

**Ministry of Environment, Forest and Climate Change**  
**Impact Assessment Division**  
**(Industry-I Sector)**

**Summary record of the sixteenth (16<sup>th</sup>) meeting of Re-Constituted Expert Appraisal Committee (REAC) held during 24-25<sup>th</sup> February, 2020 for environment appraisal of Industry-1 sector projects constituted under the provisions of Environment Impact Assessment (EIA) notification, 2006.**

The sixteenth meeting of the Expert Appraisal Committee (EAC) for Industry-1 Sector constituted as per the provisions of the EIA Notification, 2006 for Environment Appraisal of Industry-1 Sector Projects was held during 24-25<sup>th</sup> February, 2020 in the Ministry of Environment, Forest and Climate Change. The list of participants is annexed.

After welcoming the Committee Members, discussion on each of the agenda items was taken up ad-seriatim. The minutes of 15<sup>th</sup> meeting held during 16-17<sup>th</sup> January, 2020 were confirmed by the EAC as already uploaded on PARIVESH.

**24<sup>th</sup> February, 2020**

**VENUE: Conference Hall (TEESTA), Vayu Block, Indira Paryavaran Bhawan, Jor Bagh, New Delhi-110003**

- 16.1 Establishment of Manufacturing of 2 x 100 TPD Sponge Iron (DRI) Plant and 2 x 500 KW/hr Captive Power Generation Plant by **M/s. PVSR Steel and Power Pvt Ltd** located at Sy No. 228/1, 228/2, 228/3 of Halakundi Village, Bellary Taluk, Bellari District, **Karnataka** [Online Proposal No. IA/KA/IND/138176/2020, File No. J-11011/42/2020-IA.II(I)] – **Prescribing of Terms of Reference (ToR)** – regarding.
- 16.1.1 M/s PVSR Steel and Power Pvt Ltd submitted an online application vide proposal no. IA/KA/IND/138176/2020 on 22.01.2020 in the prescribed Form I, Pre-Feasibility Report and other documents to propose TOR's for undertaking detailed EIA study as per the EIA Notification, 2006. The proposed project activity is listed at Sl. No. 3(a) Metallurgical Industries (Ferrous and Non-ferrous) under Category "A" EIA Notification, 2006 and the proposal is appraised at Central Level.
- Details Submitted by the Project Proponent**
- 16.1.2 The Project Proponent has taken over a sick unit having 50 TPD kiln which will be upgraded to 100 TPD with addition of new 100 TPD kiln. Thus it is proposed to establish (2 x 100 TPD) Sponge Iron Manufacturing Unit with 2 x 500 KW/hr Captive Power Generation Plant.
- 16.1.3 The proposed unit will be located in the existing premises at Sy No. 228/1, 228/2, 228/3, Halakundi Village, Ballari Taluk, Ballari District, Karnataka.
- 16.1.4 The land area acquired for the proposed plant is 7.34 ha out of which 1.11ha is plot area, 0.80 ha is sheds & yards, 1.09 ha roads, 1.90 ha is vacant land. Of the total area, 2.44 ha (33 %) land will be used for greenbelt development.
- 16.1.5 No National Park/Wildlife Sanctuary/ Biosphere Reserves/ Tiger/Elephant Reserves, Wildlife Corridors etc. lies within 10 km distance. Bellary Reserve Forest is at a

distance of 1.75 km in East direction and Mincheri Reserve Forest at a distance 3.25 km in South direction. Tungabhadra High level canal flows at a distance of 5.45 km in E direction.

16.1.6 The total project cost is ₹ 37.187 Cr. Total employment will be 70 no's direct and 100 no's indirect employment.

16.1.7 The targeted production capacity of the sponge iron plant is 2 x 100 TPD i.e. 72000 TPA and 1 x 500 KW/hr i.e. 8640 MW/A. The ore for the plant would be procured by road through trucks. The proposed capacity for different products for new site area as below:

Name of Unit	No. of units	Capacity of each unit	Production capacity
Sponge Iron Plant	2	100 TPD	200 TPD
Captive Power Plant	2	500 kW/hr	1000 kW/hr

16.1.8 The electricity load of 750 kVA which will be procured internally from ORC based power plant connected to kilns.

16.1.9 Proposed raw material and fuel requirement for project are iron ore, coal and lime stone. The requirement would be met by importing/indigenous. Fuel consumption will be mainly for captive power generation unit.

16.1.10 Water consumption for the proposed project will be 135 KLD. The process water will be reused back into the process and no wastewater will be generated. Septic tank and soak pit are proposed for domestic wastewater.

16.1.11 There is no court case or violation related to the activity or project.

16.1.12 Name of EIA Consultant: M/s Environmental Health and Safety Consultants Pvt. Ltd, Bangalore, Accredited by QCI – NABET (Sl. No.59, Rev. 83, Jan 20, 2020 – Page No.61)

#### **Observations of the Committee**

16.1.13 The project was not designed with adequate waste heat recovery system for 2x100 TPD DRI kilns for captive power generation. Further, utilisation of dolochar for power generation was not envisaged in the project.

16.1.14 The Project Proponent mentioned that required quantity of water shall be met from the treated sewage water from Bellari Municipal Corporation.

#### **Recommendations of the Committee**

16.1.15 In view of the foregoing, and after detailed deliberations, the Committee recommended the project proposal for prescribing following specific ToRs for undertaking detailed EIA/EMP study in addition to the generic ToRs enclosed at Annexure-1 read with additional ToRs at Annexure-2:

- i. The project shall be designed for 100 % utilisation of dolochar and waste heat recovery, for power generation.
- ii. No ground water abstraction is permitted for industrial usage.
- iii. A detailed rainwater harvesting plan in the plant site shall be furnished in the EIA report based on parameters like rainfall, local geological conditions, run off, percolation etc. Rainwater harvesting plan in the study area shall also be

furnished for use of local community in consultation with local panchayat, irrigation department etc. at identified locations.

- iv. The project shall be designed to meet to limit the particulate emissions from the stacks at less than 30 mg/Nm<sup>3</sup>.
- v. The EIA report shall be furnished with detailed design criteria to modify the 50 TPD kiln to 100 TPD. Operation of 50 TPD kiln shall not allowed.
- vi. Project shall be designed to achieve Zero Liquid Discharge.
- vii. Green Belt Plan in 33 % area of project site shall be furnished in accordance with CPCB guidelines.
- viii. Adoption of fugitive emissions control measures at all loading and unloading operations, transfer points, material storage, transportation, etc; shall be included in the Environmental Management Plan.

16.2 Proposed 2 x 6 MVA Submerged Electric Arc Furnaces (SEAF) unit for manufacturing of SiMn – 21,600 TPA or FeMn – 31,680 TPA or FeSi – 10,800 & FeCr – 21,600 TPA and Manganese Ore Sinter Plant (24,000 TPA) by **M/s. Victoria Ferro Alloys Private Limited** located at Plot No. 256/B & 257/B, APIIC Growth Centre, Bobbili Village & Mandal, Vizianagram District, **Andhra Pradesh** [Online Proposal No.IA/AP/IND/139184/2020, File No. J-11011/43/2020-IA.II(I)] – **Prescribing of Terms of Reference (ToR)** – regarding.

16.2.1 M/s. Victoria Ferro Alloys Private Limited submitted an online application vide proposal no. IA/AP/IND/139184/2020 on 27.01.2020 in the prescribed format along with Form I, pre-feasibility report to propose TOR's for undertaking detailed EIA study as per the EIA Notification, 2006. The proposed project activity is listed at Sl. No. 3(a) Metallurgical Industries (Ferrous and Non-ferrous) under Category "A" EIA Notification, 2006 and the proposal is appraised at Central level.

#### **Details Submitted by the Project Proponent**

16.2.2 The proposed project is a Greenfield Project which is located at Plot No. 256/B & 257/B, APIIC Growth Centre, Bobbili, Bobbili Village & Mandal, Vizianagram District, Andhra Pradesh. The background of the proposal is given below.

- MoEF has accorded Environment Clearance for the Ferro Alloys Unit & Manganese Ore Sinter Plant on 24<sup>th</sup> July 2012.
- Management could not implement the project due to issue in financial assistance from bankers within EC validity.
- Request letter for validity extension of EC was applied on 20<sup>th</sup> November 2019, however MoEF&CC has rejected the proposal, as application was made after more than 90 days from the date of expiry i.e. 23<sup>rd</sup> July 2019
- Now fresh proposal has been submitted to MoEF&CC for grant of EC as per the provisions of EIA notification dated 14-09-2006 and its amendments thereof.
- Present proposal is to take up the project in the same premises for which EC was granted i.e. 4.0 acres at Plot No. 256/B & 257/B, APIIC Growth Centre, Bobbili, Bobbili Village & Mandal, Vizianagram District, Andhra Pradesh.

16.2.3 The Bobbili Industrial Growth Centre is developed by Andhra Pradesh Industrial Infrastructure Corporation Ltd. (APIIC Ltd.) to facilitate Industrial Growth. The Growth Centre occupies in an area of 1149.81 acres of land. 4.0 acres of land was purchased from Andhra Pradesh Industrial Infrastructure Corporation Ltd. (APIIC Ltd.) bearing Plot No.

256/B & 257/B and same is in possession of management. Of the total area, 33 % land is earmarked for greenbelt.

16.2.4 No National Park / Wildlife Sanctuary / Biosphere reserve / Tiger reserve are reported to be located in the study area. Bobbili Protected Forest & Gunikonda Reserve Forest exist within 10 km. radius of the plant site. No Reserve forest exist within 10 km. radius of the plant site. The area also does not report to form corridor for Schedule – I fauna. Un-named dead canal adjacent to the site boundary, Vegavati River at 2.8 kms and few ponds are present within in 10 km. from the boundary of plant site.

16.2.5 Total project cost for proposed project is approx. ₹ 8.33 Cr. Employment generation from proposed project will be for 40 nos. of people through direct employment and 100 nos. of people through indirect employment.

16.2.6 The targeted production capacity of the total plant is 0.032 MTPA. The Mn ore for the plant would be procured from MOIL, Madhya Pradesh or Orissa Mining Corporation (OMC). The ore transportation will be done through by rail & road (through covered trucks). The proposed capacity for different products are as below:

S.No.	Plant Configuration	Production Capacity
1.	Submerged Electric Arc Furnace (SEAF) [2 x 6 MVA]	Silico Manganese (SiMn) – 21,600 TPA or Ferro Manganese (FeMn) – 31,680 TPA or Ferro Silicon (FeSi) – 10,800 TPA or Ferro Chrome (FeCr) – 21,600 TPA
2.	Manganese Ore Sinter Plant	24,000 TPA

16.2.7 The Power required for proposed project will be 14.5 MW and same will be supplied by APIIC Ltd.

16.2.8 Proposed raw material for proposed project are Manganese ore, LAM coke, Quartz, Dolomite, Electrode Paste, Scrap. Requirement would be fulfilled by external purchase.

S.no.	Raw material	Quantity (tpa)	Source	Distance in km (w.r.t plant)	Mode of transport
<b>For Ferro Silicon (10800 TPA)</b>					
1	Quartz	16200	Andhra Pradesh	~100	By Road (Covered trucks)
2	LAM coke	12600	Andhra Pradesh	~ 100	By Road (Covered trucks)
			Imported from Australia, China	~ 130 (from Vizag Port)	From Vizag Port by Road (Covered Trucks)
3	MS Scrap	2820	Andhra Pradesh	~100	By Road (Covered trucks)
4	Electrode paste	240	Chhattisgarh / West Bengal	350 – 600	By Road (Covered trucks)
<b>For Ferro Manganese (31,680 TPA)</b>					

S.no.	Raw material	Quantity (tpa)	Source	Distance in km (w.r.t plant)	Mode of transport
1	Manganese Ore	45600	Orissa Mining Corporation (OMC), MOIL Nagpur Imported from South Africa	~ 500  ~ 130 (from Vizag Port)	By Road (Covered Trucks)  From Vizag Port by Road (Covered Trucks)
2	LAM coke	13200	Andhra Pradesh  Imported from Australia, China	~ 100  ~ 130 (from Vizag Port)	By Road (Covered trucks)  From Vizag Port by Road (Covered Trucks)
3	Dolomite	5400	Andhra Pradesh	~100	By Road (Covered trucks)
4	MS Scrap	4800	Andhra Pradesh	~100	By Road (Covered trucks)
5	Electrode Paste	420	Chhattisgarh / West Bengal	350 - 600	By Road (Covered trucks)
<b>For Silico Manganese (21,600 TPA)</b>					
1	Manganese Ore	32400	Orissa Mining Corporation (OMC), MOIL Nagpur Imported from South Africa	~ 500  ~ 130 (from Vizag Port)	By Road (Covered Trucks)  From Vizag Port by Road (Covered Trucks)
2	LAM coke	1,600	Andhra Pradesh  Imported from Australia, China	~ 100  ~ 130 (from Vizag Port)	By Road (Covered trucks)  From Vizag Port by Road (Covered Trucks)
3	FeMn Slag	10800	In house generation	---	By Conveyers
4	Dolomite	4920			
5	Electrode Paste	420	Chhattisgarh / West Bengal	350 - 600	By Road (Covered trucks)
6	Quartz	5160	Andhra Pradesh	~100	By Road (Covered trucks)
<b>For Ferro Chrome (21,600 TPA)</b>					
1	Chrome ore	37800	Sukinda (Odisha)	~ 300  ~ 130	By Road (Covered Trucks)

S.no.	Raw material	Quantity (tpa)	Source	Distance in km (w.r.t plant)	Mode of transport
			Import (Indonesia)	(from Vizag Port)	From Port by Road (Covered Trucks)
2	LAM coke	13200	Andhra Pradesh Imported from Australia, China	~ 100 ~ 130 (from Vizag Port)	By Road (Covered trucks) From Vizag Port by Road (Covered Trucks)
3	Quartz	5400	Andhra Pradesh	~100	By Road (Covered trucks)
4	MS Scrap	1800	Andhra Pradesh	~100	By Road (Covered trucks)
5	Magnetite / Bauxite	3600	Andhra Pradesh	~100	By Road (Covered trucks)
6	Electrode Paste	360	Chhattisgarh / West Bengal	350 - 600	By Road (Covered trucks)

16.2.9 Water consumption for the proposed project will be 40 KLD which will be supplied by APIIC Ltd. and there will be no wastewater discharge from the proposed project as closed-circuit cooling system will be adopted in Ferro Alloys plant. Domestic waste water will be treated STP.

16.2.10 The proponent has mentioned that there is no court case or violation under EIA Notification to the project or related activity.

#### **Observations of the Committee**

16.2.11 Earlier EC granted in 2012 was not implemented. The water requirement shall be met from supply of APIIC Growth Centre.

#### **Recommendations of the Committee**

16.2.12 After detailed deliberations, the Committee recommended the project proposal for prescribing following specific ToRs for undertaking detailed EIA and EMP study in addition to the generic ToR enclosed at Annexure-1 read with additional ToRs at Annexure-2:

- i. No ground water abstraction is permitted.
- ii. The project shall be designed to limit the particulate emissions from the stacks at less than 30 mg/Nm<sup>3</sup>.
- iii. Project Proponent shall install jigging and briquetting plant to utilise Chrome fines generated in Fe-Cr circuit.
- iv. Fe-Cr slag shall be subjected to TCLP tests and if found having permissible Cr level within acceptable limits, the same could be used for road construction, otherwise it shall be disposed of in TSDF. FeCr slag storage area in the plant shall be concreted to prevent seepage of leachates. An action plan shall be furnished in the EAI report for collection, transportation, treatment and disposal of Cr slag in

compliance with provisions specified in Hazardous and Other Waste (M&TM) Rules, 2016.

- v. Project shall be designed to achieve Zero Liquid Discharge.
- vi. Adoption of fugitive emissions control at all loading and unloading, transfer points, material storage, transportation etc. shall be included in the Environmental Management Plan (EMP).
- vii. Green Belt Development Plan in 33 % area of project site shall be furnished in accordance with CPCB guidelines.
- viii. Besides paving of roads inside the plant, provision of an industrial vacuum cleaner shall also be made for maintaining clean environment in the EMP.
- ix. A detailed rainwater harvesting plan in the plant site shall be furnished in the EIA report based on parameters like rainfall, local geological conditions, run off, percolation etc. Rainwater harvesting plan in the study area shall also be furnished for use of local community in consultation with local panchayat, irrigation department etc. at identified locations.
- x. All roads within the premises will be pucca roads.

16.3 Enhancement of production 1.0 to 2.0 MTPA in Portland Pozzolana Cement grinding unit by **M/s. Emami Cement Limited** located at Kulhariya village, Durgawati Tahasil, Bhabua Kaimur District, **Bihar** [Online Proposal No. IA/BR/IND/139498/2020, File No. J-11011/45/2020-IAII(I)] – **Prescribing of Terms of Reference (ToR)** – regarding.

16.3.1 M/s Emami Cement Ltd submitted online application vide proposal no. J-11011/45/2020-IAII(I) dated 29.01. 2020 in the prescribed format along with Form I, pre-feasibility report to propose TOR's for undertaking detailed EIA study as per the EIA Notification, 2006. The proposed project activity is listed at Sl. No. 3(a) Metallurgical Industries (Ferrous and Non-ferrous) under Category "B" EIA Notification, 2006. However, due to the applicability of general condition i.e., interstate boundary of Bihar and Uttar Pradesh, the project was appraised at the Central level as Category 'A'.

#### **Details Submitted by the Project Proponent**

16.3.2 M/s Emami Cement Ltd. proposes to install an expansion of existing unit i.e. Enhancement of production of 1 MTPA to 2 MTPA in Portland Pozzolana Cement grinding unit. It is proposed to set up the plant for manufacturing of Cement based on grinding technology.

16.3.3 Earlier, environmental clearance was accorded to M/s Eco Cement Limited vide no. J-11011/287/2010-IA.II(I) dated 31.10.2011. After that environmental clearance has been transferred to M/s Emami Cement Ltd. vide letter No. J-11011/287/2010-IA.II(I) dated 04.11.2019. Consent to Operate was accorded by Bihar State pollution Control Board vide lr. no. T-7001-7002 dated 27.12.2017 validity of CTO is up to 31.03.2020.

16.3.4 The proposed unit will be located at Village: Kulhariya, Taluka: Bhabua, District: Kaimur, State- Bihar.

16.3.5 The land area acquired for the proposed plant is 7.87 ha. No forestland involved. The entire land has already been acquired for the project. Of the total area, 2.83 ha. (35.99%) land will be developed as green belt.

- 16.3.6 No National Park/WL etc. are located at a distance of 15 km from the site. No national park/wildlife sanctuary/biosphere reserve/tiger reserve etc. are reported to be located in the study area of the project. The area is not reported to form corridor for Schedule-I fauna.
- 16.3.7 Total project cost is approx. ₹ 343 Cr. Employment will be generated from proposed project for 51 nos. of people through direct employment and 310 nos. of people through indirect employment.
- 16.3.8 The targeted production capacity of the cement is 2 MTPA. The raw material for the plant would be procured from by road & rail. Details as below:-

Clinker	Transported by road	From Rishda plant in West Bengal
Fly Ash	Transported by road	From Hindalco Thermal Power Plant, Renusagar
Gypsum	Transported by rail	From West Bengal/ Odisha Port to Mughalsarai Railway Yard and from Mughalsarai to plant by road

- 16.3.9 The proposed capacity for cement production for expansion is as below:

Name of unit	No. of units	Capacity of each Unit	Production Capacity
Cement Grinding	01	180TPH	2 MTPA Portland Pozzolana Cement
Packer	02	240 TPH	
Truck loaders	08	90 TPH	

- 16.3.10 The electricity load of 11MVA will be procured from Bihar State Electricity Board (BSEB). Company has also proposed to install 01X500 + 01X125 kVA DG Set.
- 16.3.11 The raw material and fuel requirement for proposed project are Clinker, Fly Ash & Gypsum & fuel (HSD). These materials shall be transported by road and rail.
- 16.3.12 Water Consumption for the proposed project will be 14.5 KLD and wastewater generation will be 5.6 KLD. Domestic wastewater will be sent to septic tank and disposed via soak pit and no industrial wastewater will be generated from the process.
- 16.3.13 No court case or violation under EIA Notification to the project or related activity was reported by the Project Proponent.

#### Observations and Recommendations of the Committee

- 16.3.14 After detailed deliberations, the Committee deferred the proposal and sought the following additional information.
- Form-1 is to be revised with all project details.
  - Layout drawing is not to scale. Proper engineering drawing of the project is required to be furnished.
  - Justification for no increase in the raw material storage capacity and retaining the same at the existing capacity of 1.0 MTPA.
- 16.4 Capacity Expansion of Vishakhapatnam Steel Plant from 6.3 MTPA to 7.3 MTPA by revamping and augmentation of existing facilities by **M/s. Rashtriya Ispat Nigam Ltd** located at Gajuwaka, Vishakhapatnam, **Andhra Pradesh** [Online Proposal No. IA/AP/IND/140827/2020, File No. J-11011/196/2005-IAII(I)] – **Amendment in Environmental Clearance** – regarding.



