensure the occupational health & safety of all contract and casual workers.

## 9. Corporate Environment Policy

- i. Does the company have a well laid down Environment Policy approved by its Board of Directors? If so, it may be detailed in the EIA report.

- ii. Does the Environment Policy prescribe for standard operating process / procedures to bring into focus any infringement / deviation / violation of the environmental or forest norms / conditions? If so, it may be detailed in the EIA.
  - iii. What is the hierarchical system or Administrative order of the company to deal with the environmental issues and for ensuring compliance with the environmental clearance conditions? Details of this system may be given.
  - iv. Does the company have system of reporting of non compliances / violations of environmental norms to the Board of Directors of the company and / or shareholders or stakeholders at large? This reporting mechanism shall be detailed in the EIA report
10. Details regarding infrastructure facilities such as sanitation, fuel, restroom etc. to be provided to the labour force during construction as well as to the casual workers including truck drivers during operation phase.
  11. Enterprise Social Commitment (ESC)
    - i. Adequate funds (Atleast 2.5 % of the project cost) shall be earmarked towards the Enterprise Social Commitment based on Public Hearing issues and item-wise details along with time bound action plan shall be included. Socio-economic development activities need to be elaborated upon.
  12. Any litigation pending against the project and/or any direction/order passed by any Court of Law against the project, if so, details thereof shall also be included. Has the unit received any notice under the Section 5 of Environment (Protection) Act, 1986 or relevant Sections of Air and Water Acts? If so, details thereof and compliance/ATR to the notice(s) and present status of the case.
  13. 'A tabular chart with index for point wise compliance of above TORs.
  14. The TORs prescribed shall be valid for a period of three years for submission of the EIA-EMP reports along with Public Hearing Proceedings (wherever stipulated).

The following general points shall be noted:

- i. All documents shall be properly indexed, page numbered.
- ii. Period/date of data collection shall be clearly indicated.
- iii. Authenticated English translation of all material in Regional languages shall be provided.
- iv. The letter/application for environmental clearance shall quote the MOEF file No. and also attach a copy of the letter.
- v. The copy of the letter received from the Ministry shall be also attached as an annexure to the final EIA-EMP Report.
- vi. The index of the final EIA-EMP report must indicate the specific chapter and page no. of the EIA-EMP Report
- vii. While preparing the EIA report, the instructions for the proponents and instructions for the consultants issued by MOEF vide O.M. No. J-11013/41/2006-IA.II (I) dated 4<sup>th</sup> August, 2009, which are available on the website of this Ministry shall also be followed.
- viii. The consultants involved in the preparation of EIA-EMP report after accreditation with Quality Council of India (QCI) /National Accreditation Board of Education and Training (NABET) would need to include a certificate in this regard in the EIA-EMP reports prepared by them and data provided by other organization/Laboratories including their

status of approvals etc. Name of the Consultant and the Accreditation details shall be posted on the EIA-EMP Report as well as on the cover of the Hard Copy of the Presentation material for EC presentation.

- ix. TORs' prescribed by the Expert Appraisal Committee (Industry) shall be considered for preparation of EIA-EMP report for the project in addition to all the relevant information as per the 'Generic Structure of EIA' given in Appendix III and IIIA in the EIA Notification, 2006. Where the documents provided are in a language other than English, an English translation shall be provided. The draft EIA-EMP report shall be submitted to the State Pollution Control Board of the concerned State for conduct of Public Hearing. The SPCB shall conduct the Public Hearing/public consultation, district-wise, as per the provisions of EIA notification, 2006. The Public Hearing shall be chaired by an Officer not below the rank of Additional District Magistrate. The issues raised in the Public Hearing and during the consultation process and the commitments made by the project proponent on the same shall be included separately in EIA-EMP Report in a separate chapter and summarised in a tabular chart with financial budget (capital and revenue) along with time-schedule of implementation for complying with the commitments made. The final EIA report shall be submitted to the Ministry for obtaining environmental clearance.

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**ADDITIONAL TORS FOR INTEGRATED STEEL PLANT**

1. Iron ore/coal linkage documents along with the status of environmental clearance of iron ore and coal mines
2. Quantum of production of coal and iron ore from coal & iron ore mines and the projects they cater to. Mode of transportation to the plant and its impact
3. For Large ISPs, a 3-D view i.e. DEM (Digital Elevation Model) for the area in 10 km radius from the proposal site. MRL details of project site and RL of nearby sources of water shall be indicated.
4. Recent land-use map based on satellite imagery. High-resolution satellite image data having 1m-5m spatial resolution like quickbird, Ikonos, IRS P-6 pan sharpened etc. for the 10 Km radius area from proposed site. The same shall be used for land used/land-cover mapping of the area.
5. PM(PM<sub>10</sub> and P<sub>2.5</sub>) present in the ambient air must be analysed for source analysis – natural dust/RSPM generated from plant operations (trace elements) of PM<sub>10</sub> to be carried over.
6. All stock piles will have to be on top of a stable liner to avoid leaching of materials to ground water.
7. Plan for the implementation of the recommendations made for the steel plants in the CREP guidelines.
8. Plan for slag utilization
9. Plan for utilization of energy in off gases (coke oven, blast furnace)
10. System of coke quenching adopted with justification.
11. Post process control system for control of SO<sub>x</sub>
12. Trace metals Mercury, arsenic and fluoride emissions in the raw material.
13. Trace metals in waste material especially slag.
14. Trace metals in water