- 16.4.1 **M/s. Rashtriya Ispat Nigam Ltd** submitted an online application vide proposal no. IA/AP/IND/140827/2020 on 06.02.2020 in the prescribed format along with Form 4, pre-feasibility report to propose TOR's for undertaking detailed EIA study as per the EIA Notification, 2006. The proposed project activity is listed at Sl. No. 3(a) Metallurgical Industries (Ferrous and Non-ferrous) under Category "A" EIA Notification, 2006 and the proposal is appraised at Central level.

**Details Submitted by the Project Proponent**

- 16.4.2 RINL-VSP is operating an integrated steel plant with rated capacity of 7.3 MTPA liquid steel as per existing Environmental Clearance (EC) at Gajuwaka, Visakhapatnam district, Andhra Pradesh. RINL-VSP had received EC for increase in Liquid Steel production from 3.5 MTPA to 6.3 MTPA from Ministry of Environment, Forest and Climate Change (MoEFCC) vide their letter no. J-11011/196/2005-IA II (I) dated 11-08-2005. Thereafter, RINL had obtained Environment Clearance for Capacity expansion from 6.3 MTPA to 7.3 MTPA of liquid steel vide MoEFCC's letter no. J-11011/196/2005-IA-II(I) dated 03.06.2019. The EIA-EMP report for Capacity expansion of RINL-VSP from 6.3 MTPA to 7.3 MTPA liquid steel was submitted on 29/01/2019 to MoEFCC, based on which the above referred EC has been granted.
- 16.4.3 Existing EC envisages installation of new COB-5, revamping of Sinter machines 1&2, modernization of BF-1&2, expansion of SMS-2, revamping of LMMM & SBM, WRM 1&2, MSM & STM along with installation of rebar mill in Rolling mills complex, augmentation of Coke oven waste heat recovery & installation of new Solar power plant, installation of new Oxygen plant (BOO basis) and other additional facilitating facilities. Most of these activities have been completed or are at various stages of implementation. All the activities are scheduled to be implemented within the validity period of the existing EC.
- 16.4.4 RINL-VSP is proposing an amendment in existing EC accorded for "Capacity expansion of Visakhapatnam Steel Plant from 6.3 MTPA to 7.3 MTPA liquid steel" vide MoEFCC's letter no. J-11011/196/2005-IA-II(I) dated 03.06.2019 for the following:
- Correction in capacities of some facilities mentioned in the EC letter in line with the capacities of the same facilities considered in the EIA-EMP report for which EC has been accorded (Report no. MEC/11/S2/Q7H4/EIA-EMP/2482/R.1 dtd. Jan.,2019 submitted to MoEFCC on 29/01/2019)
  - Inclusion of facilities as was submitted in the EIA-EMP report for which EC has been accorded (Report no. MEC/11/S2/Q7H4/EIA-EMP/2482/R.1 dtd. Jan.,2019 submitted to MoEFCC on 29/01/2019)
  - Correction with respect to area under RINL's control

*It may kindly be noted that the present amendment proposal seeks amendments only with respect to (i) **Presentation in capacities** & (ii) **Inclusion of some facilities- that have been indicated in EIA report but were not included in the EC accorded** vide MoEFCC's letter no. J-11011/196/2005-IA-II(I) dated 03.06.2019.*

*Thus, the land, water, power, fuel and raw material resources for Visakhapatnam Steel plant at 7.3 MTPA liquid steel production capacity as well as associated pollution load at 7.3 MTPA stage for which EC has already been accorded will not change due to proposed amendment.*

16.4.5 The list of amendments proposed in present proposal is as listed below:

**Corrections requested in Configurations in line with EIA-EMP**

S.No	Production unit	Capacities as indicated in EC letter		Design capacities in line with EIA-EMP <sup>2</sup>		Remarks
		Facilities at 7.3 MTPA stage, MT	Production capacity at 7.3 MTPA stage, MT	Facilities at 7.3 MTPA stage, MT	Design capacity at 7.3 MTPA stage, MT	
1	Coke Ovens and Coal Chemicals	COB-1	0.775	<b>COB-1</b>	<b>0.84</b>	<b>Correction requested in line with EIA-EMP</b>
		COB-2	0.775	<b>COB-2</b>	<b>0.84</b>	
		COB-3	0.775	<b>COB-3</b>	<b>0.84</b>	
		COB-4	0.775	<b>COB-4</b>	<b>0.84</b>	
		COB-5	0.80	<b>COB-5</b>	<b>0.84</b>	
2	Sinter Plant	SP-1	3.64	SP-1	3.64	<b>Correction requested in line with EIA-EMP</b>
		SP-2	3.64	<b>SP-2</b>	<b>3.04</b>	
		SP-3	3.25	<b>SP-3</b>	<b>3.61</b>	
3	Blast Furnace	BF-1	2.5	BF-1	2.5	No change proposed in present amendment proposal
		BF-2	2.5	BF-2	2.5	
		BF-3	2.5	BF-3	2.5	
4	SMS	SMS-1	3.5	SMS-1	3.5	No change proposed in present amendment
		SMS-2	3.8	SMS-2	3.8	
5	Rolling Mills	Wire rod mill	1.81	<b>WRM1&amp;2</b>	<b>1.78</b>	<b>Correction requested in line with EIA-EMP</b>
		Special Bar mill	1.78	<b>LMMM &amp; SBM</b>	<b>1.77</b>	
		Structural mill	1.93	<b>MMSM &amp; STM</b>	<b>1.91</b>	
		Rebar	0.6	Rebar	0.6	No change proposed in present amendment proposal
		Rounds (FWP)	0.08	<b>Semis</b>	<b>0.51</b>	<b>Correction requested in line with EIA-EMP</b>
		Semis	0.58			
6	Captive Power Generation	Coal based	315 MW	Coal based	315 MW	No change proposed in present amendment proposal
		Gas based	120 MW	Gas based	120 MW	
		Waste Gas	69 MW	<b>Coke oven waste heat recovery</b>	<b>43 MW</b>	<b>Correction requested in line with EIA-EMP</b>
		Nedo Sinter	20.6 MW	NEDO Sinter	20.6 MW	No change

S.No	Production unit	Capacities as indicated in EC letter		Design capacities in line with EIA-EMP <sup>2</sup>		Remarks
		Facilities at 7.3 MTPA stage, MT	Production capacity at 7.3 MTPA stage, MT	Facilities at 7.3 MTPA stage, MT	Design capacity at 7.3 MTPA stage, MT	
		cooler		cooler		proposed in present amendment proposal
				BF-TRT	39 MW	To be included in line with EIA-EMP
				Solar power	5 MW	
7	Lime & Dolo Plant	Kiln#1-5 Kiln#6&7	0.425 0.365	Lime &Dolo Plant	2625 TPD	Correction requested in line with EIA-EMP
8	Air Separation Units (ASU)	-	-	Air Separation Units (ASU)	2700 TPD + 1700 TPD	To be included in line with EIA-EMP
9	Additional facilities	-	-	Turbo Blower-5 as Standby blower to TB-4 Kanithi Balancing Reservoir-2 Installation of LPG storage facility Installation of Nitrogen Buffer vessel Guard Pond (with Marine Discharge)		To be included in line with EIA-EMP

**Sources:**

- i. MoEFCC's EC Letter J-11011/196/2005-IA-II(I) dated 03-06-2019
- ii. EIA-EMP Report no. MEC/11/S2/Q7H4/EIA-EMP/2482/R.1 dated Jan-2019, Table 2.1, pg. nos. 12 to 14 of 408 submitted on 29/01/2019

• **Other amendments in EC Letter**

Reference of Approved	Description as per Approved	Description as per Proposal	Remarks
Para 9 (pg. 3 of 12)	The <u>water requirement of the project is estimated as 4,545 m<sup>3</sup>/day</u> which will be obtained from the existing Yeleru Reservoir.	The <u>additional water requirement is 7MGD (total 45MGD at 7.3MTPA)</u> which will be obtained from the existing Yeleru Reservoir.	Correction in line with EIA-EMP
Para 15 (pg. 4 of 12)	The <u>solid waste generated at 6.3 MTPA stage will be approx. 11,700 TPD</u> which	The <u>solid waste generated at 7.3 MTPA stage will be approx. 5.8 MTPA</u> which includes granulated BF slag,	Correction in Solid waste

12)	includes granulated BF slag, SMS slag, mill scales, sludges, ESP/ Bag filter dust etc.	SMS slag, mill scales, sludges, ESP/ Bag filter dust etc.	<b>generation</b>
Para 19 (pg. 4 of 12)	Out of total acquired land of <u>8827 ha (21811.99 Acres)</u> , greenbelt has been done in <u>1969 ha (4866 Acres)</u>	Out of total acquired land of <u>7973.5 ha (19703 acres)</u> , greenbelt has been done in <u>2621.3 ha (6502 acres)</u>	<b>Correction in project area &amp; greenbelt</b>
Para 20 (pg. 4 of 12)	<u>There is no litigation pending against the project and/or land in which the project is proposed to be set up.</u>	<u>A court case has been filed against RINL by APPCB on 09.01.2019 as part of action taken under Section 19 of the Environment (Protection) Act. The case no. is CNR.APVSOB 40272019, SR No.: CC/24/2019 in the Court of VIII Additional Chief Metropolitan Magistrate, Gajuwaka, Visakhapatnam. RINL is yet to receive hearing summons from the Court.</u>	<b>Correction</b>
Para 4 & 19 (pg. 3&4 of 12)	The expansion is within the <u>existing project site of 3240 ha.</u>	The expansion is within the <u>existing project site of 7973.5 ha (19703 acres) including KIOCL pellet plant with 33% greenbelt</u>	<b>Correction in area under RINL control &amp; greenbelt</b>

16.4.6 **Name of the Consultant:** - M/s MECON Limited (Sl. No. 106, List of QCI Accredited Consultant Organizations (Alphabetically) as published on Jan., 2020).

#### **Observations of the Committee**

16.4.7 The Committee observed that the provision of new vertical shaft kilns (2x500 TPD lime/dolo) are proposed in the instant proposal which cannot be considered in the ambit of amendment to EC. After discussions, Project Proponent voluntarily agreed to withdraw the proposal of lime kilns.

#### **Recommendations of the Committee**

16.4.8 After detailed deliberations, the committee agreed to amend the EC of 03.06.2019 as per the configuration furnished in the EIA report and as recommended by EAC (violation) in its meeting held on 25<sup>th</sup> February 2019.

16.5 Proposed Cement project for enhancement of production capacity (2000 TPD) by **M/s Trumboo Industries Pvt. Ltd. (TIPL)** village-Khrew, Tehsil-Pampore, District Pulwama, **Jammu and Kashmir** [Online Proposal No. IA/JK/IND/123202/2019, File No. J-11011/204/2016-IAII(I)] – **Amendment in Terms of Reference and Validity extension – regarding.**

16.5.1 M/s. Trumboo Industries Pvt. Ltd. (TIPL) project proponent submitted an online application vide proposal No. IA/JK/IND/123202/2019 dated 26<sup>th</sup> Oct 2019 in the prescribed format along with Form-5 and other reports to the Ministry for extension cum amendment of Terms of Reference (ToR) for undertaking EIA report. The proposed project activity is listed at Sl. No. 3(b) Cement Plants under Category “B” in

EIA Notification, 2006. However, due to the applicability of general condition i.e., project located within 5km from boundary of Dachigam National Park, the project was appraised at the Central level as Category ‘A’.

**Details Submitted by the Project Proponent**

- 16.5.2 The Project Proponent is operating existing cement with capacity of capacity 1000 TPD
- 16.5.3 Consent to Establish has been obtained from J&K Pollution Control Board (JKPCB) on 16.08.2004 vide letter no. 200 of 2004 and approval to set up the plant from Jammu & Kashmir State Industrial Development Corporation Ltd vide letter no IDC/MHQ/04/75-III/1043-57 Dated 26.08.2004.
- 16.5.4 Consent to Operate (CTO) has been obtained for the existing capacity from time to time from J&K Pollution Control Board. The present CTO has been renewed by the Jammu & Kashmir State Pollution Control Board vide letter no. SPCB/digital/1806470858 of 2018 dated 09.07.2018, which is valid up to April 2021.
- 16.5.5 In accordance with CTE granted in 2004 and CTO granted from time to time the plant is under operation at consented cement manufacturing capacity of 1000 Metric TPD. Now the proposal is to expand the capacity to 2000 TPD (6.6 Lakhs TPA).
- 16.5.6 Terms of Reference (ToR) was issued by MoEF&CC vide Letter No. J-11011/204/2016-IA.II(I) dated 15<sup>th</sup> Dec, 2016 to undertake detailed EIA study for expansion of existing cement capacity from 1000 TPD to 2000 TPD.
- 16.5.7 Since, three years have already passed from the date of grant of ToR and the desired activities could not be taken up as per schedule due to circumstances beyond the control of Project Proponent. The ToR got expired on 14<sup>th</sup> Dec 2019. However, before the expiry of the ToR an application has been made on 26.10.2019 on PARIVESH Portal for extension of ToR for one more year i.e. up to 14<sup>th</sup> Dec 2020.
- 16.5.8 In the meantime, certain amendments in the ToR became necessary due to the review of the project. However, there is no change in the production capacity under expansion as mentioned in the granted ToR dated 15.12.2016.
- 16.5.9 The required amendments have been detailed below:

S.No.	Product/ Activity (Capacity/ Area)	Existing	Proposed	Remark
1.	Change in units of production capacity from TPD to TPA	Expansion from (1000 TPD to 2000 TPD)	Expansion from 3.3 Lakhs TPA to 6.6 Lakh TPA	TPD production changed to yearly production
2.	Area of Plant	40 ha	12.38 ha	It has now been decided to do expansion in the area of the present plant itself.

S.No.	Product/ Activity (Capacity/ Area)	Existing	Proposed	Remark
3.	Green belt area	Green belt area 13.5 ha (33% approx.)	Green belt area 4.08 ha (33%)	decrease due to the change in total plant area. However, in percentage terms there is no change in the green belt area.
4.	Make up Water requirement	120	270 (existing 135 + proposed 135)	After the review of the project report, the requirement of water has now been assessed at 270 KLD.
5.	Project Cost	₹ 200 Cr.	₹ 165 Cr.	Reduction

16.5.10 The plant is located at Village -Khrew, P.O -Pampore, District Pulwama, State-Jammu & Kashmir. The proposed expansion unit will be located within the existing plant area of 12.38 ha.

16.5.11 The area of the project is 12.38 ha. The entire plant area is non-forest private land over which existing cement plant is in operation. Out of the total land area, 4.08 ha (33%) land will be used for green belt development.

16.5.12 Dachigam National Park is located at 3.49 Km in N direction from the plant; hence the project is considered as Category "A" Schedule 3(b) project as per EIA Notification, 2006 and subsequent amendments.

16.5.13 Total project cost is approximately 165 Cr. TIPL will provide additional employment to about 200 workers over and above 350 workers already employed. Most of the employment has been given to locals from the nearby villages.

16.5.14 The targeted production capacity of the cement will be 2000 TPD (6.6 Lakhs TPA). The basic raw material for the plant would be limestone, gypsum, clay/silica, Iron ore and coal which will be procured from captive mine, Uri, open market, Punjab and Jammu respectively. The transportation will be done through the road. The proposed capacity of cement is given below:

Name of unit	Type of product	Production Capacity after expansion
Cement Plant	Ordinary Portland Cement (OPC)	2000 TPD (6.6Lakhs TPA)

16.5.15 The electricity load required after the expansion of 18 MW will be procured from the power grid of the state government.

- 16.5.16 The requirement of Diesel will be 500 L/day approx. Proposed raw materials for the project are estimated below:

Particulars	Before Expansion (TPD)	After Expansion (TPD)	Source	Mode of Transport
Limestone	1370 T	2740 T	Captive mine	Road
Iron Ore	27 T	54 T	Punjab	Road
Gypsum	20 T	40 T	Uri	Road
Coal	180 T	360 T	Import from S. Africa & part from Jammu	Road
Clay/Silica	250 T	500 T	Local	Road

- 16.5.17 After expansion, the total water requirement will go up to 655 KLD consisting of recycled water 385 KLD and makeup water 270 KLD.
- 16.5.18 There is no court case pending against the project and related activity.

**Observations and Recommendations of the Committee**

- 16.5.19 After detailed deliberations, the Committee recommended the project proposal for amendment in the ToR as mentioned above as well as extension of ToR up to 14<sup>th</sup> December 2020.
- 16.6 Expansion of cement plant by enhancing the cement production capacity (1.5 MTPA to 1.86 MTPA) in the existing standalone grinding unit by process optimization by **M/s. Ambuja Cement Limited** located at village Navagraon, P.O. Jajra, Tehsil Nalagarh, District Solan, **Himachal Pradesh** [Online Proposal No. IA/HP/IND/136337/2008; MoEF&CC File No. J-11011/173/2008-IA.II(I)] – **Environmet Clearance** – regarding.
- 16.6.1 M/s. Ambuja Cement Ltd submitted online application vide proposal no. J-11011/173/2008-IAII(I) dated 29.01.2020 in the prescribed Form 2 along with EIA report and other documents for seeking Environmental Clearance (EC) as per the EIA Notification, 2006. The proposed project activity is listed at Sl. No. 3(b) Cement Plants under Category “B” in EIA Notification, 2006. However, due to the applicability of general condition i.e., interstate boundary of Himachal Pradesh and Punjab, the project was appraised at the Central level as Category ‘A’.
- 16.6.2 The Expansion Project of M/s Ambuja Cements Ltd. (Unit: Nalagarh) located in Village Navagraon, P.O: Jajhra, Tehsil Nalagarh, District Solan State Himachal Pradesh was initially received in the ministry on 24<sup>th</sup> Nov 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 14<sup>th</sup> meeting held on 23<sup>rd</sup> Dec, 2016 and prescribed ToRs to the project for undertaking detailed EIA study for obtaining EC. Accordingly, the ministry of Environment, Forest and climate Change had prescribed ToRs to the project on 27<sup>th</sup> March 2017 *vide* letter no. J-11011/173/2008-IA.II (I) & further amended on 23<sup>rd</sup> May, 2017.

- 16.6.3 Based on the ToRs Prescribed to the project, the project proponent submitted an application for EC to the Ministry online on 21<sup>st</sup> Jan., 2020 vide Online Application IA/HP/IND/136337/2008.

**Details Submitted by the Project Proponent**

- 16.6.4 The project of M/s Ambuja Cements Limited (unit: Nalagarh) located in Village: Navagraon, P.O.: Jajhra, Tehsil: Nalagarh, District: Solan (Himachal Pradesh) is for expansion in Cement Production Capacity from 1.5 MTPA to 2.2 MTPA. The existing project was accorded environment clearance *vide* letter no. J-11011/173/2008-IA-II (1) dated 22<sup>nd</sup> Aug., 2008.

- 16.6.5 The status of compliance of earlier EC was obtained from Regional Office, Dehradun *vide* letter no. 6-93/2008-RO (NZ) / 1964 dated 06<sup>th</sup> Dec., 2019. There is no non-compliance reported by Regional officer. The proposed capacity for the different products as below:

S. No.	Particular	Existing Capacity (MTPA)	Additional Capacity (MTPA)	Total Capacity after expansion (MTPA)
1.	Cement (PPC/OPC)	1.5	0.7	2.2

- 16.6.6 Total land area of existing stand-alone Grinding unit is 29.09 ha; which is already industrial and expansion will be carried out within the existing plant premises. No forest land is involved. The entire land is totally under the possession of M/s Ambuja Cements Limited (unit: Nalagarh). The Satluj River (6.0 km in WSW direction) and Sirsa Nadi (7.0 km in SW direction), are present in 10 km radius of study area. It has been reported that no water body exist around the project and modification/diversion in the existing natural drainage pattern at any stage has not been proposed.

- 16.6.7 The topography of the area is flat and reported to lies between 31<sup>o</sup> 06' 39.21" (N) to 31<sup>o</sup> 07' 3.72" (N) Latitude and 76<sup>o</sup> 38' 20.19" (E) to 76<sup>o</sup> 38' 50.63" (E) Longitude in Survey of India topo sheet No. 53A/12 at any elevation of 375 m AMSL. The ground water table reported to ranges between 18.90 to 21.10 below the land surface during the post - monsoon season and 22.30 to 23.50 below the land surface during the pre - monsoon season. Based on the hydro-geological study, it has been reported that the radius of influence of pumped out water will be 173 m. Further, the stage of groundwater development is reported to be 56% and 13.25% in core and buffer zone respectively and thereby these are designated as Safe areas.

- 16.6.8 No National Park/ Wildlife Sanctuary/ Biosphere Reserve/ Tiger Reserve etc. are reported to be located in the core and buffer zone of the project. The authenticated list of flora and fauna provided through the primary survey reporting presence of two Schedule-I fauna (i.e. Indian Peafowl (*Pavo Cristatus*) and Indian monitor lizard (*Varanus bengalensis*) in the study area (Annexure 5 of EIA/EMP report).

- 16.6.9 Major raw materials required for cement production are Clinker, Gypsum, (Indian & Imported Mineral, Chemical and Synthetic) & Fly ash.

- 16.6.10 Major steps involved in the process of Clinker Grinding Unit are given as below:

- Clinker Storage & Handling
- Fly ash Storage & Handling
- Gypsum Storage & Handling
- Cement Production and Storage
- Hot Air Generator



o Cement Packing and Dispatch

No waste will be generated during Cement manufacturing process.

- 16.6.11 The targeted production capacity of the cement is (1.5 to 2.2 MTPA). Clinker will be sourced from the Ambuja's Rauri / Darlaghat Clinkerisation Unit; Himachal Pradesh transported through road. Gypsum will be sourced from Dabwali transported through road. Fly ash will be sourced from Guru Govind Singh Thermal Power Plant, Ropar / Rajpura / Bathinda / Hissar / Talwandi Sabo through road.
- 16.6.12 The water requirement of the project is 400 m<sup>3</sup>/day. The permission for drawl of ground water is obtained from CGWA vide letter no. 21-4(12)/CGWA/NHR/2009-535 dated 29.01.2010.
- 16.6.13 Total Power requirement of the project is 9.31 MW; which is being / will be sourced from HPSEBL (Himachal Pradesh State Electricity Board Limited) & D.G. Set (for back-up).
- 16.6.14 Baseline Environmental Studies were conducted during Post- Monsoon Season i.e. from Oct., to Dec., 2017. Ambient air quality monitoring was carried out at eight locations during 01<sup>st</sup> Oct., to 31<sup>st</sup> Dec., 2017 and the data submitted indicated: PM<sub>10</sub> (61.8 to 92.4 µg/m<sup>3</sup>), PM<sub>2.5</sub> (22.7 to 41.9 µg/m<sup>3</sup>), SO<sub>2</sub> (5.4 to 14.3 µg/m<sup>3</sup>) and NO<sub>2</sub> (7.6 to 23.2 µg/m<sup>3</sup>). The results of the modeling study indicates that the maximum increase of GLC for the proposed expansion project is 0.65 µg/m<sup>3</sup> with respect to the PM, There will be no significant threat to the gaseous pollutants of the ambient air quality.
- 16.6.15 Ground water quality has been monitored in eight locations in the study area and analyzed. pH: 7.19 to 7.61, Total Hardness: 156 to 356 mg/l, Chlorides: 11.74 to 111.57 mg/l, Fluoride: 0.23 to 0.84 mg/l. Heavy metals are within limits. Surface water samples were analyzed from seven locations. pH: 7.73 to 8.17; DO: 5.20 to 5.90 mg/l and BOD: from 1.10 mg/l to 15.38. COD from 4.08 to 50.80 mg/l.
- 16.6.16 Noise level are in range of 49.1 to 61.4 dB(A) for daytime and 40.3 to 52.7 dB(A) for night time.
- 16.6.17 No R&R is involved in the expansion project.
- 16.6.18 No solid waste will be generated in the cement manufacturing process. Dust collected from various air pollution control equipment will be totally recycled back into the process. STP Sludge is being / will be utilized as manure for greenbelt development within the plant premises. Used oil & grease will be generated from plant machinery, will be sold out to the CPCB authorized recycler.
- 16.6.19 It has been reported that renewed Consent to operate issued by HPSPCB vide letter no. HPSPCB/PCB-ID 14049 20132-34 dated 03<sup>rd</sup> Oct., 2018 for Existing Capacity which is valid up to 31<sup>st</sup> March., 2020.
- 16.6.20 Public hearing of the project was held on 22<sup>nd</sup> Dec., 2018 at Panchayat Bhawan, village Navagraon, P.O.: Jajhra, Dist.- Solan (Himachal Pradesh) under the Chairmanship of Sh. Vivek Chandel, Additional District Magistrate, Solan (Himachal Pradesh) for Expansion of production capacity of existing Cement plant from 1.5 to 2.2 MTPA. The major issues raised during public hearing are Employment, Environment & Pollution, CSR activities related. An amount of 44.0 Lakhs has been earmarked for Corporate Environment Responsibility (CER) based on Public hearing issues and Social Impact Assessment Survey.

- 16.6.21 No additional cost is required for the proposed expansion and the Capital cost for environment protection measures is proposed as Nil (Present pollution control equipments are capable of handling the pollution load). The detailed CER plan has been provided in the EMP (Chapter 8, Pg No. 180 to 187 of EIA/EMP Report).
- 16.6.22 Total employment generation due to the proposed expansion will be for 213 nos. of people through direct employment.
- 16.6.23 Green belt has already been developed in 10.3 ha which is about 33 % of the total acquired area. A 100 m wide greenbelt, consisting of at least 3 tiers around plant boundary has been developed as greenbelt as per CPCB / MoEFCC, New Delhi guidelines. Local native species has been planted with a density of 4000 trees / ha. Total number of saplings 41455 has been planted.
- 16.6.24 The proponent has mentioned that there is no court case or violation under EIA Notification to the project or related activity.

#### **Observations of the Committee**

- 16.6.25 The committee pointed out to the high concentrations of NO<sub>x</sub> and PM<sub>10</sub> in the ambient air quality in the study area. The reasons for which were not furnished in the EIA report.
- 16.6.26 Air Quality prediction was carried out considering flat terrain of the study area. Therefore, the Project Proponent submitted the revised Air Quality prediction modeling details vide letter dated Ref No. ACL/NKL/EMD/02-20/48 dated 24.02.2020.

#### **Recommendations of the Committee**

- 16.6.27 In view of the foregoing, and after detailed deliberations, the committee recommended the proposal for Environmental Clearance with the following specific conditions in addition to the general conditions as per the Ministry's Office Memorandum No. 22-34/2018-III dated 9/8/2018.
- i. Bio-digester for canteen waste shall be installed to generate bio-gas.
  - ii. A detailed rainwater harvesting plan shall be prepared considering the rainfall, percolation etc. at site and identified locations in the study area for use of water by the community, and the same implemented. Compliance report shall be submitted to Regional Office of the Ministry.
  - iii. Project Proponent shall make alternate arrangement progressively to completely abolish the dependence on ground water within five years.
  - iv. Green Belt development shall be varied out in 33% of the plant area.
  - v. Emission levels of particulate matter from stacks shall be limited at less than 20 mg/Nm<sup>3</sup>.
  - vi. Besides paving of roads inside the plant, an industrial vacuum cleaner shall also be deployed to mitigate the generation of fugitive dust.
  - vii. Project Proponent shall adhere to Zero Liquid Discharge.
- 16.7 Integrated Cement Project - Cement Plant Clinkerization Plant, each of 10 MTPA production capacity with Captive Power Plant of 99 MW, Limestone Mine for 12MTPA by **M/s Adani Cementation Ltd., (Lakhpur Cement Works)** located at Village Maldo, Mudhvay, Koriyani and Kapurasi, Taluka Lakhpur, **District Kutch,**

**Gujarat- [Online Proposal No. IA/GJ/IND/69706/2017; File No. J-11011/494/2017-IAII(I)] – Environment Clearance – regarding.**

- 16.7.1 M/s Adani Cementation Ltd submitted online application vide proposal no. J-IA/GJ/IND/69706/2017 dated 10.02.2020 in the prescribed Form 2 along with EIA report and other documents for seeking Environmental Clearance (EC) as per the EIA Notification, 2006. The proposed project activity is listed at Sl. No. 3(b) Cement Plants under Category “A” in EIA Notification, 2006 and appraised at the central level.
- 16.7.2 Proposed Integrated cement project “Lakhpat Cement Works” of M/s Adani Cementation Ltd located in village Koriyani, Maldo, Mudhvay & Kapurasi, Taluka Lakhpat, District Kutch, State Gujarat, was initially received in the Ministry on 26<sup>th</sup> September 2017, for obtaining Terms of Reference (ToR) as per EIA Notification, 2006 and further submitted this proposal on 16<sup>th</sup> May 2018 for amendment in the ToR. The Project was appraised by the Expert Appraisal Committee (Industry) [EAC (1)] during its 32<sup>nd</sup> meeting held during 11- 13<sup>th</sup> June 2018 and prescribed ToRs to the project for undertaking detailed EIA study for obtaining EC. Accordingly, the Ministry of Environment, Forest and Climate change had prescribed ToR to the project on 25.06.2018 vide Lr. No. IA-J-11011/494/2017-IA-II (I).
- 16.7.3 Based on the ToR prescribed to the project, the project proponent submitted an application for EC to the Ministry online on 10.10.2019 vide Online Proposal No. IA/GJ/IND/69706/2017, subsequently reply uploaded on 19.10.2019 for the EDS raised on the proposal. The proposal was considered in the 14<sup>th</sup> EAC (Industry - I) Meeting held during 23-24<sup>th</sup> December 2019. Due to several deficiencies in the EIA report, the committee returned the proposal in present form and recommended to resubmit as fresh proposal. Project Proponent resubmitted the application for EC on 10.02.2020.

**Details Submitted by the Project Proponent**

- 16.7.4 The proposed Integrated Green Field Project by M/s Adani Cementation Ltd (ACL) is for setting up of a new Integrated Cement Plant for production of 10 MTPA Clinker, 10 MTPA Cement, 99 MW Captive Power (75 MW - TPP & 24 MW - WHRS), Limestone Mine of 12 MTPA, Desalination of 9000 KLD and Berthing Jetty with handling capacity of 19 MTPA at village Maldo, Mudhvay, Koriyani & Kapurashi, Taluka Lakhpat, District Kutch, State Gujarat.
- 16.7.5 The total land required for the proposed integrated project is 454.27 ha (Cement Plant & CPP: 190.23 ha, Limestone Mine: 251.9 ha, Conveyor Corridor: 8.09 ha, Backup & Desalination Plant: 4.05 ha), out of which, 142.076 ha is agricultural land (Private land), 1.7235 ha is Grazing land and 310.47 ha is others [307.8163 ha, Govt. Land and 2.6564 ha of Forest land for which In-principal approval (Stage I) has been obtained from MOEFCC vide letter no. FCA-1019/10-03/19/S.F-60/F]. Around 23 ha of private land is acquired and acquisition of rest of the area is under process. There is no river passing through the project area. It has been reported that in 10 km radius area from project site, Rivers, KapusariNadi and Kali Nadi are flowing towards NW direction following the slope. Kori Creek is at distance of 4.2 km from the Plant boundary in NW direction.
- 16.7.6 The topography of the area is plain and reported to lie between 23<sup>o</sup>42’43.65” to 23<sup>o</sup>44’50.99” N Latitude and 68<sup>o</sup> 34’ 41.81” to 68<sup>o</sup> 42’ 40.94” E Longitude in Survey of India topo sheet No. 41A/10, at an elevation of 27m AMSL. The ground water

table reported to range between 5-10m below the land surface during the post-monsoon season and 5-10 m below the land surface during the pre-monsoon season. Based on the hydro-geological study, it has been reported that the radius of influence of pumped out water will be 411m. Further, the stage of groundwater development is reported to be 0 % and 9.33% in core and buffer zone respectively and thereby these are designated as safe areas.

16.7.7 The Eco Sensitive Zone of Narayan Sarovar Wildlife Sanctuary is located at a distance of 3.8 km towards South of the Plant area. The area also does not report to corridor for Schedule-I fauna. The core area of the project site has recorded presence of a Critically Endangered shrub species *Commiphorawightii* and four nos. of Schedule I species of birds. The buffer zone has recorded presence of 15 nos. of species of high conservation value among which fourteen nos. are faunal species and one is the Critically Endangered shrub species. One species of Reptile, eight species of birds and five species of mammals are Schedule-I species reported from the study area. The Wildlife Conservation Plan has received approval from the Chief Wildlife Warden of Gujarat State vide Letter no. WLP/T.32/C/988/2019-20 Dated: 29/01/2020.

16.7.8 The process of project showing the basic raw material used and the various processes involved to produce the final output is given below:

- Limestone shall be raised from Mudhvay mines by surface miners and transported by belt conveyors to proposed plant.
- Low grade Limestone shall be received through Trucks to proposed Plant (From GMDC)
- Silica sand shall be received through trucks, Limestone mix and silica sand shall be ground in a Raw Mill. Ground fine raw meal shall be stored in a blending silo.
- Fine ground raw meal shall be fed to Preheater, Calciner and Kiln. (Pyro process System)
- Dry process, rotary kiln system with pit-less type clinker cooler shall be provided for clinker production.
- Coal /Lignite/Petcoke shall be ground in Coal mill. Fine Coal/Lignite/Petcoke shall be used as a fuel in the pyro process for production of Clinker while Lignite will be used as a fuel in Captive power plant for power generation.
- Waste heat from preheater and cooler shall be utilized to produce power through waste heat recovery Boiler System.
- Clinker shall be transported from the Cooler by the help of DPC and stored in Clinker Silo and conveyed to cement mill hoppers through Conveyors.
- Clinker shall be extracted from clinker hopper and transported to cement mill hopper for production of cement, Balance Clinker shall be transported to jetty through pipe conveyor for barge loading.
- Gypsum, Fly ash, Slag and Clinker from Cement mill hopper shall be fed in appropriate proportion to Cement grinding system to produce various cement product like PPC/OPC/PSC/PCC as per the market demand requirement.
- Cement shall be stored in Silos. Partially cement shall be packed in bags in packing plant and dispatched through Trucks, balance bulk Cement shall be conveyed to jetty through pipe conveyor for barge loading.

- Power requirement of the proposed plant shall be fulfilled by CPP/WHRS and Grid supply.
- Process Water requirement shall be sufficed from Desalination plant, proposed in the Backup area

16.7.9 Waste generated in the process:

Solid waste generated through the process

S.No.	Name of Waste	Mode of disposal/Use
1	Used Containers (Drums)	Through TSDF
2	Used Oil	Through Authorized Recycler
3	Bottom Ash	Shall be used as Additive for Clinker production
4	Fly ash	Shall be used as Raw material for PPC/PCC production

Waste Water generated through the process

S.No.	Name of Waste	Discharge/Reuse
1	CPP Condenser Fin cleaning	Reused for dust suppression in ML area
2	Industrial waste water	Reuse in dust suppression after treatment through ETP
3	Domestic Waste Water	Reuse for Gardening after treatment through STP
4	Brine Reject	Discharge to designated outfall location in Kori Creek

16.7.10 The target production capacity of Lakhpat Cement Works is 10.0 MTPA Clinker and 10.0 MTPA Cement. The required raw material 12 MTPA Limestone would be sourced from Limestone Mines, which is integral part of project. Limestone shall also be procured from GMDC Mine (as per MoU vide letter no. GMDC/BD/LM/1988/2017-18, dated 13<sup>th</sup> September 2017). Limestone transportation from mine will be through belt conveyor and balance by road from GMDC mine.

16.7.11 The fresh water requirement of the project is estimated as 9000 m<sup>3</sup> /day which will be met from the proposed Desalination Plant. The permission for drawl of Sea water for desalination was obtained from Gujarat Maritime Board vide letter no. GMB/N/PVT-1/1798/559/419 dated 17.01.2020.

16.7.12 The power requirement of the project is estimated as 125 MW, out of which 99 MW is obtained from CPP (75 MW TPP, 24 MW WHRS) and remaining 26 MW would be drawn from Grid Power.

16.7.13 Baseline Environmental Studies were conducted during winter season i.e. from December, 2017 to February, 2018. Ambient air quality monitoring has been carried out at nine locations during December, 2017 to February, 2018 and consolidated 24 hour averaging 98<sup>th</sup> percentile data submitted indicated: PM<sub>10</sub> (64.7 µg/m<sup>3</sup> to 75.1 µg/m<sup>3</sup>), PM<sub>2.5</sub> (23.3 to 32.9 µg/m<sup>3</sup>), SO<sub>2</sub> (8.5 to 18.7 µg/m<sup>3</sup>) and NO<sub>x</sub> (10.6 to 19.9 µg/m<sup>3</sup>). The results of the modeling study indicate that the maximum increase of GLC for the proposed project is 5.81 µg/m<sup>3</sup> with respect to the PM<sub>10</sub>. The maximum GLC of SO<sub>2</sub> and NO<sub>x</sub> concentration was too low for the model to plot Isopleths.

- 16.7.14 Ground water quality were monitored at seven locations in the study area. The analysis shows: pH- 7.1 to 7.4; Total Hardness- 309.7 to 600.6 mg/l; Chlorides- 253 to 548 mg/l; Fluoride- 0.29 to 0.48 mg/l. Heavy metals are within the limits. Surface water samples were monitored at six locations (two samples from inland surface water – village pond and four samples from Kori Creek). In village pond: pH-7.5 to 7.84; DO- 4.3 to 5.4 mg/l; BOD- 1.1 to 2.4 mg/l; COD - 25.2 to 38.4 mg/l. Kori Creek samples : pH-7.9 to 8.1; DO- 5.7 to 6.4 mg/l; BOD- 0.8 to 0.92 mg/l; COD- 20.3 to 22.4 mg/l.
- 16.7.15 Noise levels are in the range of 41.4 to 50.4 dB (A) for daytime and 32.7 to 42.9 dB (A) for nighttime.
- 16.7.16 It has been reported that forty four people needs to be displaced in the core zone of the project. R&R is involved. It has been envisaged that seventeen families are to be rehabilitated, whom will be provided compensation and preference in the employment.
- 16.7.17 It has been reported that the generated solid waste viz. Bottom ash and Fly ash shall be used as raw materials in Cement manufacturing process. However, as per approved mine plan, there will be generation of 5.645 Mcum of Over Burden (OB) and 0.10 Mcum of top soil from 1<sup>st</sup> to 5<sup>th</sup> year of mining and the generated OB will be back filled in the excavated pit. The topsoil removed during mining will be utilised for spreading on the earthen bunds and used for plantation. It has been envisaged that an area of 147.4 ha (Plant : 63.9ha & Mine : 83.5ha) will be developed as green belt in the project site to attenuate the noise levels and to arrest airborne dust generated due to the project development activities.
- 16.7.18 It has been reported that the Consent to Establish from the Gujarat State Pollution Control Board was obtained vide File no. GPCB/(PCB ID - 69493) dated 20.02.2019 and Consent is valid up to seven years from the issue of CTE
- 16.7.19 The Public hearing of the project was held on 28.05.2019 at village- Koriyani, Lakhpat under the chairmanship of Smt. Remya Mohan, District Magistrate and District Collector Bhuj, Kutch for production of 10 MTPA of Cement and Clinker each setting up of Cement and Clinkerisation Plant. The issues raised during public hearing are related to employment, cattle grazing/ fodder, health /medical, educational /skill development, infrastructure /hospital /school /road, marine /fisherman, greenbelt/plantation, godhatad dam, disposal of waste water, drinking water, livelihood, air and water pollution, revenue for panchayat and agricultural support etc. An amount of ₹ 45.6 Cr (~0.61 % of Project cost i.e. ₹ 7525 Cr) has been earmarked for Corporate Environment Responsibility (CER) based on public hearing issues.
- 16.7.20 The capital cost of the project is ₹ 7525 Cr and the capital cost for environmental protection measures is proposed as ₹ 107 Cr. The annual recurring cost towards the environmental protection measures is proposed as ₹ 12 Cr .The detailed CER plan has been provided in EIA report in its page No. 4-34 under para 4.5 of Chapter 4. Social Impact Assessment study and need based assessment report is discussed under chapter 7 of Annexure 4.1 of EIA report. During the operation phase, there will be direct and indirect employment generation. 150 nos. of skilled workers will be directly employed and Indirect employment in the form of contractual workers, will be 450 nos. of people.

- 16.7.21 Greenbelt will be developed in 63.9 ha which is more than 33 % of the area for Cement Plant and Captive Power Plant (190.23 ha). For the proposed limestone mine about 83.5 ha of lease area will be covered under plantation. A 100 m wide greenbelt, consisting of at least three tiers around plant boundary will be developed as greenbelt and green cover as per CPCB/ MoEF&CC guidelines. Local and native species will be planted with a density of 1000 trees per hectare. Total no. of 63900 saplings will be planted and nurtured in 63.9 ha (Plant area) in three years. Replantation will be carried out during 4<sup>th</sup> & 5<sup>th</sup> year of project activity considering 30% of mortality rate.
- 16.7.22 The proponent has mentioned that there is no court case or violation under EIA Notification to the project or related activity.

**Observations of the Committee**

- 16.7.23 The EIA report is prepared for interlinked and integrated project with mining and jetty and desalination plant in the CRZ. The committee considered the project aspects related to cement plant only. The issues related to mining, sea water intake and outfall etc. shall be appraised in the respective EACs.

**Recommendations of the Committee**

- 16.7.24 In view of foregoing, after detailed deliberations, the committee recommended the project for grant of Environmental Clearance under the provisions of EIA Notification, 2006 subject to the following specific conditions in addition to the applicable general conditions as per the Ministry's Office Memorandum No. 22-34/2018-IA.III dated 9/8/2018 pertaining to Cement plants.
- i. No Ground water abstraction is permitted. The water requirement shall be met by desalination of sea.
  - ii. Rain water harvesting plan shall be prepared considering all the parameters like rainfall, percolation, run off etc. in the plant site and in the study area for water use by the community, and the same shall be implemented. Compliance report thereof shall be submitted to the Regional Office of this Ministry.
  - iii. Approved Wildlife Conservation Plan (WLCP) shall be implemented, monitored and reported to the Regional Office in the six monthly compliance report.
  - iv. Total greenbelt/plantation in and around the project boundary shall not be less than 63.9 ha. Plantation is to be completed in three years and maintained properly. Extensive greenery by raising avenue plantation, and by planting barren areas, etc., shall be developed in the vicinity of the plant to prevent air borne dust pollution.
  - v. An amount of ₹ 46 Cr earmarked for CER shall be implemented within four years.
  - vi. Approved R&R plan shall be implemented and progress of the same shall be submitted to MoEF&CC till the entire plan is implemented.
  - vii. Locals shall be trained and thereafter employed in the plant. The employment of local work force shall be in compliance with the state government regulations.
  - viii. Top soil shall be conserved for landscaping and green belt development.