**ADDITIONAL TORS FOR PELLET PLANT**

1. Iron ore/coal linkage documents along with the status of environmental clearance of iron ore and coal mines
2. Quantum of production of coal and iron ore from coal & iron ore mines and the projects they cater to. Mode of transportation to the plant and its impact
3. Recent land-use map based on satellite imagery. High-resolution satellite image data having 1m-5m spatial resolution like quickbird, Ikonos, IRS P-6 pan sharpened etc. for the 10 Km radius area from proposed site. The same shall be used for land used/land-cover mapping of the area.
4. PM( $PM_{10}$  and  $P_{2.5}$ ) present in the ambient air must be analysed for source analysis – natural dust/RSPM generated from plant operations (trace elements) of  $PM_{10}$  to be carried over.
5. All stock piles will have to be on top of a stable liner to avoid leaching of materials to ground water.
6. Plan for the implementation of the recommendations made for the steel plants in the CREP guidelines.
7. Plan for slag utilization
8. Plan for utilization of energy in off gases (coke oven, blast furnace)
9. System of coke quenching adopted with justification.
10. Trace metals Mercury, arsenic and fluoride emissions in the raw material.
11. Trace metals in waste material especially slag.
12. Trace metals in water

**ADDITIONAL TORs FOR CEMENT INDUSTRY**

1. Limestone and coal linkage documents along with the status of environmental clearance of limestone and coal mines
2. Quantum of production of coal and limestone from coal & limestone mines and the projects they cater to;
3. Present land use shall be prepared based on satellite imagery. High-resolution satellite image data having 1m-5m spatial resolution like quickbird, Ikonos, IRS P-6 pan sharpened etc. for the 10 Km radius area from proposed site. The same shall be used for land used/land-cover mapping of the area.
4. If the raw materials used have trace elements, an environment management plan shall also be included.
5. Plan for the implementation of the recommendations made for the cement plants in the CREP guidelines must be prepared.
6. Energy consumption per ton of clinker and cement grinding
7. Provision of waste heat recovery boiler
8. Arrangement for co-processing of hazardous waste in cement plant.
9. Trace metals in waste material especially slag.



**ADDITIONAL TORs FOR PULP AND PAPER INDUSTRY**

- i. A note on pulp washing system capable of handling wood pulp shall be included.
- ii. Manufacturing process details for the existing and proposed plant shall be included. Chapter on Pulping & Bleaching shall include: no black liquor spillage in the area of pulp mill; no use of elemental chlorine for bleaching in mill; installation of hypo preparation plant; no use of potcher washing and use of counter current or horizontal belt washers. Chapter on Chemical Recovery shall include: no spillage of foam in chemical recovery plant, no discharge of foul condensate generated from MEE directly to ETP; control of suspended particulate matter emissions from the stack of fluidized bed recovery boiler and ESP in lime kiln
- iii. Studies shall be conducted and a chapter shall be included to show that Soda pulping process can be employed for *Eucalyptus/Casuarina* to produce low kappa (bleachable) grade of pulp.
- iv. Commitment that only elemental Chlorine-free technology will be used for the manufacture of paper and existing plant without chemical recovery plant will be closed within 2 years of issue of environment clearance.
- v. A commitment that no extra chlorine basebleaching chemicals (more than being used now) will be employed and AOx will remain within limits as per CREP for used based mills. Plan for reduction of water consumption.

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**LEATHER/SKIN/HIDE PROCESSING INDUSTRY**

1. Justification for engaging a particular type of process (raw hide/skin into semi finishing or finished leather, semi finished leather to finished leather, dry finishing operations, chrome/vegetable tanning, *etc.*).
2. Details regarding complete leather/ skin/ hide processing including the usage of sulfides, nitrogen compounds, chromium or other tanning agents, post-tanning chemicals, biocides, *etc.*, along with the material balance shall be provided.
3. In case of chrome tanning, details of the chrome recovery plant, management of shavings/solid waste including safe disposal.
4. Details on reuse of soak liquor / saline stream from membrane system, if applicable, to the extent possible in pickling activity after required treatment. Also, mention the salt recovery measures.