- ix. Specific power consumption shall not exceed 58 kWh/t of clinker and 30 kWh/t of cement production.
  - x. Four Continuous Ambient Air Quality Monitoring Stations (CAAQMS) shall be installed to monitor the ambient air quality in and around the plant in consultation with SPCB
  - xi. Particulate emissions from stacks shall be maintained at less than 30 mg/Nm<sup>3</sup>.
  - xii. Alternate fuels shall be used in the plant and emission norms shall be complied with for use of alternate fuels as required in accordance with the Notification of this Ministry vide SO 3518 (E) dated 23.11.2016.
  - xiii. Besides paving of roads inside the plant, industrial vacuum cleaners shall be deployed to prevent air borne dust pollution.
  - xiv. Plant shall achieve Zero Liquid Discharge.
  - xv. Care shall be taken to restrict cutting of trees to the minimum. For every tree cut, a minimum of 10 trees or the number as required by the state policy, whichever is more shall be planted.
- 16.8 Expansion in production capacity of Asbestos & Non Asbestos Cement Sheets and Pressure Pipes from 1,60,000 MTPA to 2,40,000 MTPA by **M/s.ARL Infratech Limited** located at Location: Khasra Nos. 718, 719, 720, 721, 885/722 & 717(part), Village Dahami Khurd, Bagru, Tehsil Sanganer, District Jaipur, **Rajasthan** - [Online Proposal No. IA/RJ/IND/4374/2007; File No. J-11011/343/2007-IAII(I)] – **Environment Clearance** – regarding.
- 16.8.1 M/s ARL Infratech Ltd. (earlier, Ankit Roofing Ltd.), has made an online application vide proposal no. IA/RJ/IND/4374/2007 dated 5<sup>th</sup> February 2020 in prescribed Form – 2 along with EIA Report and other documents to seek Environmental Clearance (EC) under the provisions of the EIA Notification, 2006 for the project mentioned above. The proposed project activity is listed at Sl. No. 4 (c) Asbestos milling & asbestos based products under Category “A” EIA Notification, 2006 and the project is appraised at the Central level.
- 16.8.2 The proposal of M/s ARL Infratech Ltd (Formerly, M/s Ankit Roofing Ltd.) for expansion of Asbestos & Non Asbestos Cement Sheets and Pressure Pipes from 160,000 TPA to 240,000 TPA located in Village DahamiKhurd, Bagru, Tehsil - Sanganer, District - Jaipur, State Rajasthan. The proposal was initially received in the Ministry on 31.01.2019 & subsequently, on account of deficiencies, it was resubmitted on 14.02.2019, 19.03.2019 & 06.06.2019 for obtaining Terms of Reference (ToR) as per EIA Notification, 2006. The project proposal was appraised EAC(I) during its 8<sup>th</sup> meeting held 26.06.2019 and prescribed ToRs to the project for undertaking detailed EIA study for obtaining EC. Accordingly, the Ministry has prescribed ToRs to the project on 03.02.2020 vide Lr. No. IA-J11011/343/2007-IA. II (I).
- 16.8.3 Based on the ToRs prescribed to the project, the project proponent submitted an application for EC to the Ministry on 5<sup>th</sup> February 2020.
- 16.8.4 The existing project was granted EC vide lr. No. J-11011/ 343/ 2007 -IA.II (I) dated 27.08.2007. Name change to ARL Infratech Limited in existing EC was taken place vide letter no. J-11011/343/2007-IA.II(I) dated 24.01.2020.



- 16.8.5 The Status of compliance of earlier EC through Regional Office, Lucknow vide letter no. IV/Env/R/IND-74/553/2007/172 dated 15.05.2019 and action taken report over non-compliances has been seen.

**Details Submitted by the Project Proponent**

- 16.8.6 The proposed capacity for different products for site area is as below:

Name of Unit	Existing Capacity	Additional Capacity	Capacity after expansion
Asbestos & Non-Asbestos Cement Sheets & Pressure Pipes	1,60,000 TPA	80,000 TPA	2,40,000 TPA

- 16.8.7 The total land area required for the project is 72,263 sq.m (existing- 35,100 sq. m & proposed expansion- 37,163 sq.m). The land for existing project comprising of khasra Nos. 719,720 and 721 has been duly converted for industrial use. The land for proposed expansion project comprising of khasra no. 718 admeasuring 6400 sq.m, khasra no. 717 (part) admeasuring 10,818 sq.m & khasra no. 885/722 admeasuring 19,945 sq. m are duly converted for industrial use. No river or water body passes through the project area. Sadariya Nadi (seasonal) is located at ~1.4 km towards South of the project site and modification/diversion in the existing natural drainage pattern at any stage has not been proposed.

- 16.8.8 The topography of the project area is flat and reported to lie between 26°48'56.11" N to 26°49'4.95"N Latitude and 75°34'13.60" to 75°34'26.78" E Longitude in Survey of India topo sheet No. 45 N/9 at an elevation of 360 m AMSL. The ground water table reported to range between 27 to 30 m below the land surface during the post-monsoon season and 30 to 35 m below the land surface during the pre-monsoon season. The project area falls in Sanganer block which falls under over exploited and stage of ground water development is more than 300%.

- 16.8.9 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 corridor for Schedule-I fauna. *PavoCristatus* (Schedule I) i.e. Indian Peafowl is reported from the buffer area. Wildlife conservation plan has been submitted to Dy. Conservator of forest, Jaipur for authentication.

- 16.8.10 The process of project showing the basic raw material used and the various processes involved to produce the final output, waste generated in process are as below:

S. No.	Raw material	Nature	Unit	Consumption (TPD)		Source of Supply	Mode of Transport
				Existing quantity (for asbestos based product)	Proposed quantity (for asbestos & non-asbestos based product)		
<b>Asbestos&amp; Non Asbestos cement sheet &amp; pipe</b>							
1	Asbestos Fibre*	Solid	TPD	37	55	imported directly from	By ship to the port and by

S. No.	Raw material	Nature	Unit	Consumption (TPD)		Source of Supply	Mode of Transport
				Existing quantity (for asbestos based product)	Proposed quantity (for asbestos & non-asbestos based product)		
						Countries like Russia, Brazil and Kazakhstan, etc.	Road from Port.
2	PVA Fibre**		TPD	-	3.3	Imported	By Ship to port and by road from port.
3	Fly-Ash	Solid	TPD	119	178	Fly Ash is obtained from Thermal Power Plants in Kota, Suratgarh and Dadri.	By Road
4	Cement	Solid	TPD	238	358	Cement is purchased directly from manufacturers majorly from Rajasthan only like Wonder, Lafarge & Ultra-tech cement.	By Road
5.	Others (Pulp / Dry Waste etc.)	Solid	TPD	63	95	Purchased locally from Indian market	By Road
6.	Additives (Performance enhancers) **	Liquid	TPD	-	0.067	Purchased locally from Indian market	By Road

\* used only in asbestos based cement sheet & pipe

\*\* used only in non-asbestos based cement sheet & pipe

**Waste generation & management**

S.No	Type		Quantity	Management	
1.	Liquid	Domestic	18 KLD	Treatment in existing STP capacity. Approximately 11 KLD for process water and 6 KLD for green belt development shall be catered to by the treated domestic wastewater.	
		Effluent	No trade effluent generated	-	
2.	Solid	Process solid Waste (Broken sheets & pipes)	Existing	1950 Kg/day	Total waste generated will be 2880 TPA. <i>Hazardous waste</i> as per HOWR, 2016. Asbestos containing residues The same are being and will be pulverized and recycled in the closed circuit process.
			Proposed	930 kg/day	
		Municipal Solid waste	Existing	53 TPA	
			Proposed	15 TPA	
		dry waste from APCD	0.5 MT/Month		Mixed with water to form slurry, which will be recycled into the process.

- 16.8.11 The targeted production capacity after expansion of asbestos & non-asbestos cement sheets & pressure pipes will be 2,40,000 TPA. Also an additional 1 no. D.G. Set of capacity 330 KVA is proposed. The majority of raw material for the asbestos & non-asbestos cement sheets & pressure pipes is being/will be sourced from open market and The majority of raw material is being/will be transported through Rail/Road.
- 16.8.12 The total water requirement of the project is as 90 m<sup>3</sup> /day (No change), out of which 75m<sup>3</sup>/day of fresh water requirement will be obtained from the existing borewell and the remaining requirement of 15 m<sup>3</sup> /day recycled water will be met from the STP treated water.
- 16.8.13 Permission for withdrawal of ground water requirement for the existing unit was obtained by CGWA NOC no. 21-4(87)/WR/CGWA/2007-372 dated 05.02.2008. The application for the renewal of the NOC has been submitted to CGWA on 24.05.2017.
- 16.8.14 The total power requirement of the project is estimated as 1500 kVA (Existing 1500 kVA + Additional Nil) which is being / will be sourced from JVVNL GSS & D.G. Set (for back-up) {existing 660 kVA x 3 nos.; proposed 330 kVA x1 no}
- 16.8.15 Baseline Environmental Studies were conducted during winter season i.e. from December 2018 to February, 2019. Ambient air quality monitoring has been carried out at eight locations during December 2018 to February, 2019 and the data submitted indicated: PM<sub>10</sub> (47.8 µg/m<sup>3</sup> to 94.7 µg/m<sup>3</sup>), PM<sub>2.5</sub> (26.3 µg/m<sup>3</sup> to 51.0 µg/m<sup>3</sup>), SO<sub>2</sub> (5.7 µg/m<sup>3</sup> to 11.7 µg/m<sup>3</sup>) and NO<sub>x</sub> (11.8 µg/m<sup>3</sup> to 24.1 µg/m<sup>3</sup>) CO (0.7

mg/m<sup>3</sup> to 2.0 mg/m<sup>3</sup>). The results of the modelling study indicates that the maximum increase of GLC for the proposed expansion project is 7.2 µg/m<sup>3</sup> with respect to the PM<sub>10</sub>, 0.09 µg/m<sup>3</sup> with respect to the SO<sub>2</sub>, 6.8 µg/m<sup>3</sup> with respect to the NO<sub>x</sub> & 0.00387 mg/m<sup>3</sup> with respect to the CO.

- 16.8.16 Ground water quality has been monitored in eight locations in the study area. The analysis shows. pH- 7.34 to 8.24; Total Hardness- 100 to 4250 mg/l; Chlorides- 60 to 5502 mg/l; Fluoride- 0.5 to 1.9 mg/l. Heavy metals are within the limits. Surface water quality of study area could not be assessed as water bodies were found to be dry.
- 16.8.17 Noise levels are in the range of 51.3 to 68.2 Leq dB(A) for day time and 39 to 52 Leq dB(A) for Night time.
- 16.8.18 The expansion project will be executed in the existing plant premises & additional land which is already acquired by the company and thus no R &R is involved.
- 16.8.19 It has been reported that a total of 2880 TPA of Process solid Waste (Broken sheets & pipes), which is being and will be pulverized and recycled in the closed circuit process. 0.5 MT/Monty of dry waste from APCD recycled into the process. It has been envisaged that an area of 23,847 sq.m (33.0 %) land will be developed as green belt around the project site to attenuate the noise levels and trap the dust generated due to the project development activities.
- 16.8.20 It has been reported that the Consent to Operate from the Rajasthan State pollution Control Board (RSPCB) has been obtained vide letter no. F(MUID) /JAIPUR(Sanganer) /144(1) / 2018-2019 /7337-7339, validity of CTO is up to 31.01.2023 and Authorization under Hazardous Waste (Management & Transboundary Movement) Rules, 2016, vide letter no. F(HSW) /Jaipur(Sanganer)/ 6(1)/2009-2010/5389-5391 dated 12.12.2018. The authorization is valid upto 31.07.2021.
- 16.8.21 The Public hearing of the project was held on 06.11.2019 at 11:00 AM at Rajeev Gandhi Sewakendra, Village Dahmikalan, Bagru, Tehsil Sanganer, Jaipur (Raj) under the Chairmanship of Shri Beerbal Singh, Additional District Magistrate (ADM), Jaipur City (North) and Shri Sanjay Kothari, Regional Officer (R.O), Rajasthan State Pollution Control Board (RSPCB), Jaipur (South) for expansion of expansion of Asbestos & Non Asbestos Cement Sheets and Pressure Pipes from 1 60,000 TPA to 2,40,000 TPA. No written suggestion or complaint regarding the public hearing for the proposed expansion project was received either during the public hearing or in the RSPCB Office. The issues raised during public hearing are employment, water, CER and environmental management. An amount of ₹13.0 Lakh (of total capital cost i.e. ₹ 13.0 Cr) has been earmarked for Corporate Environmental Responsibility based on public hearing issues.
- 16.8.22 The capital cost of the expansion project is ₹ 13.0 Cr and the capital cost for environmental protection measures is proposed as ₹ 78 Lakh. The annual recurring cost towards the environmental protection measures is proposed as ₹ 9.5 Lakh/annum. The detailed CER plan has been provided in the EMP in its page No. 330 to 332. The total employment generation from the expansion will be for 100 nos. of persons through direct employment (Existing 350 persons, Total employment after expansion will be 450 persons).
- 16.8.23 About 11,583 sq.m of the existing plant area (35,100 sq.m.) has already been developed under greenbelt & plantation. An area covering 23,847sq.m. i.e. 33 % of

the total area after expansion (72,263 sq.m.) will be developed under greenbelt & plantation. A 20 m (max width) wide greenbelt, consisting of at least 2 tiers around plant boundary has been/ will be developed as greenbelt and green cover as per CPCB/ MoEF&CC, New Delhi guidelines. Presently 2387 trees & plants are planted in the existing plant premises.

16.8.24 The proponent has mentioned that there is no court case or violation under EIA Notification to the project or related activity.

16.8.25 Name of the consultant: Paramarsh Servicing Environment & Development (S.No. 118, List of Accredited Consultant Organizations (Alphabetically) Rev. 83, Jan 20, 2020).

#### **Observations and Recommendations of the Committee**

16.8.26 After detailed deliberations, the committee deferred the proposal and sought the following additional information.

- i. Asbestos concentration in the AAQ data to be furnished.
- ii. CER list to be revised as most of the activities in CER table are related to CSR.
- iii. Water quality data are wrong. PP was advised to redo water quality analysis.
- iv. Plant layout is sketchy, and does not properly reflect the details Proper engineering drawing shall be furnished by the Project Proponent.
- v. TOR point # 9 needs to be addressed properly as per requirement.
- vi. Action Plan to achieve Zero Liquid Discharge shall be furnished.

16.9 Expansion of Integrated Steel Plant; Sponge Iron (from 297000 MTPA to 594000 MTPA), MS Billet (from 330000 MTPA to 653400 MTPA), Captive power (from 53 MW to 80.5 MW) and New Pellet plant establishment-792000 MTPA by **M/s. Gallant Ispat Limited** located at AL 5, Sector 23, GIDA Industrial Area, Tehsil Sahjanwa, **District Gorakhpur, Uttar Pradesh**- [Online Proposal No. IA/UP/IND/119401/2016, File No. J-11011/229/2008-IA.II.(I)] – **Re-consideration for grant of Environment Clearance based on ADS reply** – regarding.

16.9.1 The aforesaid proposal was earlier considered in the meetings of the Expert Appraisal Committee held during 21-23<sup>rd</sup> October 2019 and the relevant portion of the minutes of the meeting is given as below:

M/s Gallant Ispat Limited has made online application vide proposal no. IA/UP/IND/119401/2016 dated 26<sup>th</sup> September, 2019 in the prescribed Form -2 along with copies of EIA/EMP report and other documents seeking Environmental Clearance (EC) under the provisions of the EIA Notification, 2006 for the project mentioned above. The proposed project activity is listed at Sl. No. 3(a) Metallurgical Industries (Ferrous and Non-ferrous) under Category “A” EIA Notification, 2006 and the proposal is appraised at Central level.

16.9.2 The expansion project proposal of M/s. Gallant Ispat Limited located at AL-5, Sector 23, GIDA Industrial Area, Tehsil Sahjanwa, District Gorakhpur, Uttar Pradesh was initially received in the Ministry on 28<sup>th</sup> January, 2019 for obtaining Terms of Reference (ToR) as per EIA Notification, 2006. The project was appraised by the Reconstituted Expert Appraisal Committee (Industry) [EAC (I)] during its 4<sup>th</sup> meeting

held on 20<sup>th</sup> to 22<sup>nd</sup> February, 2019 and prescribed ToRs to the project for undertaking detailed EIA study for obtaining environmental clearance. Accordingly, the Ministry had prescribed ToRs to the project on 27<sup>th</sup> May, 2019 vide Lr. No. J-11011/229/2008-IA II (I).

Based on the ToRs prescribed to the project, the project proponent submitted an application for environmental clearance to the Ministry on 26<sup>th</sup> September 2019.

**Details submitted by the project proponent**

16.9.3 The project of M/s Gallantt Ispat Limited, located at AL-5, Sector 23, GIDA Industrial Area, Tehsil Sahjanwa, District Gorakhpur Uttar Pradesh, is for expansion of Integrated Steel Plant; Sponge Iron (from 297000 MTPA to 594000 MTPA), MS Billet (from 330000 MTPA to 653400 MTPA), Captive power (from 53 MW to 80.5 MW) and New Pellet plant establishment 792000 MTPA. The existing project was accorded EC vide Lr.no J-11011/229/2008-IA-II (I) dated 18<sup>th</sup> October, 2017.

16.9.4 The Status of compliance of earlier EC was obtained from Regional Office, Lucknow vide letter no. IV/Env/UP/Ind-154/459/ 2017/104 dated 19<sup>th</sup>September, 2019. There are no non-compliances reported by Regional officer. The proposed capacity for different products for site area as below:

Name of Unit	Existing Capacity and configuration	Additional Capacity and configuration	Capacity after expansion and configuration
Sponge Iron Plant	2,97,000 MTPA	2,97,000 MTPA	5,94,000 MTPA
	2 x 450 TPD	1 x 750 TPD & 1 x 150 TPD	2x 450 TPD, 1 x 750 TPD & 1 x 150TPD
M.S. Billets	3,30,000MTPA	3,23,400 MTPA	6,53,400 MTPA
	2 x 20 T* + 2 X 30 T	2x 22.5 T, 2 x 27.5 T	4 x 30 T, 2 x 22.5 T, 2 x 27.5 T
Captive Power Plant	53 MW (35 MW of FBC and 18MW of WHRB)	27.5 MW	80.5 MW (44.5MW of CFBC and 36 MW of WHRB)
Pelletization Plant	-	7,92,000 MTPA	7,92,000 MTPA
*Existing 2 x 20T Induction Furnace will be modified into 2 x 30 T after expansion.			
**MTPA refers to Metric Tons Per Annum			

16.9.5 The total land required for the project is 45.903 ha which is an industrial land. No /forest land involved. The entire land has already been acquired for the project. No River passes through the project area. It has been reported that no water body/ water body exist around the project and modification/diversion in the existing natural drainage pattern at any stage has not been proposed.

16.9.6 The topography of the area is flat and reported to lie between 26°45'16.12" to 26°45'44.48"N Latitude and 83°11'37.63" to 83°12'15.71" E Longitude in Survey of India topo sheet No. 63N1, 63 N2, 63 N5 and 63 N6, at an elevation of 84 m AMSL. The ground water table reported to range between 2.5 to 4.49 m below the land surface during the post-monsoon season and 2.13 to 6.5 m below the land surface

during the pre-monsoon season. The project area falls in Sahjanwa block which falls under Safe Category and stage of ground water development is 68.44%.

16.9.7 No National Park/Wildlife Sanctuary/Biosphere Reserve/Tiger Reserve etc. are reported to be located in the core and buffer zone of the project. The area also does not report to corridor for Schedule-I fauna.

16.9.8 The process of project showing the basic raw material used and the various processes involved to produce the final output, waste generated in process are shown below.

**Basic raw materials used in the process:**

S. No.	Raw Material	Consumption (TPA)			Source of Supply	Mode of Transport
		Existing	Additional	Total after Expansion		
<b>SPONGE IRON PLANT</b>						
1.	Iron Ore	237600	-	66528	Open market	Rail
2.	Pellets	237600	557172	794772	Self/Manufacturer	Conveyer/Rail
3.	Coal	267300	267300	534600	Import/Linkage auction/ Open Market	Rail
4.	Dolomite	14850	14850	29700	Open Market	Road
<b>PELLETIZATION PLANT</b>						
1.	Iron Ore Fines	-	883872	883872	Open Market	Rail
2.	Bentonite	-	6336	6336	Open Market	Road
3.	Lime Stone	-	7920	7920	Open Market	Road
4.	Dolomite	-	3960	3960	Open Market	Road
5.	Coal (for PGP/ mix)	-	43560	43560	Open Market	Rail
<b>STEEL MELT SHOP DIVISION (INDUCTION FURNACE WITH CONTINUOUS CASTER)</b>						
1.	Sponge Iron	297000	297000	594000	In House	Conveyers
2.	MS Scraps	109267	91512	200779	Local Market	Road
3.	Ferro Alloy	4950	2891	7841	From Local Manufacturer	Road
<b>CAPTIVE POWER PLANT</b>						
1.	Coal	124740	89760	214500	Linkage auction/open market	Rail
2.	Rice Husk	83160	-	35244	Local Market	Road
3.	Dolochar	41580	38610	80190	In house	Conveyers

- 16.9.9 The targeted production capacity after expansion will be Sponge iron from 297000 MTPA to 594000 MTPA, MS Billet from 330000 MTPA to 653400 MTPA, Captive Power from 53.0 MW to 80.5 MW. A new pellet plant, 792000 MTPA capacity, will be installed. Iron ore fines/ coal for the plant will be procured from Open Market. The major raw materials viz., iron ore, coal is being/will be transported through Rail.
- 16.9.10 The total water requirement of the project is estimated as 6776 m<sup>3</sup>/day (Existing 4254 m<sup>3</sup>/ day + Proposed 2522 m<sup>3</sup>/ day) which will be obtained from groundwater. Permission for withdrawal of ground water requirement for the existing unit has been obtained by CGWA NOC no. 21-4(161)/NR/CGWA/2008-908 dated 14<sup>th</sup> May, 2018. The application for the withdrawal of additional water requirement was submitted to CGWB on 17<sup>th</sup> June, 2019. As per the current status of the application, the same has been examined & recommended by CGWB to CGWA.
- 16.9.11 The total power requirement of the project is estimated as 80.5 MW (Existing 53.0 MW + Additional 27.5 MW) which is being / will be sourced from Captive Power Plant, WHRB & D.G. Set (for back-up) and 10.0 MW from Purvanchal Vidyut Vitran Nigam Limited for emergency requirement.
- 16.9.12 Baseline Environmental Studies were conducted during Summer Season i.e. from March to May, 2019. Ambient air quality monitoring has been carried out at eight locations during March to May, 2019 and the data submitted indicated: PM<sub>10</sub> (58.3 µg/m<sup>3</sup> to 93.6 µg/m<sup>3</sup>), PM<sub>2.5</sub> (26.5 to 54.5 µg/m<sup>3</sup>), SO<sub>2</sub> (7.0 to 20.6 µg/m<sup>3</sup>) and NO<sub>x</sub> (12.9 to 36.7 µg/m<sup>3</sup>). The results of the modelling study indicates that the maximum increase of GLC for the proposed project is 3.65 µg/m<sup>3</sup> with respect to the PM<sub>10</sub>, 1.51 µg/m<sup>3</sup> with respect to the SO<sub>2</sub> and 0.9 µg/m<sup>3</sup> with respect to the NO<sub>x</sub>.
- 16.9.13 Ground water quality has been monitored in eight locations in the study area and analyzed. pH: 7.35 to 8.02, Total Hardness: 164.9 to 414.8 mg/l, Chlorides: 27.07 to 192.47 mg/l, Fluoride: 0.57 to 0.84 mg/l. Heavy metals are within the limits. Surface water samples were analyzed from four locations. pH: 7.45 to 8.08; DO: 5.2 to 7 mg/l and BOD: 2.4 to 14.0 mg/l. COD from 10.8 to 52.4 mg/l.
- 16.9.14 Noise levels (L<sub>eq</sub>) are in the range of 52.6 to 68.9 dB(A) for day time and 41.4 to 62.6 dB(A) for Night time.
- 16.9.15 The expansion project will be executed in the existing plant premises & additional land (industrial) which is already acquired by the company and thus no R & R is involved.
- 16.9.16 The details of existing and additional solid & hazardous waste generation have been shown in the table below. It has been envisaged that greenbelt has already been developed in an area of 13.41 ha i.e. 33 % of the total plant area. During expansion, additional greenbelt will be developed in an area of 1.88 ha to attenuate the noise levels and trap the dust generated due to the project development activities. Therefore, 15.29 ha i.e. ~ 33.3% of the total plant area (45.903 ha), is being/ will be developed under greenbelt & plantation.

#### **Solid & Hazardous Waste Generation & Management**

Solid waste	Existing (TPD)	Total after Expansion (TPD)	Management
Dolochar	126.0	243	Dolochar is being/will be utilized in AFBC boiler for captive power generation



Solid waste	Existing (TPD)	Total after Expansion (TPD)	Management
			and after expansion it would be managed through the same technique.
Slag	111.0	198	SMS Slag is being used in filling of Low-lying area and in road making and after expansion will be utilized in same way.
Ash & Dust	239.0	350	Fly ash from the Boiler and APCS is being/will be sold to Cement industry and brick manufacturing unit
Ash-Pellet plant	-	20	Ash will be sold to cement manufacturers.

It has been reported that the Consent to Operate from the Uttar Pradesh Pollution Control Board (UPPCB) has been obtained for air vide letter no. H12172/C-6/Air Pollution/121/17/GKP dated 17.11.2017 and valid from 01.01.2018 to 31.12.2019 and for water vide letter no. H12171/C-6/Water Pollution- 121/17/GKP dated 17.11.2017 and valid from 01.01.2018 to 31.12.2019.

The Public hearing of the project was held on 22<sup>nd</sup> August, 2019 at 04:00 pm at plant site under the chairmanship of Shree Rakesh Kumar Shrivastav (Additional District Magistrate City, Gorakhpur) and Shree Pankaj Yadav (Assistant Environmental Engineer, UPPCB, Gorakhpur, UP forexpansion of Integrated Steel Plant; Sponge Iron (from 297000 MTPA to 594000 MTPA), MS Billet (from 330000 MTPA to 653400 MTPA), Captive power (from 53 MW to 80.5 MW) and New Pellet plant establishment 792000 MTPA. The issues raised during public hearing are employment and environmental pollution. An amount of ₹ 452 Lakhs (of total capital cost i.e. ₹. 602.53 Cr) has been earmarked for Enterprise Social Commitment based on public hearing issues.

The capital cost of the project is ₹ 602.53 Cr and the capital cost for environmental protection measures is proposed as ₹ 35.44 Cr. The annual recurring cost towards the environmental protection measures is proposed as ₹ 4 C/annum. The detailed CSR plan has been provided in the EMP in its page No. 197 to 199. The total employment generation from the expansion is 405 persons (Existing 720 persons, Total employment after expansion will be 1125 persons).

About 13.41 ha i.e. ~33% of the existing plant area (40.5 ha) has already been developed under greenbelt & plantation. An additional area of 1.88 ha will be developed under greenbelt & plantation. Therefore, 15.29 ha i.e. ~ 33.3% of the total plant area (45.903 Hectare), is being/ will be developed under greenbelt & plantation. A 10 m wide greenbelt, consisting of at least 3 tiers around plant boundary has been/ will be developed as greenbelt and green cover as per CPCB/ MoEF&CC, New Delhi guidelines. Presently 15026 trees are planted in the existing plant premises and as a part of expansion additionally 21319 trees will be planted. After expansion the density of plantation with the trees will be 2377 trees/ ha.

The proponent has mentioned that there is no court case or violation under EIA Notification to the project or related activity.

The Project Proponent and the accredited Consultant M/s. J.M. EnviroNet Pvt. Ltd. (Serial. No. 88) made presentation.

**Observations of the Committee (EAC meeting held during 21-23<sup>rd</sup> October 2019)**

- 16.9.17 The committee noted that a complaint dated 30.05.2019 against M/s Gallant Ispat Ltd was received in the Ministry related to violation of EC conditions and Consent to Operate and setting up of Joint Inspection Committee by Hon'ble National Green Tribunal (NGT) in the case of Meera Shukla vs Muncipal Corporation, Gorakhpur & Others vide order dated 17.12.2018 in original application No. 116/2014. The Committee examined the complaint.
- 16.9.18 The Committee observed that as per the declaration submitted in the EIA report, the project proponent stated that "there is no litigation pending against the project and/or any direction/ order passed by any Court of law against the project & land in which the project is set up and that for any such litigation whatsoever, the sole responsibilities will be borne by company".
- 16.9.19 However, the Committee noted that a case (Original Application No. 116/2014; Meera Shukla Vs Municipal Corporation, Gorakhpur &Ors.) was filed in Hon'ble National Green Tribunal regarding the contamination of water bodies and ground water, specifically Ramgarh lake, Ami river, Rapti river and Rohani river in and around the District Gorakhpur. In this regard, the Hon'ble Tribunal vide order dated 23/8/2018 constituted a Monitoring Committee. The recommendations of the Monitoring Committee with respect to the existing unit of M/s. Gallant Ispat Limited as narrated in the Tribunal Order dated 17/12/2018 is as below:
- i. M/s Gallant Ispat Ltd (Integrated Steel Plant), Gorakhpur may be saddled with exemplary cost of Rs. Fifty lakhs or more for having failed in following the norms provided by law (supra) while running the industry.
  - ii. M/s Gallant Ispat Ltd (Integrated Steel Plant), Gorakhpur be directed to ensure the compliance of all norms prescribed by law while running the industry within a month so that the citizens of the locality may not suffer any further from variety of problems and health hazards.
  - iii. A team from the Directorate of Medical Health Services, Government of UP may visit M/s Gallant Ispat Ltd (Integrated Steel Plant), Gorakhpur to make a survey of health problems of the citizens residing within 2 kms surrounding area of the industry and take remedial measures.
  - iv. The ground water of 2 kms surrounding area of M/s Gallant (spat Ltd (Integrated Steel Plant), Gorakhpur be tested by Ground Water Department of Government of India to find out the level of contamination, if any, within two months and the U.P. Government may take remedial measures as required.
  - v. M/s Gallant (spat Ltd (Integrated Steel Plant), Gorakhpur be directed to install an ambient air quality monitoring station expeditiously, say within two months.
  - vi. Let the District Level Environmental Impact Assessment Authority as well as the District Level Expert Appraisal Committee constituted as mentioned in 3(A) of the Notification dated 14.09.2006 as amended by Notification dated 15.01.2016 expeditiously within 3 months, if already not constituted.

Further in the order dated 17/12/2018, it is mentioned that “...as regards the issue of taking action under the Water (Prevention and Control of Pollution) Act, 1974 and the Air (Prevention and Control of Pollution) Act, 1981 by way of coercive measures against the industrial units/medical college for violation of statutory provisions and conditions for Consent to Operate, we direct the UPPCB to take appropriate action to ensure compliance and recover damages for the past violations. The amount suggested by the Committee may be treated as a proposal and final amount may be determined after following due procedure within one month. Steps for closure may be considered on merits. A report of compliance in this regard may be furnished to this Tribunal...”

- 16.9.20 In this regard, the Committee asked the PP to provide the present status of aforesaid case. In response to this, PP submitted a letter dated 23/10/2019 of Uttar Pradesh Pollution Control Board (UPPCB) wherein it is stated that UPPCB have sent their report of compliance to Hon’ble Tribunal on 2/05/2019 and 8/07/2019. The matter is further posted for hearing on 9/12/2019. However, no record has been made available by the PP regarding the corrective action taken by them on the recommendations of the Monitoring Committee.

**Recommendations of the Committee (EAC meeting held during 21-23<sup>rd</sup> October 2019)**

- 16.9.21 The Committee after detailed deliberations sought for the following additional information for further consideration of the proposal.
- i. the PP shall furnish explanations regarding the reasons for not disclosing the case details in the final EIA report submitted to the Ministry.
  - ii. the PP shall furnish a comprehensive report regarding various corrective actions, with relevant details taken by them on the recommendations of the Monitoring Committee.

The Committee also requested the Ministry to obtain a status report from UPPCB on the aforesaid matter inter-alia a report regarding the status of compliance by M/s. Gallant Ispat Limited on the recommendations of the Monitoring Committee.

- 16.9.22 The Project Proponent has submitted the reply as below:

*1<sup>st</sup> ADS:* PP shall furnish explanations regarding the reasons for not disclosing the case details in the final EIA report submitted to the Ministry.

**Reply:** It is a matter of fact that a case bearing Original Application No. 116/2014; Meera Shukla Vs Municipal Corporation, Gorakhpur & Ors.) was filed in Hon’ble National Green Tribunal regarding the contamination of water bodies and ground water, specifically Ramgarh lake, Ami river, Rapti river and Rohani river in and around Gorakhpur District wherein Gallant Ispat Limited was not an impleaded party, thus, we have not mentioned the case details in the final EIA report submitted to the Ministry.

*2<sup>nd</sup> ADS:* PP shall furnish a comprehensive report regarding various corrective actions, with relevant details taken by them on the recommendations of the Monitoring Committee.

**Reply:** UPPCB issued a letter on 31.12.2018 for clarification regarding violation of the environmental norms as per NGT order dated 17.12.2018. The company submitted an action taken report on 17.01.2019. After Final technical presentation (for EC) of our

project in front of EAC, MoEF&CC, New Delhi we again approached UPPCB to intimate us the status of our action taken report. The company again submitted the action taken report on 08.11.2019 and thereafter UPPCB visited our plant for the verification of the submitted action taken report on 11.11.2019. During the visit it was found that the reasons for which the letter was issued to GIL, were resolved. Thus, the letter was revoked on 23.11.2019. Thereafter, renewed Consent to Operate was obtained from U.P.C.B. under Section 21/22 of the Air (Prevention & Control of Pollution) Act, 1981 vide letter no. 75100/UPPCB/Gorakhpur(UPPCBRO)/CTO/air/GORAKHPUR/2019 on 11.12.2019 and valid from 01.01.2020 to 31.12.2021 and Consent to Operate for discharge of Effluent under Section 25/26 of the Water (Prevention & Control) of Pollution Act, 1974 75090/ UPPCB/ Gorakhpur (UPPCBRO) / CTO /water/GORAKHPUR /2019 on 02.12.2019 and valid from 01.01.2020 to 31.12.2021.

The recommendations of the monitoring committee and the corrective actions taken by PP are as below:-

S. No.	Recommendation in NGT order	Status as on date
1	M/s Gallant Ispat Ltd (Integrated Steel Plant), Gorakhpur may be saddled with exemplary cost of Rs. Fifty lakhs or more for having failed in following the norms provided by law (supra) while running the industry.	As per letter from UPPCB to MoEFCC, New Delhi dated 01.01.2020 an environmental compensation of Rupees 49.5 lakhs has been filed in the Hon'ble Tribunal vide its letter No. H 34466/C-6/Normal-454/OA No. 116/2014/2019 dated 08.07.2019. No order has yet been passed on the said proposal by the Honorable Tribunal. Till date, the company has not been directed to pay any fine. The company has already submitted an undertaking to EAC to pay the fine as imposed by the concerned authority.
2.	M/s Gallant Ispat Ltd. (Integrated Steel Plant), Gorakhpur be directed to ensure the compliance of all norms prescribed by law while running the industry within a month so that the citizens of the locality may not suffer any further from variety of problems and health hazards.	The company is complying with all the norms prescribed by the law while running the industry. UPPCB visited plant for the verification of the submitted action taken report on 11.11.2019. During the visit it was found that the reasons for which the notice was issued to GIL, were resolved. Therefore, the notice was revoked on 23.11.2019 and renewed Consents issued on dated 11.12.2019 under both the Air (P&CP) Act,1981 and the Water(P&CP) Act,1974 with validity from 01.01.2020 to 31.12.2021. Also, during the visit of the Regional Officer, MoEFCC, Lucknow on 4.09.2019 for issuance of Certified Compliance Report for the conditions stipulated in EC

S. No.	Recommendation in NGT order	Status as on date
		the company was found complying with all the conditions as stipulated in the EC and the RO, MoEFCC, Lucknow issued the Certified Compliance Report on 19.09.2019. The company ensures to comply with all the norms prescribed by the law while running the industry in future as well.
3.	A team from the Directorate of Medical Health Services, Government of UP may visit M/s Gallant Ispat Ltd (Integrated Steel Plant), Gorakhpur to make a survey of health problems of the citizens residing within 2 kms surrounding area of the industry and take remedial measures.	In the letter from UPPCB to MoEF&CC, New Delhi dated 01.01.2020, it is mentioned that the health test of the local residents were conducted and the ground water quality was also examined. As per the report, all the parameters were found conforming with the standards prescribed by the Board.
4.	The ground water of 2 kms surrounding area of M/s Gallant Ispat Ltd (Integrated Steel Plant), Gorakhpur be tested by Ground Water Department of Government of India to find out the level of contamination, if any, within two months and the U.P. Government may take remedial measures as required.	
5.	M/s Gallant Ispat Ltd (Integrated Steel Plant), Gorakhpur be directed to install an ambient air quality monitoring station expeditiously, say within two months.	Four ambient air monitoring stations are installed in the plant premises – one at the main gate, one at the colony, one at the north east boundary and fourth at south west corner. Ambient air quality is regularly monitored by the company and report is submitted to UPPCB on monthly basis.

*The points in the order issued by NGT and the status of corrective active taken by GIL as on date is detailed below: -*

S. No.	Point as in NGT	Status of Corrective Action as on date
1	The team found that there was an open channel for discharging effluent near a railway track which was going into water body and ultimately joining Ami river. Unit was not operating as ZLD as required in terms of the	As on date the company is operating completely on Zero Liquid Discharge. No wastewater is discharged from plant. Wastewater generated from process is treated in neutralization pit and after treatment 100% recycling is done. Domestic wastewater is treated in sewage

S. No.	Point as in NGT	Status of Corrective Action as on date
	Consent to Operate.	treatment plant and water is used for greenbelt development.
2	Huge amount fugitive emissions were observed from induction furnace plant.	In SMS unit, induction furnaces are provided with moveable hood and Bag filters. Bag filters limit the particulate emission from the stack within the permissible limit. They are provided at different locations to control fugitive emission within premises.
3	Disposal of iron slag was not satisfactory.	Slag from SMS is processed into magnetic and non-magnetic particles. Magnetic particles are reused in SMS and non-magnetic particles are used as sand in construction activities.
4	Ash was not being disposed of scientifically.	Fly ash is stored in silo and supplied for cement/brick manufacturers. Transportation of Fly ash is done by closed bulkers and loading & unloading is done through pneumatic system. The company has already signed MoUs with Ashok Traders, M/s Arun Kumar Singh, R.V. Trading Company, Rishi Ji Sales Corporation & M/s Agrawal Associates for utilization of fly ash.
5	Green belt was not developed as per norms.	13.41 ha i.e. ~33% of the existing plant area (40.5 ha) is developed under greenbelt & plantation. At present, total numbers of trees planted are 15026 and further 10000 numbers of trees are proposed to be planted within plant.
6	Ambient air quality was not satisfactory.	Four ambient air monitoring stations are installed in the plant premises – one at the main gate, one at the colony, one at the north east boundary and fourth at south west corner. Ambient air quality is regularly monitored by the company and report is submitted to UPPCB on monthly basis.
7	Citizens in the vicinity complained that root tops are covered with fly ash causing bronchitis, asthma, etc.	All stacks are connected to pollution control equipment viz., bag filter & ESP. Stacks in Power Plant & Sponge Iron plants are connected to SPCB/ CPCB server and all parameters are within norms. Fly ash is stored in silo and supplied for cement/ brick manufacturing.
8	There was noise pollution.	Noise producing equipment and machineries undergo proper maintenance

S. No.	Point as in NGT	Status of Corrective Action as on date
		for oiling, greasing on regular basis. Acoustic enclosures in the turbines are provided. Greenbelt also helps to attenuate the noise level.
9	The Committee recommends recovery of Rs. 50 Lakhs on "Polluter Pays" principle as cost for damage to the environment apart from requisite compliance.	<p>Committee constituted by NGT recommended a fine of Rs. 50 lakh on Gallantt Ispat Ltd on the basis of Polluter Pays Principal. NGT directed UPPCB to take into consideration the recommendation of the above-mentioned committee to determine whether any fine has to be paid by Gallantt Ispat Ltd. Consequently, UPPCB issued notice to Gallant Industries, asking why should fine be not levied on Gallantt Ispat Ltd pursuant to the recommendations of the committee constituted by NGT. Gallant has given its reply to the notice issued by UPPCB stating that it is fully compliant with the applicable environmental norms and that no fine is leviable on it.</p> <p>UPPCB, Lucknow recommended Environmental Compensation of Rs. 49.50 lacs vide their letter 34466 dated 08.07.2019 which is pending before Hon'ble NGT for final decision.</p>

*3<sup>rd</sup> ADS:* Committee also requested the Ministry to obtain a status report from UPPCB on the aforesaid matter inter-alia a report regarding the status of compliance by M/s. Gallantt Ispat Limited on the recommendations of the Monitoring Committee.

**Reply:** On the recommendations of EAC, MoEF&CC, New Delhi wrote a letter dated 12.12.2019 to Member Secretary, UPPCB to obtain a status report from them on the NGT matter and also regarding the status of compliance by GIL on the recommendation of the monitoring committee. UPPCB, Lucknow has sent a letter to your good office vide reference letter no. H45780/C-6/NOC/304/LokSunwai/20 dated 01.01.2020.