**COKE OVEN PLANT**

1. Justification for selecting recovery/non-recovery (beehive) type batteries with the proposed unit size.
2. Details of proposed layout clearly demarcating various facilities such as coal storages, coke making, by-product recovery area, *etc* within the plant.
3. Details of coke oven plant (recovery/non-recovery type) including coal handling, coke oven battery operations, coke handling and preparation.
4. Scheme for coal changing, charging emission centre, Coke quenching technology, pushing emission control.
5. Scheme for coke oven effluent treatment plant details including scheme for meeting cyanide standard.

**ASBESTOS MILLING AND ASBESTOS BASED PRODUCTS**

1. Type of the project – new/expansion/modernization
2. Type of fibres used (Asbestos and others) and preference of selection from techno-environmental angle should be furnished
3. As asbestos is used in several products and as the level of precautions differ from milling to usage in cement products, friction products gasketing, textiles and also differ with the process used, it is necessary to give process description and reasons for the choice for selection of process
4. Technology adopted, flow chart, process description and layout marking areas of potential environmental impacts
5. National standards and codes of practice in the use of asbestos particular to the industry should be furnished
6. In case of newly introduced technology, it should include the consequences of any failure of equipment/ technology and the product on environmental status.
7. In case of expansion project asbestos fibre to be measured at slack emission and work zone area, besides base line air quality.
8. In case of green field project asbestos fibre to be measured at ambient air.

**INDUCTION/ARC FURNACES/CUPOLA FURNACES 5TPH OR MORE**

1. Details of proposed layout clearly demarcating various units within the plant.
2. Complete process flow diagram describing each unit, its processes and operations, along with material and energy inputs and outputs (material and energy balance).
3. Details on design and manufacturing process for all the units.
4. Details on environmentally sound technologies for recycling of hazardous materials, as per CPCB Guidelines, may be mentioned in case of handling scrap and other recycled materials.
5. Details on requirement of raw materials, its source and storage at the plant.
6. Details on requirement of energy and water along with its source and authorization from the concerned department. Location of water intake and outfall points (with coordinates).
7. Details on toxic metal content in the waste material and its composition and end use (particularly of slag).
8. Details on toxic content (TCLP), composition and end use of chrome slag. Details on the recovery of the Ferro chrome from the slag and its proper disposal.

**METALLURGICAL INDUSTRY (FERROUS AND NON-FERROUS)**

1. Complete process flow diagram describing each unit, its processes and operations, along with material and energy inputs & outputs (material and energy balance).
2. Emission from sulphuric acid plant and sulphur muck management.
3. Details on installation of Continuous Emission Monitoring System with recording with proper calibration system
4. Details on toxic metals including fluoride emissions
5. Details on stack height.
6. Details on ash disposal and management
7. Complete process flow diagram describing process of lead/zinc/copper/ aluminium, *etc.*
8. Details on smelting, thermal refining, melting, slag fuming, and Waelz kiln operation
9. Details on Holding and de-gassing of molten metal from primary and secondary aluminum, materials pre-treatment, and from melting and smelting of secondary aluminium
10. Details on toxic metal content in the waste material and its composition and end use (particularly of slag).
11. Trace metals in waste material especially slag.
12. Plan for trace metal recovery
13. Trace metals in water

**Air Pollution**

<b>Plant /Unit</b>	<b>Pollutants</b>	<b>Qty generated</b>	<b>Method used to Control/ and specifications/attach Separate Sheet to furnish Details</b>	<b>Number of units planned &amp; Capacity</b>	<b>Budget</b>	<b>Estimated Post Control Qty of Pollutant</b>	
						<b>Per Unit</b>	<b>Per Day</b>

**LIST OF PARTICIPANTS OF EAC (I) IN 15<sup>th</sup> MEETING OF EAC (INDUSTRY-I)**  
**HELD ON 2<sup>ND</sup> – 3<sup>RD</sup> FEBRUARY, 2017**

S.No	Name and Address	Position	Attendance		Signature
1	Dr.Chhavi Nath Pandey, IFS(Retired)	Chairman	P	P	
Members					
2.	Director, Central Pulp and Paper Research Institute	Member	A	A	
3.	Director, Central Leather Research Institute	Member	A	A	
4.	Representative of Indian Meteorological Department	Member	P	P	
5.	Representative of Central Ground Water Board	Member	A	A	
6.	Dr. G. Bhaskar Raju	Member	A	A	
7.	Prof. Naresh Chandra Pant	Member	A	A	
8.	Dr. Jagdish Kishwan, IFS(Retired)	Member	A	A	
9.	Dr.G.V.Subrahmanyam	Member	A	A	
10.	Prof. Arun Pandey	Member	A	A	
11.	Shri Santosh Raghunath Gondhalekar	Member	P	P	
12.	Shri Ashok Upadhyay	Member	P	P	
13.	Shri Vijay Prakash Saha	Member	A	A	
14.	Shri Amardeep Raju, Scientist 'D', MoEFCC	Member Secretary	P	P	

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