16.9.23 In the meanwhile, the Ministry has received a complaint against M/s Gallantt Ispat Ltd vide letter dated 20.01.2020 which was put before the Committee.

**Observations of the Committee (16-17<sup>th</sup> January 2020)**

The Committee noted that reply to the ADS furnished by the project proponent is satisfactory. However, the Committee felt that the written response from project proponent to the issues raised in the complaint dated 09.01.2020 received by the Ministry is not satisfactory. This included, inter-alia, the operations of rerolling mill, number of trees cut, requisite statutory permissions for tree cuttings, if any.

**Recommendations of the Committee (16-17<sup>th</sup> January 2020)**

16.9.24 In view of the foregoing and after detailed deliberations, the Committee deferred the

consideration of the proposal cited above and asked the proponent to submit the response to the issues raised in the complaint cited above for further consideration of the proposal.

16.9.25 The Project Proponent replied to the issues raised in the complaint as below:

*1<sup>st</sup> Point: Destruction of already developed greenbelt, cutting of trees in plant premises, inadequate greenbelt area & commencement of construction activity for expansion without obtaining EC.*

Reply: Presently, 13.41 ha i.e. ~33% of the existing plant area (40.5 ha) has already been developed under greenbelt & plantation. As on date, total numbers of trees planted are 15026 in the existing plant premises. RO, MoEF&CC, Lucknow has also mentioned in the Certified Compliance Report that 33% area is already under greenbelt & plantation.

An additional area of 1.88 ha will be developed under greenbelt & plantation. Therefore, 15.29 ha i.e. ~ 33.3% of the total plant area (45.903 Hectare) post expansion, is being/ will be developed under greenbelt & plantation as per CPCB/MoEF&CC guidelines. Presently 15026 trees are planted in the existing plant premises and as part of the expansion and minutes of meeting of 15<sup>th</sup> REAC, additionally 21319 trees will be planted. After expansion the density of tree plantation will be 2377 trees/ ha.

There is a Gazette of Govt. of U.P. dated 31<sup>st</sup> Oct., 2017 and 7<sup>th</sup> Jan., 2020 regarding cutting trees on the individual, cultivated and uncultivated holding which states for every tree cut, ten trees have to be planted. 92 numbers of trees were cut and against this 1227 numbers of trees (like Cassiya Siamea, Neem, Sheesham, Karanj, Arjun, Poplar, Shirish, Subabul, Ficus Black) have been planted.

The company has not started any expansion activity (as mentioned in current proposal).

**2<sup>nd</sup> Point: Operating steel rolling mill with reheating furnace of 3,30,000 TPA for more than 10 years without clearance from Ministry.**

Reply: Company obtained NoC for 1,44,000 TPA re rolling mill in 2007 from UPPCB as a separate entity and started operations from 2009. NoC for expanded capacity of 3,30,000 TPA was obtained in 2016 and operations were started in 2017 after obtaining CTO.

Consent to Operate issued by UPPCB for the below mentioned 3 units within the premises of complex of Gallantt Ispat Limited: -

- Gallantt Ispat Limited - Unit Re- Rolling Mill
- Gallantt Ispat Limited - Unit Roller Flour Mill
- Gallantt Ispat Limited – Integrated Steel Plant

Thus, they are three separate identities with different nomenclature, separate boundaries and separate Consents. The details are tabulated in table below: -



Name of Unit	Capacity	Operating on the basis of	CTO from UPPCB (for Air & Water)
Gallant Ispat Limited (Unit Re-Rolling Mill)	1,44,000 TPA	NoC from UPPCB vide letter no. 2412/NoC-21/2007/4 dated 29-12-2007	21.04.2009
	3,30,000 TPA	NoC from UPPCB vide letter no. 1364/NoC-270/2016/6 dated 30.12.2016	7.12.2017 and latest 28.11.2019 valid till 31/12/2021
Gallant Ispat Limited - Unit Roller Flour Mill	600 TPD	NoC from UPPCB vide letter no. 705/NoC-41/08/6 dated 31.03.2008	10.12.2019 valid till 31.12.2024
Gallant Ispat Limited – Integrated Steel Plant	Sponge Iron Plant - 198,000 TPA, Steel Melting Shop (Induction Furnace) - 216000 TPA, Captive Power Plant -24 MW	EC from MoEFCC, New Delhi vide letter no. J-11011/229/2008-IA II (I) dated 2 <sup>nd</sup> February, 2009	Latest Consent on 11.12.2019 and valid from 01.01.2020 to 31.12.2021
	Sponge Iron- 297000 TPA, M.S Billets - 330000 TPA and Captive power plant - 53 MW	EC from MoEFCC, New Delhi vide letter no. J-11011/229/2008-IAII (I) dated 18 <sup>th</sup> October, 2017	

Company obtained statutory permission for rolling mill and is complying all conditions stipulated in the CTO.

The recent order from Honorable NGT (OA No. 55/209(WZ) dated 16.01.2020) regarding regularization of rolling mills, “14.21.20, S. No. 3 reads *“In order to address to instant and similar cases where such re rolling/cold rolling units are established or operating with a CTE/CTO from the concerned State Pollution Control Boards, the Ministry may consider directing the State Pollution Control Boards to get a list of all such cases and take further quick*

*actions so that they apply for EC and get covered by the EIA notification 2006. Since, these units are established or operating under the CTEs/CTOs obtained from a statutory authority i.e. the respective State Pollution Control Boards, a period of one year may be allowed for this recommended conversion to EC. This will also ensure that the units remain in operation for the allowed period and closures, unemployment and related social issues/unrests are avoided. During this period of one year, they will have to follow all the conditions imposed under the CTE/CTO.”*

With reference to the above, the company will also follow the directives for the recommended conversion of NoC/ CTO of rolling mill into EC.

**03<sup>rd</sup> Point: The violation Proceeding against the company going on before the Hon’ble NGT in application no. 116/2014 is still pending and Hon’ble NGT has yet not accepted the compliance report.**

Reply: Earlier ADS regarding the same was generated by MoEFCC, New Delhi which was replied by us on 04.01.2020. The same was discussed in 15<sup>th</sup> EAC meeting on 16<sup>th</sup> Jan., 2020. As per Minutes of Meeting displayed on the portal, “the Committee noted that reply to the ADS furnished by the project proponent was satisfactory”.

#### **Observations and Recommendations of the Committee**

- 16.9.26 The committee recommended to integrate the existing rolling mill with main plant and advised Project Proponent to revise the EIA report and resubmit the proposal. The Project Proponent may also adhere to the directions given in the order passed by NGT on 16/01/2020 in Original Application No. 55 of 2019.
- 16.10 Expansion of Total Production Capacity and augmentation of integrating melting and rolling facility (from 54,000 TPA to 92,500 TPA) by **M/s. Kundlas Loh Udyog** located at Village Balyana, Post Barotiwala, Tehsil Baddi, **District Solan, Himachal Pradesh** [Online proposal No. IA/HP/IND/87362/2017; MoEF&CC File No. J-11011/350/2017-IA.II(I)] - **Reconsideration for grant of Environmental Clearance** – regarding.
- 16.10.1 The project was considered in the meetings of Re-constituted EAC (Industry – 1) held during 27– 29<sup>th</sup> March, 2019, 30<sup>th</sup> May’2019 and 27-29<sup>th</sup> November 2019. The relevant minutes are given below:

M/s. Kundlas Loh Udyog has made an online application vide proposal no. IA/HP/IND/87362/2017 dated 6<sup>th</sup> February, 2019 along with copies of EIA/EMP report and Form – 2 seeking environmental clearance under the provisions of the EIA Notification, 2006 for the project mentioned above. The proposed project activity is listed at Sl. No. 3(a) Metallurgical Industries (Ferrous and Non-ferrous) under Category “B” EIA Notification, 2006. However, due to the applicability of general condition i.e., interstate boundary of Haryana and Himachal Pradesh at distance of 3.16 Km in west direction, the project is being appraised at the Central level as Category ‘A’.

**Proceedings of the meeting held on 29-31<sup>st</sup> May, 2019**

- 16.10.2 The application of M/s. Kundlas Loh Udyog located at Vill. Baliana, Tehsil Baddi, Distt. Solan, Himachal Pradesh was initially received in the Ministry on 30<sup>th</sup> June 2017 for obtaining Terms of Reference (ToR) as per EIA Notification, 2006. The project was appraised by the Expert Appraisal Committee (Industry) [EAC (I)] during 20<sup>th</sup> meeting on 10<sup>th</sup> to 12<sup>th</sup> July, 2017 and prescribed ToRs to the project for undertaking detailed EIA study for obtaining environmental clearance. Accordingly, the Ministry of Environment, Forest and Climate Change had prescribed ToRs to the project on 19<sup>th</sup> September 2017 vide F.No. J-11011/350/2017-IA-II(I).
- 16.10.3 Based on the ToRs prescribed to the project, the project proponent submitted an application for environmental clearance to the Ministry online on 6th February, 2019 vide Online Application No. IA/HP/IND/87362/2017.
- 16.10.4 The project of M/s Kundlas Loh Udyog located at Vill. Baliana, Tehsil Baddi, Distt. Solan, Himachal Pradesh State is for expansion and augmentation of melting and rolling facility from 54000 TPA to 92500 TPA and replacement of existing Induction Furnace having 6 MT/heat capacity with 12 MT/heat capacity and addition of one more Induction furnace having 12 MT/heat capacity. Total capacity of two Induction furnaces proposed is 24 MT/heat.
- 16.10.5 The total land required for the project is 0.779 ha. No forest land involved. The entire land has been acquired for the project. It has been reported that no water body/ water body exist around the project and modification/diversion in the existing natural drainage pattern at any stage has not been proposed.
- 16.10.6 The topography of the area is mainly plain and reported to lies between 30°54'56.38"N to 30°55'0.78"N Latitude and 76°49'58.50"E to 76°50'04.13"E Longitude in Survey of India topo sheet No. H43K13 at an elevation of 448 m AMSL. The ground water table reported to ranges between 3.02 to 27.57 meter below the land surface during the post-monsoon season and 5.01 to 28.76 meter below the land surface during the pre-monsoon season.
- 16.10.7 No National Park/Wildlife Sanctuary/Biosphere Reserve/Tiger 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. No Schedule-I species is found in the 10 km radius of the project site.
- 16.10.8 The targeted production capacity of the Billets/Ingots is 288 TPD and MS rolled product is 280 TPD. MS Scrap, Ferro Alloys & MS Billets will be used as basic raw material to manufacture TMT Bar, Garter & Angels. Raw materials will be purchased from open market and transported to site through trucks.
- 16.10.9 The total fresh water requirement of the project is estimated as 65 m<sup>3</sup>/day, which will be sourced from the Borewell. Water requirement will be met through HP Ground Water Authority, Govt. of Himachal Pradesh). Application submitted on dated 31.05.2017.

- 16.10.10 The power requirement of the project is estimated to be 11000 KVA; the permission has been obtained from the Himachal Pradesh State Electricity Board (HPSEB).
- 16.10.11 Baseline Environmental Studies were carried out during Post-Monsoon season. Ambient air quality monitoring at eight locations during 1<sup>st</sup> October, 2017 to 31<sup>st</sup> December, 2017 indicated: PM<sub>10</sub> (60.59 µg/m<sup>3</sup> to 87.57 µg/m<sup>3</sup>), PM<sub>2.5</sub> (30.02 to 58.93 µg/m<sup>3</sup>), SO<sub>2</sub> (6.25 to 16.15 µg/m<sup>3</sup>) and NO<sub>x</sub> (17.55 to 33.34 µg/m<sup>3</sup>). The results of the modeling study indicate that the maximum increase of GLC for the proposed project is just 1.23 µg/m<sup>3</sup> with respect to the PM<sub>10</sub>.
- 16.10.12 Ground water quality has been monitored in 8 locations in the study area and analyzed. pH: 7.41 to 7.84, Total Hardness: 190.87 to 239.81 mg/L, Chlorides: 25.48 to 33.98 mg/L, Fluoride: 0.27 to 0.78 mg/L. Heavy metals are within the limits. Surface water samples were analyzed from 8 locations. pH: 7.7 to 7.85; DO: 4.5 to 6.5 mg/L and BOD: 3.28 to 28.07 mg/l, COD: 20.74 to 116.14 mg/L.
- 16.10.13 Noise levels are in the range of 58.3 to 65.03 dB(A) for day time and 50.61 to 58.4 dB(A) for night time.
- 16.10.14 No R&R is involved. It has been envisaged that no family is to be rehabilitated.
- 16.10.15 It has been reported that a total of 21 MTPD of Slag, 11 MTPD of Mill Scale and 0.8 MTPD of APCD dust will be generated due to the project, out of which mill scale waste will be sold to the market, slag will send to paver industry for interlock block making after metal extraction and APCD waste will be send to TSDF site for proper disposal. Zinc metal recovery from APCD dust is under consideration for implementation. It has been envisaged that an area of 0.257 ha. will be developed as green belt around the project site to attenuate the noise levels and trap the dust generated due to the project development activities.
- 16.10.16 It has been reported that the Consent to Operate from the Himachal Pradesh State Pollution Control Board obtained vide Certificate No. HSPCB/PCB-ID15312/8069-71 dated 23/09/2018 and consent is valid up to 31/03/2021.
- 16.10.17 The Public hearing of the project was held on 04.07.2018 at Project site under the chairmanship of ADM, Solan District for production of 288 TPD of Billets and 280 TPD of MS rolled products (TMT Bar, Girders & Angels etc). The issues raised during public hearing are employment, pollution control and Providing Health Facility. The issues raised during public hearing and response of the project proponent with action plan are tabulated below:

S. No	Name of the person	Issues raised	Action Plan		
			Commitment	Time Frame	Budget
1	Sh. Balbir Thakur Block Chairman Doon Distt.	Smoke emission from these kinds of iron and steel units.	Smoke generated from induction furnace shall be passed through Air pollution control devices to	Implemented parallel with implementation of the proposed project.	<b>Rs. 40 Lakhs</b> is earmarked for APCD and Rs. 4 Lakhs/

S. No	Name of the person	Issues raised	Action Plan		
			Commitment	Time Frame	Budget
	Solan	emphasized upon further improvisation in the air pollution control devices	prevent any adverse impact on the environment; he informed that pulse jet bag filter is proposed as APCD, its efficiency 99.9%.  APCD dust having some concentration of Zinc and same will be sold to authorized recycler for zinc recovery.  Monitoring and analysis of smoke emission will be done regularly.		annum as recurring cost
2	Dr. R N Thakur Deputy Director Agriculture, Distt. Solan	He said that Soil texture analysis, Bulk density etc. has been got analyzed from which laboratory?  He also asked the consultant regarding the source of topographical features mentioned in the EIA Report	The analysis has been done by Shivalik Solid Waste Management laboratory at Nalagarh which is NABL Accredited and MoEF&CC recognized Laboratory.  Representative of Kundlas Loh udyog informed that the requisite data was procured from the geological survey of India, Chandigarh and satellite image obtained from Hyderabad.	-----	-----

S. No	Name of the person	Issues raised	Action Plan		
			Commitment	Time Frame	Budget
3	Dr. Sobnath, Department of Fisheries, Distt. Solan	He asked consultant regarding the provision for the treatment for Liquid and solid waste to be generated from expansion activities and its impact on the local rivers and other water bodies.	<p>No liquid waste generated from the process as whole water shall be recirculated in closed loop.</p> <p>Proper treatment of domestic waste water will be done which will be treated in STP (8 KLD) and used within the premises for plantation.</p> <p>As far as solid waste is concerned there will be two types of solid waste. i.e. Slag (Non-Hazardous) and APCD dust (Hazardous). The crushed slag after extraction of metallic contents and in combination with other constituent materials shall be used for pebbles manufacturing and APCD dust shall be disposed to TSDF facility.</p>	Implemented parallel with implementation of the proposed project.	<p>₹ 4 Lakhs is earmarked for STP and Rs. 1 Lakhs/ annum as recurring cost</p> <p>₹ 1.00 Lakhs is earmarked in EMP Budget</p>
4	h. Ramesh Verma, Joint Director, Deptt. Of Industries, Baddi	Clarification regarding the enhanced power load and proposed production capacities.	<p>Power load enhanced from 4210.53 KVA to 11000 KVA and permission obtained from HPSEB.</p> <p>The existing production capacity is 54000</p>	-----	-----

S. No	Name of the person	Issues raised	Action Plan		
			Commitment	Time Frame	Budget
		the project proponent to apply and obtained all requisite permission after obtaining Environment Clearance	MTPA (rolled product) but unit being operated with a single induction furnace with capacity 20000 MTPA (billets) which will be enhanced to 92000 MTPA (billets and rolled products)		
5	Sh. Vivek Chandel, ADM cum Chairman	The chairman raised the issue regarding plantation done under Pollution Abating Plantation Abhiyan "PAPA" Within and outside the premises, He advised the project proponent to plant more trees which finally result into a model green buffer around the unit. HE also asked about the mechanism for use of slag in brick manufacturing and to ensure procedure to be adopted its use by brick kiln	Project proponent informed that 150 nos. plants were planted under Pollution Abating Plantation Abhiyan "PAPA" and assured that more plant will be carried out. 33 % of the total plant area will be developed as a Greenbelt. Greenbelt development programme also organized in nearby village's school and gram panchayat land. The brick manufacturing shall be executed after adopting the technology approved and permitted by State Pollution Control Board. Approx. 3610.47 m <sup>3</sup> /year will be	6 months  8-10 months  Implemented parallel with implementation of the proposed project.	₹ 2.50 Lakhs is earmarked in EMP Budget  Rs. 4.00 Lakhs is earmarked in CER Budget  Rs. 3.00 Lakhs is earmarked in EMP Budget

S. No	Name of the person	Issues raised	Action Plan		
			Commitment	Time Frame	Budget
		industries. He also raised the issue regarding Rain Water Harvesting to be implemented by the project proponent	harvested inside the plant premises and RWH pit (12mx10mx20m) will developed for storage of rain water.		
6	Pradhan Gram Panchyat	He welcomed everyone in the Public Hearing and said that they don't have any objection w.r.t expansion proposal however he emphasized that the plant shall be operated in the same manner as being run in the past beside resulting into no adverse impact on environment.  He requested project proponent to contribute in C.S.R activities as usual.	He reiterated that they shall be bound to adhere pollution control norms beside their contribution to C.S.R activities in similar ways as implemented in the past.	After complete implementation of proposed project	2% from profit make by industry.

16.10.18 An amount of ₹13.5 lakhs (more than 1% of Project cost) has been earmarked for Corporate Enterprises Responsibility based on public hearing issues. The details of CER proposed are as follows:



S. No.	Description	Amount to be spent	
		First Year ₹ in Lakhs	Second Year ₹ in Lakhs
1	<b>Employment</b> (Vocational Training for Skill development for self-employment like Sewing, Pickle making, Craft and in-plant training for welding, fabrication and maintenance of appliances for youth of nearby villages)	0.60	0.40
2	<b>Greenbelt Development</b> (Plantation in and around the project site, nearby villages and schools )	2.50	1.50
3	<b>Health Camp</b> (Health, Eye etc. check up camp will be organized for villagers )	0.90	0.60
4	<b>Educational Facility</b> (Distribution of School dress, books, Furniture, water cooler, renovation of toilets in schools etc.)	2.50	1.50
5	<b>Community Development</b> (Rain water harvesting structure & maintenance of street light)	2.00	1.00
<b>Sub Total</b>		<b>8.50</b>	<b>5.00</b>
<b>Total</b>		<b>Rs. 13.5</b>	

16.10.19 The capital cost of the project is ₹ 1019.75 Lakh and the capital cost for environmental protection measures is proposed as ₹ 56 Lakhs. The annual recurring cost towards the environmental protection measures is proposed as ₹ 7.50 Lakhs. The employment generation from the proposed project / expansion is 321. The details of capital cost for environmental protection measures and annual recurring cost towards the environmental management is as follows:

S.No	Title	Capital Cost ₹ Lacs	Recurring Cost Rs. Lacs (Annum)
1	Air Pollution Control	40.0	4.0
2.	Water Pollution Control/ sewage Treatment Plant	2.0	1.0
3.	Noise Pollution Control (Including cost of Landscaping, Green Belt)	5.0	1.0
4.	Solid Waste Management	1.0	00
5.	Environment Monitoring and Management (Including Establishment of Laboratory)	2.0	0.5
6.	RWH	3.0	0.50

7.	Miscellaneous (Appointment of Consultants, occupational health & safety measure)	3.0	1.0
	<b>Total</b>	<b>56.00</b>	<b>8.00</b>

16.10.20 Greenbelt will be developed in 0.257 ha which is about 33 % of the total acquired area. A 10 m wide greenbelt, consisting of at least two tiers around plant boundary will be developed as greenbelt and green cover as per CPCB/MoEF&CC, New Delhi guidelines. Local and native species will be planted with a density of 1500 trees per hectare. Total no. of 500 saplings will be planted and nurtured in 0.257 hectares in 5 years.

16.10.21 The proponent has mentioned that there is no court case or violation under EIA Notification to the project or related activity.

16.10.22 Name of the consultant: M/s. Shivalik Solid Waste Management Limited, Zirakpur [S.No. 138, List of QCI Accredited Consultant Organizations (Alphabetically) Rev. 74, 07<sup>th</sup> March 2019].

16.10.23 The project was considered in the 5<sup>th</sup> meeting of Re-constituted EAC (Industry – 1) held on 27– 29<sup>th</sup> March, 2019 at item no. 5.1. There were certain observations were made by the EAC on the proposed Project.

- i. The EIA/EMP report submitted by the project proponent is inadequate and not as per the QCI/NABET norms. Further, permission from the Competent Authority for ground water extraction and power supply has not been obtained.
- ii. All quantities related to raw material, utilities, products and solid waste should be in same unit, i.e., tons/annum.
- iii. Detailed plan for rainwater harvesting should be furnished.
- iv. Explore the feasibility of water withdrawal from nearby river and submit action plan accordingly.
- v. HIRA is not project specific.
- vi. The existing re-heating furnace shall be decommissioned and there will be no change in caster two numbers and one number rolling mills
- vii. EIA report should be recast as per the Appendix-III of EIA Notification 2006.
- viii. After detailed deliberations, the committee, for want of aforesaid clarifications / documents, returned the proposal in the present form.

16.10.24 Project Proponent submitted Reply to the above observations to MoEF&CC on 06.05.2019.

Sr. No	Observation	Reply
1.	The EIA/EMP report submitted by the project proponent is inadequate and not as per the	Complied as per NABET norms. An application for water withdrawal permission for existing borewell is submitted as per CGWA Public Notice dated

Sr. No	Observation	Reply
	QCI/NABET norms. Further, permission from the Competent Authority for ground water extraction and power supply has not been obtained	14.11.2018, and also for expansion has been submitted to Himachal Pradesh Ground water Authority, I&PH (Irrigation & Public Health) department on 31.05.2017 and the application is under process. A latest communication about site inspection report from I&PH Department has been received vide letter No. 1946 dated 06.04.2019 and application still under process for grant the water permission (all communication letter with IP&H department). Extension of Existing Power Load of 4442 KVA to 7400 KVA has been granted in favour of M/s KundlasLoh Udyog by HPSEB vide letter No. 3108 dated 26.05.2018 and an application has been submitted to HPSEB for remaining power load which is under processing.
2.	All quantities related to raw material, utilities, products and solid waste should be in same unit, i.e., tons/annum.	All quantities are given in same unit and incorporated in EIA report.
3.	Detailed plan for rainwater harvesting should be furnished.	The expected total rainwater available will be around 3610.47 m <sup>3</sup> /year and same will be stored in a Pit of size 12mX10mX20m. Detailed Plan for rainwater harvesting has been prepared and submitted.
4.	Explore the feasibility of water withdrawal from nearby river and submit action plan Accordingly.	The water withdrawal from nearby river is not possible as the nearest river Sirsa is flowing at distance of 4 km in the east direction and is a seasonal river. Therefore, water is not available for round the year.
5.	HIRA is not project specific.	Site Specific HIRA is prepared and included in the EIA Report.
6.	The existing re-heating furnace shall be decommissioned and there will be no change in caster two numbers and one number rolling mill.	Noted & Complied. In this regard, an undertaking was submitted by the project proponent.
7.	EIA report should be recast as per the Appendix-III of EIA Notification 2006	Complied

**Observations of the Committee (7<sup>th</sup> meeting held during 29-31<sup>st</sup> May 2019):**

16.10.25 Permission for abstraction of ground water is yet to be obtained by the Project Proponent. There is no mention of Monitoring of quantum of rainwater to be harvested.

**Recommendations of the Committee (7<sup>th</sup> meeting held during 29-31<sup>st</sup> May 2019):**

16.10.26 After detailed deliberations, the Committee sought following additional information for further consideration of the proposal.

- i. The project proponent shall submit permission for withdrawal of ground water from CGWA/CGWB/concerned Authority.
- ii. Action plan to undertake rainwater harvesting and recharge, and the quantum of water so channelized shall be more than the water consumption in the project area.
- iii. Monitoring of rainwater harvesting/recharging performance shall be done by the PP using standard methodology.
- iv. Action plan to maintain the Stack emissions below 30 mg/Nm<sup>3</sup>.
- v. Project proponent shall confirm that no reheating furnace will be installed, and 100% hot charging process shall be adopted.

16.10.27 Reply of the observations were submitted to MoEF& CC on 17.10.2019. Now, the case is being reconsidered for appraisal in the 13<sup>th</sup> meeting of Re-constituted EAC (Industry – 1) on 27<sup>th</sup> Nov,2019 and point-wise reply of the observations are as follows:

S.No.	Query	Reply
1.	The project proponent shall submit permission for withdrawal of ground water from CGWA/ CGWB/ concerned Authority.	Proponent has obtained water permission from I&PH Department <i>vide</i> letter no. IPH-SE-P & I-II-EE-GWA/2019-20: 676-79 dated 21.09.2019. For this, PP has submitted an Affidavit complying the above said condition, after obtaining Environmental clearance (EC).
2.	Action plan to undertake rainwater harvesting and recharge, and the quantum of water so channelized shall be more than the water consumption in the project area.	Action Plan for Rain water recharging & harvesting has been submitted.
3.	Monitoring of rainwater harvesting/ recharging performance shall be done by the PP using standard methodology.	Agreed by the PP

S.No.	Query	Reply
4.	Action plan to maintain the Stack emissions below 30 mg/Nm <sup>3</sup> .	An action plan to maintain Stack emissions below 30 mg/Nm <sup>3</sup> was submitted.
5.	Project proponent shall confirm that no reheating furnace will be installed, and 100% hot charging process shall be adopted.	An Affidavit to this effect has been submitted.

**Observations of the Committee (13<sup>th</sup> meeting held during 27-29<sup>th</sup> November 2019):**

- i. Reply to the ADS for ground water permission is not acceptable.
- ii. The rain water harvesting plan needs to be improved.
- iii. Space provided for the green belt development is less than 33% of the plant area.
- iv. Cost earmarked towards CER related activity is not as per the O.M. of MoEFCC dated 1.5.2018.

The committee felt that quality of the EIA report presented by Shivalik Solid Waste Management Limited is very poor. Earlier also, EAC has raised concern on similar issue with the same consultant. Therefore, EAC advised MoEF&CC to refer the matter to QCI/NABET to issue warning to consultant and ask him to improve the quality of reports in future.

**Recommendations of the Committee (13<sup>th</sup> meeting held during 27-29<sup>th</sup> November 2019):**

16.10.28 After detailed deliberations, the Committee deferred the consideration of the proposal and sought ADS on the aforesaid points. Further, the Committee observed that the quality of EIA report was poor and this kind of reports lead to wastage of time for the Committee as well as the project proponent. Therefore, the Committee also recommended that the MoEF&CC may write to QCI/NABET to issue warning to consultant and ask him to improve the quality of reports in future.

16.10.29 Reply of the observations was submitted by the Project Proponent to MoEF&CC on 07.01.2020 as given below.

S. No.	Observation	Reply
1	Reply to the ADS for ground water permission is not acceptable	Proponent has obtained water permission from I&PH Department (State Water Department) vide letter no. IPH-SE-P & I-II-EEGWA/2019-20: 676-79 dated 21.09.2019.  Water Permission letter is enclosed as <b>Annexure 1.</b>
2	The rain water harvesting plan needs to	The total groundwater utilized by the project annually is 21450m <sup>3</sup> /year i.e. 65m <sup>3</sup> /day and

S. No.	Observation	Reply
	be improved	by adoption of pond, the project proponent may recharge almost 29951.98m <sup>3</sup> /year (Proposed Pond + inside Plant) of ground water annually which is approx. 139.63% of the ground water utilized by the project.  Detailed Rainwater Harvesting and recharging plan is enclosed as <b>Annexure 2.</b>
3	Space provided for the green belt development is less than 33% of the plant area.	The total area of factory is 7789.41 sqm and 2570.51 sqm green areas (33 % of total factory area) will be developed. As per MoEF norm of 80 sqm of plot area per tree about <b>97</b> trees are required and about <b>353</b> trees will be planted in the greenbelt including all around the factory boundary and inside the plant premises. Selection of the plant species would be done on the basis of their adaptability to the existing geographical conditions and the vegetation composition of the forest type of the region earlier found or currently observed.  Detailed Greenbelt development plan is enclosed as <b>Annexure 3.</b>
4	Cost earmarked towards CER related activity is not as per the O.M. of MoEFCC dated 1.5.2018	This project is Brownfield Project and Total project cost is about Rs. 1019.75 Lakhs, hence as per OM dated 01.05.18 regarding Corporate Environment Responsibility (CER), a budget of Rs. 13.5 Lakhs (approx. 1.32 % of total project) shall be spent under Corporate Environment Responsibility (CER).  Detailed CER Budget is enclosed as <b>Annexure 4.</b>

#### Observations of the Committee

16.10.30 The committee observed that CER details needed to be revised. The Project Proponent revised the same and submitted during the meeting of the committee. An amount of ₹ 13.50 lakhs was earmarked to implement CER activities in two years.

#### Recommendations of the Committee

16.10.31 In view of the foregoing, and after detailed deliberations, the committee recommended the proposal for Environmental Clearance with the following specific conditions in addition to the general conditions as per the Ministry's Office Memorandum No. 22-34/2018-III dated 9/8/2018:

- i. PP shall progressively switch over to surface water source and completely eliminate dependence on ground water in next three years.

- ii. Particulate Matter emissions from stacks shall be less than 30 mg/Nm<sup>3</sup>.
- iii. All roads inside the plant shall be paved and an industrial vacuum cleaner shall be deployed to maintain the roads to prevent air borne fugitive dust emission.
- iv. All CER activities shall be completed in three years.
- v. Project Proponent shall achieve Zero Liquid Discharge.
- vi. Green Belt shall be developed in 33% area of project site including tree plantation on lawns and also in the vicinity of plant premises.

16.11 Greenfield Copper Refinery Plant (1.0 MTPA) project of **M/s Adani Enterprises Ltd** located at Adani Ports and Special Economic Zone land in village(s) Siracha and Navinal, Taluka Mundra, **District Kutch, Gujarat** – [Online Proposal No. IA/GJ/IND/86812/2016; MoEF&CC File No. J-11011/113/2016- IAI(I)]- **Reconsideration based on the ADS reply - Environmental Clearance** – regarding.

16.11.1 The aforesaid proposal was earlier considered in the meetings of the Expert Appraisal Committee held during 9-11<sup>th</sup> January 2019 and 22-23<sup>rd</sup> August 2019 and the relevant portion of the minutes of the meeting is given as below:

**Minutes of meeting of REAC held during 9-11<sup>th</sup> January 2019:**

16.11.2 M/s. Adani Limited has made online application vide proposal no. IA/GJ/IND/86812/2016 dated 6<sup>th</sup> December 2018 along with copies of EIA/EMP report seeking environmental clearance under the provisions of the EIA Notification, 2006 for the project mentioned above. The proposed project activity is listed at Sl. No. 3(a) Metallurgical Industries (Ferrous and Non-ferrous) under Category “A” EIA Notification, 2006 and the proposal is appraised at Central level.

**Details submitted by the Project Proponent**

16.11.3 The Greenfield Copper Refinery of 1 (One) Million Tons Per Annum (MTPA) project by M/s Adani Enterprises Limited, proposed at Adani Ports and Special Economic Zone land in village(s) Siracha and Navinal, Taluka Mundra, District Kutch, State Gujarat was initially received in the Ministry on 21<sup>st</sup> April 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 6<sup>th</sup> meeting held on 4<sup>th</sup> May 2016 and prescribed ToRs to the project for undertaking detailed EIA study for obtaining environmental clearance. Accordingly, the Ministry of Environment, Forest & Climate Change had prescribed ToRs to the project on 21<sup>st</sup> June 2016 vide Lr. No. F. No. J-11011/113/2016 IA.II (I).

16.11.4 The project of M/s. Adani Enterprises Limited located in Villages of Siracha and Navinal, Taluka Mundra, District Kutch, State of Gujarat is for setting up of a new Copper Refinery for production of 1 million tonnes per annum (million TPA) of Copper Cathode. The detail of overall plant configuration as below:

Sr. No.	Plant	Units	Phase-I	Phase-II	Overall Plant Configuration
1	Copper Smelter Plant	TPA	4,50,000	4,50,000	9,00,000
2	Copper Refinery Plant	TPA	5,00,000	5,00,000	10,00,000
3	Continuous Cast Copper	TPA	2,50,000	2,50,000	5,00,000

Sr. No.	Plant	Units	Phase-I	Phase-II	Overall Plant Configuration
	Rod Plant				
4	Copper Scrap & E-Scrap Melting Facility	TPA	50,000	50,000	1,00,000
5	Sulphuric Acid Plant	TPA	15,00,000	15,00,000	30,00,000
6	Phosphoric Acid Plant (100% P <sub>2</sub> O <sub>5</sub> )	TPA	2,50,000	2,50,000	5,00,000
7	Aluminum Fluoride Plant	TPA	15,000	15,000	30,000
8	Oxygen (Industrial) Plant	TPM	48,000	48,000	96,000
9	Precious Metal Recovery Plant				
a	Gold	TPA	25	25	50
b	Silver	TPA	250	250	500
c	Selenium	TPA	144	144	288
10	Waste Heat recovery boiler based power plant	MW	20	20	40

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

Sr. No.	Products	Units	Phase-I	Phase-II	Overall Plant Capacity
I	Main Products				
1	Copper Cathode	TPA	5,00,000	5,00,000	10,00,000
2	Sulphuric Acid (> 98%)	TPA	15,00,000	15,00,000	30,00,000
3	Continuous Cast Copper Wire Rod	TPA	2,50,000	2,50,000	5,00,000
4	Gold	TPA	25	25	50
5	Silver	TPA	250	250	500
6	Phosphoric Acid (as 100% P <sub>2</sub> O <sub>5</sub> )	TPA	2,50,000	2,50,000	5,00,000
7	Aluminum Fluoride	TPA	15,000	15,000	30,000
II	By-Products				
8	Anode Slime	TPM	250	250	500
9	Selenium	TPM	12	12	24
10	PGM Concentrate	TPM	3	3	6
11	Ferro Sand/ Iron Silicate - Copper Slag (Granulated)	TPM	92,500	92,500	1,85,000
12	Phosphogypsum	TPM	1,04,167	1,04,167	2,08,334
13	Hydro Fluoro Silicic Acid (~20% as H <sub>2</sub> SiF <sub>6</sub> )	TPM	1,250	1,250	2,500
14	Copper Telluride	TPM	21	21	42
15	Tellurium	TPM	4	4	8
16	Nickel	TPM	8	8	16
17	Bismuth Bisulphate	TPM	60	60	120
18	Calomel (Mercury)	TPM	9	9	18



Sr. No.	Products	Units	Phase-I	Phase-II	Overall Plant Capacity
	Chloride)				
19	Mercury	TPM	8	8	16
20	CCR Mill Scale	TPM	25	25	50

- 16.11.6 The total land required for the project is 256.58 ha, out of which 102.39 ha is forest land for which forest diversion application was made by APSEZ. The balance 154.19 ha is a non-forest land which was already notified as SEZ. The non-forest land has been acquired by APSEZ and in-principle approval for diversion of forest land has been obtained by APSEZ and committed to provide this land for the project. The Dhaneswari (Dhenderi) River passes through the project area which will be suitably trained and maintained.
- 16.11.7 The topography of the area is flat and slightly undulating and ranges between 22°48'13.26"N to 22°50'01.88"N Latitude and 69°33'34.74"E to 69°35'08.42"E Longitude in Survey of India topo sheet No. F42J9 & 10, at an elevation of 7-10 m AMSL. The ground water table ranges between 2-10 m below the land surface during the post-monsoon season and 2-20 m below the land surface during the pre-monsoon season. The stage of groundwater development in Mundra Taluka is reported to be 63.28% and designated as safe areas as per Technical Report Series, Ground Water Brochure of Kutch District by CGWB – 2013. No groundwater is proposed for either construction or operation phase of the project.
- 16.11.8 No National Park/Wildlife Sanctuary/Biosphere Reserve/Tiger Reserve etc. are reported to be located in the core and buffer zone within the 10 km radius of the project. The area also does not report to form corridor for Schedule-I fauna. Floral species are mainly dominated by *Prosopis juliflora* and *Acacia Senegal*. The faunal species were categorized as per conservation status of Wildlife Protection Act, 1972 and reveals that peacock is the only Scheduled-I species in the study area and the conservation plan with Rs. 40 lakhs tentative budget is proposed in Section 3.9 of EIA Report.
- 16.11.9 The proposed Copper refinery plant with various facilities will be using following raw materials:
- Copper Concentrate: Production of Copper, Sulphuric Acid, Gold, Silver and other by products such as Ferro sand (Iron Silicate/ Copper Slag), Selenium, Copper Telluride, Nickel / Nickel Sludge (Nickel Sulphate/ Nickel Carbonate), production of electricity from waste heat recovery system, etc.
  - Rock Phosphate: Production of Phosphoric Acid and by product Hydro Fluoro Silicic Acid and Phospho Gypsum.
  - Aluminum Hydrate: Production of Aluminum Flouride
  - Quick Lime: For Effluent Treatment Plant
- Following fuel will be used as per process Requirement:
- LPG/ PNG
  - Furnace Oil
  - High Speed Diesel
  - Met Coke
  - Coal/ Pet Coke

- 16.11.10 During the manufacturing Process, following waste will be generated, which will be recycled in the process or will be sent to authorised recyclers:
- Nickel Sulphate Sludge
  - Arsenic Bearing Sludge – As-Cu Precipitate
  - Used Oil
  - Oil Sludge
- 16.11.11 During the manufacturing Process, following Hazardous waste will be generated and will be stored in Secured Landfill (SLF) designed in accordance with CPCB Guidelines:
- ETP Waste sludge and Scrubber Waste
  - Spent Catalyst
  - Spent resins from DM, RO & Refinery Plant
  - Salts from Multi Effect Evaporator
- 16.11.12 The proposed project to adopt pyros melting technology and electro refining process to produce copper cathode. The sulphur dioxide generated during the smelting of copper concentrate is converted into sulphuric acid by Double Conversion Double Absorption (DCDA) process. Part of the sulphuric acid is utilized for production of phosphoric acid within the plant.
- 16.11.13 Plant is designed on Zero Liquid Discharge concept design and hence no process or treated water will be discharged outside the plant. The treated water will be recycled within the process and to address treated water balance a Reverse Osmosis plant with Multi Effect Evaporator will be installed.
- 16.11.14 Copper Concentrate will be largely imported from various countries across the globe such as Chile, Peru, Brazil, Australia, Africa, Indonesia, etc. and Rock Phosphate is imported from countries like Jordan, Morocco, Australia, etc. Copper Concentrate & Rock Phosphate will be unloaded from the ship and transported to the closed warehouse either by pipe conveyor or through covered trucks. The principal raw material for the production of copper metal is copper concentrate blend containing about 25-35% copper, 25-34% sulphur, iron 25-35% and 7-10% moisture. Approximately, 3 LTPA copper scrap and electronic scrap is also used as input to proposed copper smelting plant and copper scrap melting facility.
- 16.11.15 The major steps in copper extraction, *inter alia*, including Blending of different grades of concentrates; Smelting of concentrate in smelting furnace to produce an intermediate copper rich product known as "matte" containing 58 - 63% copper; Converting of liquid matte to blister copper (98 - 99% Cu) in Pierce-Smith converter; Fire refining of blister copper to produce anode copper (99.5% Cu) in anode furnace and casting of the anodes; and Electrolytic refining of anodes to produce copper cathodes (99.99% Cu). In the process of extraction of copper metal, sulphuric acid is recovered as a by product from the off-gases generated from the smelting and converting furnaces. A part of sulphuric acid produced is utilized for phosphoric acid production and rest will be sold in the market based on market requirement. Phosphoric Acid (PA) Plant uses sulphuric acid produced within the plant and imported rock phosphate to produce Phosphoric Acid. Phosphoric Acid is largely used in fertiliser industries to make phosphatic fertilisers. During the process fluorine gases are recovered as hydrofluoro silicic acid (HFSA) through scrubbing system. HFSA is one of the major raw materials for production of Fluoride based chemicals. Hydro fluoro silicic acid generated from phosphoric acid plant will be

partly sold to fluoride based industries and rest will be converted in value added aluminum fluoride. aluminum fluoride plant will be using HFSA produced in PA Plant and aluminum hydrate to produce aluminum fluoride. aluminum fluoride is an important material in production of aluminum metal. aluminum fluoride produced will be sold to aluminum manufacturing companies. The precious metal in the form of anode slime is collected during electrolytic refining of copper will be processed to produce gold, silver and Platinum Group of Metals (PGM) concentrate as well as recovery of minor metals such as Tellurium, Bismuth, Nickel, etc). The copper cathode produced from copper refinery will be melted and drawn in the form of copper wire rod on continuous basis from a continuous casting and rolling machine. Copper rod will be of various sizes as per market requirement such as 8 to 32 mm.

- 16.11.16 The wastewater generated from copper smelter, sulphuric acid plant, copper refinery, Phosphoric Acid Plant and Aluminum Fluoride plant will be treated in state of art effluent treatment facility. Treated effluent will be consumed within the plant operations to maximum extent. A Reverse Osmosis plant with Multi effect evaporator will be installed at the outlet of treated effluent to reuse water internally and reduce water consumption. This will ensure the plant as a Zero Liquid Discharge facility.
- 16.11.17 The major technological units envisaged for the copper refinery project are: Raw material handling system; Smelting furnace; Pierce smith converter; ferro sand cleaning furnace (FSCF); copper scrap & e-scrap melting system; anode furnace & anode casting wheel; off gas handling; sulphuric acid plant; oxygen plant; copper refinery plant; precious metal recovery plant; continuous cast copper wire rod plant; phosphoric acid plant; aluminum fluoride plant; and effluent treatment plant (ETP), Utilities like power, water, air and fuel
- 16.11.18 The targeted production capacity of the proposed project is 1.0 million TPA. The raw material for the plant would be procured from open market. The raw material transportation will be by pipe conveyor or covered trucks from port to plant.
- 16.11.19 The water requirement of the project is estimated as approx. 32800 m<sup>3</sup>/day of freshwater requirement will be obtained from the desalination plant of Adani Port Special Economic Zone (APSEZ). 5,418 m<sup>3</sup> /day treated water from ETP & STP will be utilized for plant operation.
- 16.11.20 The power requirement of the project is estimated as 300 MW, out of which 260 MW will be obtained from the APSEZ through MUPL and 40 MW would be generated from waste heat recovery system.
- 16.11.21 Baseline Environmental Studies were conducted during post-monsoon and partly winter season i.e. from 1<sup>st</sup>October to 31<sup>st</sup>December, 2016 Ambient air quality monitoring has been carried out at eight locations during 1<sup>st</sup>October to 31<sup>st</sup>December, 2016 and the data submitted indicated: PM<sub>10</sub> (35.2 to 84.2 µg/m<sup>3</sup>), PM<sub>2.5</sub> (19.2 to 43.9 µg/m<sup>3</sup>), SO<sub>2</sub> (14.8 to 42.6 µg/m<sup>3</sup>) and NO<sub>x</sub> (13.1 to 32.8 µg/m<sup>3</sup>). The results of the modeling study indicates that the maximum increase of GLC for the proposed project is 0.52 µg/m<sup>3</sup> with respect to the PM<sub>2.5</sub>, 1.27 µg/m<sup>3</sup> with respect to the PM<sub>10</sub>, 10.37 µg/m<sup>3</sup> with respect to the SO<sub>2</sub> and 0.23 µg/m<sup>3</sup> with respect to the NO<sub>x</sub>.
- 16.11.22 Ground water quality has been monitored in eight locations in the study area and analysed. pH: 7.3 to 7.8, Total Hardness: 125 to 392 mg/l, Chlorides: 282.6 to 978.4 mg/l, Fluoride: 0.9 to 1.5 mg/l. Heavy metals are within the limits. Surface water

samples were analysed from four locations. pH: 7.2 to 8.0; DO: 5.6 to 5.9 mg/l and BOD: <3 mg/l. COD from 60 to 80 mg/l.

- 16.11.23 Noise levels are in the range of 48.5 to 56.6 dB(A) for daytime and 42.3 to 48.8 dB(A) for night time.
- 16.11.24 It has been reported that there are no people in the core zone of the project. No R&R is involved. It has been envisaged that no families to be rehabilitated,
- 16.11.25 It has been reported that a total of 225694 tons per annum of waste will be generated due to the project, out of which 9274 tonnes per annum will be recycled through authorised recyclers and within the process. Rest will be stored in the secured landfill (SLF). It has been envisaged that an area of 85.79ha will be developed as green belt around the project site to attenuate the noise levels and trap the dust generated due to the project development activities.
- 16.11.26 It has been reported that the Consent to Establish/Consent to Operate from the Gujarat State Pollution Control Board / Pollution Control Committee will be obtained as per applicable requirements after obtaining the Environmental Clearance.
- 16.11.27 The Public hearing of the project was held on 29<sup>th</sup> April 2017 at Community Premises Centre Samajvadi Opposite Tunda Primary School under the chairmanship of Shri D R Patel, Additional District Magistrate and Resident Additional Collector, for production of 1.0 MTPA of setting up of Copper Refinery plant, under the chairmanship of Additional District Magistrate and Resident Additional Collector. The issues raised during public hearing were mainly about Employment, Environmental Protection and Rural infrastructure. An amount of ₹ 40 Cr has been earmarked for Corporate Environment Responsibility (CER) based on public hearing issues.

Sr. No.	Public Hearing Issues	Capital Budget for Corporate Environment Responsibility (CER) in ₹ Cr/ Year					Total Proposed Expenditure in ₹ Cr
		1	2	3	4	5	
1	Sustainable livelihood generation for locals including fishermen and Women Empowerment	1.0	1.0	1.0	1.0	1.0	5.0
2	Education and skills development of locals	1.0	1.0	1.0	1.0	1.0	5.0
3	Community Health Initiatives	2.0	2.0	2.0	2.0	2.0	10.0
4	Community Rural Infrastructure Development	4.0	4.0	4.0	4.0	4.0	20.0
	<b>Total CER Budget</b>	<b>8.0</b>	<b>8.0</b>	<b>8.0</b>	<b>8.0</b>	<b>8.0</b>	<b>40.0</b>
5	Environmental control measures for proposed project and	Separate Rs 1,040 Cr budget has been kept for pollution control measures and environment management plan					

	environmental protection	
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16.11.28 Recurring CER expenditure in operation phase shall be governed as per CSR Rules under the Companies Act. Time Bound Action Plan with Budget for issues raised in Public Hearing is proposed as following:

S.No	Issue	Time Bound Action Plan within Construction Phase of the Project	Budget
	Employment for Locals including Fisherman and Sustainable Livelihood Generation	<p>The requirements of skilled/unskilled manpower during operation will be met from nearby villages as far as possible. Locals will be given preference to employment based on skill set &amp; eligibility requirement as per the job and the vacancies available.</p> <p>During construction phase of the project, there will be around 400 employees and 2600 contract workforce. During operation phase of the project, there will be around 1000 employees and another 1000 contract workmen directly working for the plant.</p> <p>This is estimated that another 5000 persons in the area will get benefited from the project by indirect engagement and business increased due to this project.</p> <p>Following activities are proposed in this area:</p> <ul style="list-style-type: none"> <li>➤ Extend assistance to start SHGs to empower women and material and financial support to take up self-employment.</li> <li>➤ Amenities like equipment support, sanitation facilities, approach roads, fish lending sheds, fisher-folk vasahats (Settlements); training for livelihood, Insurance etc.</li> <li>➤ Skill Development Centre (SDC) to make the youth for achieving their Goals in life by becoming Skilled Professionals.</li> <li>➤ Provision of fodder support, promote bio-gas installation in agri and animal husbandry based families' households. Construction of cattle sheds, Awareness</li> </ul>	<p>Capital budget of Rs 5 Cr during the project construction period has been kept.</p> <p>Recurring CSR expenditure in operation phase shall be governed as per CSR Rules under the Companies Act.</p>

S.No	Issue	<b>Time Bound Action Plan within Construction Phase of the Project</b>	Budget
		<p>meetings and exposure visits for animal husbandry.</p> <ul style="list-style-type: none"> <li>➤ Support for Drip irrigation and Tissue Culture Training.</li> </ul>	
	Education and skills development of locals	<p>As part of improving employability within local youth including the youth from the fishing community also, there is a plan to set up a Skill Development Centre through Adani Foundation. Various activities are proposed in this area;</p> <ul style="list-style-type: none"> <li>➤ Supporting in creation of assembly halls, prayer hall, classrooms, computer labs, space for mid-day meal, playground, school walls etc. for government school.</li> <li>➤ Igniting mind of students through science on wheels, UDAN schemes.</li> <li>➤ Educational Vocational Guidance Fair (EVGF) for career talk.</li> <li>➤ Balwadis for the kids of fisher-folk community to provide awareness about education, health, hygiene, and discipline.</li> <li>➤ Programme for skills improvements of teaching staffs in govt. schools.</li> <li>➤ Linkages will be established with the employment exchange and the registered persons having appropriate qualification shall be given priority.</li> </ul>	<p>Capital budget of Rs 5 Cr during the project construction period has been kept.</p> <p>Recurring CSR expenditure in operation phase shall be governed as per CSR Rules under the Companies Act.</p>
	Community health care and insurance support for community members including fishermen	<p>AEL commits to extensively work for corporate environment and social responsibility in the area and improve quality of people's life. Company have started key initiatives in support of sustainable development. AEL has a CSR policy and commit to work in following area for this project.</p> <ul style="list-style-type: none"> <li>➤ Senior Citizen Health Card Scheme to address the needs of the senior citizens including the fishermen community.</li> <li>➤ Various health camps organization at regular intervals i.e. Gynaecological care, Blood</li> </ul>	<p>Capital budget of Rs 10 Cr during the project construction period has been kept.</p> <p>Recurring CSR expenditure in operation phase shall be governed as per CSR Rules under the Companies Act.</p>

S.No	Issue	Time Bound Action Plan within Construction Phase of the Project	Budget
		<p>donation, Health awareness programs, HIV/AIDS, Cataract detection.</p> <ul style="list-style-type: none"> <li>➤ Provision of Free Mobile Health Care Units (MHCU).</li> <li>➤ Promotion of awareness of malnutrition and anaemia.</li> <li>➤ Setting up rural clinics to ensures outreach services.</li> </ul>	
	Rural Infrastructure Development and access to Fishermen community for fishing and harbours	<p>The roads used by fishermen will not be disturbed due to the proposed copper refinery project. Disaster management group and insurance scheme shall be initiated to support fishermen. Following activities are identified and proposed in this area:</p> <ul style="list-style-type: none"> <li>➤ To provide facility for potable drinking water by providing RO Plants, drinking water supply system, overhead tank and underground pump.</li> <li>➤ Creation of clean and hygienic environment by proper drainage systems, sewage treatment plants, community led sanitation campaign</li> <li>➤ Construction of various community centers to facilitate social activities, upgradation of facility at crematoriums, Gaushala etc.</li> <li>➤ Conservation of water by construction of check dams and pond.</li> <li>➤ Upgradation of primary health centers, renovation of roads and expansion of roads, construction of toilet facilities etc.</li> <li>➤ Provision of solar street lighting, green nurturing programs, implementation of swachhhbharat initiatives.</li> </ul>	<p>Capital budget of Rs 20 Cr during the project construction period has been kept.</p> <p>Recurring CSR expenditure in operation phase shall be governed as per CSR Rules under the Companies Act.</p>
	Environmental control measures for proposed project and environmental protection	<ul style="list-style-type: none"> <li>➤ Environment friendly technology will be selected and pollution control measures will be implemented to comply emissions as per the prescribed standards by CPCB. Further, it will comply with all the conditions stipulated by</li> </ul>	<p>Rs 1,040 Cr of capital budget is kept for installation of environmental protection measures within</p>

S.No	Issue	Time Bound Action Plan within Construction Phase of the Project	Budget
		<p>GPCB and MoEF&amp;CC.</p> <ul style="list-style-type: none"> <li>➤ The proposed project will be designed as per the latest technology with all in built pollution control measures.</li> <li>➤ The plant will be operated on zero liquid discharge principle.</li> <li>➤ Secured Land Fill (SLF) is proposed within the project premises for disposal of ETP waste sludge. SLF shall be constructed as per the CPCB guidelines. Other hazardous waste will be disposed through the approved recyclers.</li> <li>➤ About 85.79 ha of project area (33% of the project area) will be developed with greenbelt / green cover as per prevailing guidelines from GPCB/CPCB/MoEF&amp;CC.</li> </ul>	the plant.

16.11.29 The capital cost of the project is ₹ 10,000 Cr and the capital cost for environmental protection measures is proposed as ₹ 1044 Cr. The annual recurring cost towards the environmental protection measures is proposed as ₹ 500 Cr. The detailed CER plan has been provided in the EMP in its page No. C6-8. The employment generation from the proposed project / expansion is direct employment and about 5000 indirect employment during operation phase.

16.11.30 Greenbelt will be developed in 85.79 ha which is about 33.43% of the total acquired area. Peripheral greenbelt, consisting of at least three tiers around plant boundary will be developed as greenbelt and green cover as per CPCB/MoEF&CC, New Delhi guidelines. Local and native species will be planted with a density of 2500 trees per hectare. Total no. of 225000 saplings will be planted and nurtured in 85.79 hectares.

16.11.31 The proponent has mentioned that there is no court case or violation under EIA Notification to the project or related activity.

16.11.32 EIA Consultant Organization: M/s. Vimta Labs, Hyderabad.

**Observations of the Committee (in the meeting held during 9-11<sup>th</sup> January 2019)**

16.11.33 After detailed deliberations, the Committee observed following issues:

- i. According to the EIA report, the land requirement for the project is 256.58 ha. Out of 256.58 ha, 154.19 ha is APSEZ area and 102.39 ha is a Forest land. The land use conversion plan of 154.19 ha for industrial purpose has not been obtained from the Competent Authority concerned. Further, PP has obtained stage I forest land diversion approval for 1576.81 ha in the name of M/s. Adani Ports and SEZ Limited. The factual agreement between M/s. Adani Enterprises Limited and M/s. Adani Ports and SEZ Limited for the utilization of 102.39 ha is a Forest land is not clear.



- ii. CRZ map inter-alia including demarcation of HTL/LTL/CRZ land classification along with super imposition of plant site through competent agencies has not been submitted.
- iii. Source of copper ore concentrate, characteristics, mode of transportation from source to plant site, confirmed ore linkage document has not been submitted.
- iv. Water consumption of 10 LTPA Copper smelter is 32790 KLD whereas the water requirement for existing 4.5 LTPA copper smelter unit is only 10,000 KLD. Hence, water requirement for the proposed plant has to be reworked out.
- v. According to the EIA records, Dhaneshwari river is passing through the project site and the mangrove reserve forest is existing within the project site. Quantification of these mangroves and conservation measures for mangroves and the river stream has not been submitted.
- vi. Storage arrangements made for the raw materials are found to be not adequate. Open storage of raw materials such as coal, limestone etc., shall be avoided.
- vii. Sulfur balance of the copper smelter unit has not been submitted.
- viii. Copper slag disposal site co-ordinates, concrete mode of utilization, maximum time frame envisaged for the storage at the disposal yard i.e., one month (or) 15 days has not been submitted.
- ix. Phospho-gypsum disposal site co-ordinates, concrete mode of utilization, maximum time frame envisaged for the storage at the disposal yard i.e., one month (or) 15 days has not been submitted.
- x. Lining details for Phospho-gypsum disposal yard, leachate collection system envisaged and details of piezo-well installation has not been made available.
- xi. Secured land fill site co-ordinates, lining details, leachate collection system envisaged and details of piezo-well installation has not been made available.
- xii. Baseline health status of the people living in the study area of the project site has not been collected.
- xiii. Details regarding disposal of arsenic bearing sludge has not been submitted.
- xiv. Mercury in ambient air has not been monitored.
- xv. Conservation plan prepared for the Schedule-I species is not meeting the requirement of the conservation of the species that are identified. Therefore, the plan shall be revised considering the requirements of the conservation of the species identified and shall be approved by the competent authority concerned.
- xvi. Collection of run off water from the raw material storage area, slag and gypsum storage yard and its treatment has not been submitted.
- xvii. Study on installation of rain water harvesting structure based on annual rain fall pattern and details regarding amount of water to be conserved has not made available.
- xviii. Impact on hydro geology regime of the project site has not submitted.
- xix. Occupational health assessment envisaged for the employees and workers has not been submitted.
- xx. As per the Public hearing proceedings, it is noted that there are strong oppositions from the stake holders against the installation of copper smelter unit. Consolidated list of point-wise issues raised and response provided along with action plan for implementation has not been submitted.

- xxi. The Chapter-5 consists of only listing of alternative technologies. The committee opined that the PP shall select out of alternative technologies available, based on the selection of the technology, the impact prediction shall be made and mitigation measures shall be proposed.
- xxii. Quantitative representation of mitigation measures was not presented.
- xxiii. Revised water balance shall be submitted.
- xxiv. HIRA shall be prepared for worst case scenario
- xxv. Management of white shall be spelled out
- xxvi. Material balance shall be revised.
- xxvii. The involvement of geological expert shall be provided.
- xxviii. The compliance of specific conditions of the environmental clearance of the SEZ shall be provided.
- xxix. The reply to TOR point No. (4) is not proper.
- xxx. The data retrieved from the LULC studies shall be utilized for the prediction of impacts and mitigation measures.
- xxxi. The Air Quality modeling studies shall be re-worked out including the mercury and keeping the mixing height in view.
- xxxii. The Environmental Policy of the Organization is not meeting the requirements given in ToR Point No. 9(i), 9(ii), 9(iii), 9(iv).
- xxxiii. The CER shall be calculated on the slab rates as per the Office memorandum issued on 1<sup>st</sup> May, 2018.

16.11.34 The committee also felt that in view of the complexity involved in the project, the committee proposed for site visit by the sub-committee of the EAC.

**Recommendations of the Committee (in the meeting held during 9-11<sup>th</sup> January 2019)**

- 16.11.35 After detailed deliberations, the committee advised to submit the information on the observations of the committee. The committee also suggested having a site visit by the sub-committee of EAC in parallel. Therefore, the proposal will be re-considered after submission of the information by the project proponent and also the submission of the report by the sub-committee based on the site visit.
- 16.11.36 The Ministry decided to carry out site visit after receipt of the information to the above points. Project Proponent has submitted the information on 07.08.2019 and the same was placed before the EAC meeting held during 22-23<sup>rd</sup> August 2019.

**Observations of the Committee (in the meeting held during 22-23<sup>rd</sup> August 2019)**

- 16.11.37 The committee observed that in spite of detailed deliberations during EAC (Industry1) meeting held during 9 -11<sup>th</sup> January 2019 and subsequent information sought, same has not been adequately addressed by the project proponent

**Recommendations of the Committee (in the meeting held during 22-23<sup>rd</sup> August 2019)**

- 16.11.38 The committee desired that all the information asked for should be carefully prepared and submitted by the Project Proponent. In the meantime, a sub-committee of the committee should carry out the site visit as already recommended earlier.

16.11.39 The subcommittee visited the site and surroundings on 09.12.2019 and held discussions with the representatives of M/s Adani Enterprises Ltd on 10.12.2019 at Ahmedabad. Site visit report was placed in the EAC meeting held during 23-24<sup>th</sup> December 2019 for further deliberations.

16.11.40 The observations of subcommittee on the ADS after discussions with the representatives of M/s Adani Enterprises Ltd is as below:

S.No.	ADS Point	Out Come of the Discussions
1	According to the EIA report, the land requirement for the project is 256.58 ha. Out of 256.58 ha, 154.19 ha is APSEZ area and 102.39 ha is a Forest land. The land use conversion plan of 154.19 ha for industrial purpose has not been obtained from the Competent Authority concerned. Further, PP has obtained stage I forest land diversion approval for 1576.81 ha in the name of M/s. Adani Ports and SEZ Limited. The factual agreement between M/s. Adani Enterprises Limited and M/s. Adani Ports and SEZ Limited for the utilization of 102.39 ha is a Forest land is not clear.	The committee found that ADS reply given is satisfactory in view of the fact that entire land proposed for the project 256.58 ha is within the APSEZ out of which 154.19 ha is already notified as SEZ and the balance land of 102.39 ha is under process of forest diversion. There is an agreement through MoU between APSEZ and Adani Enterprises Ltd (AEL).
2	CRZ map inter-alia including demarcation of HTL/LTL/CRZ land classification along with super imposition of plant site through competent agencies has not been submitted.	CRZ map was prepared by Centre of Earth Science Studies (CESS), Thiruvanthapuram. Site is outside the CRZ, geographically separated by road and railway track. This CRZ map is awaiting finalization as part of ICZMP which is in the process by Govt. of Gujarat.
3	Source of copper ore concentrate, characteristics, mode of transportation from source to plant site, confirmed ore linkage document has not been submitted.	The indicative figures of weight fractions of copper concentrate from the various sources were discussed. However, there is no such analysis report is available on the records. The mode of transport from port to the plant and transit covered storage at port, conveyor, storage at plant ensured without leakage and safe handling. AEL has already got commercial

S.No.	ADS Point	Out Come of the Discussions
		<p>enquiries from copper concentrate suppliers:</p> <ol style="list-style-type: none"> <li>1. Mitsubishi Corporation Rtm International Pte, Singapore</li> <li>2. Transmine Trading SA</li> <li>3. Trifigura India Pvt Ltd</li> <li>4. MITSUI &amp; Co, Japan</li> </ol> <p>It seems, the origin copper concentrate may be Australia and South America Continent.</p>
4	<p>Water consumption of 10 LTPA Copper smelter is 32790 KLD whereas the water requirement for existing 4.5 LTPA copper smelter unit is only 10,000 KLD. Hence, water requirement for the proposed plant has to be reworked out.</p>	<p>In comparison to existing plant of M/s Vedanta Ltd, the water consumption will be more as the cooling system proposed is wet cooling tower which has specific consumption 8.7 m<sup>3</sup>/T of copper that of radiator type air cooler (dry cooling).</p> <p>It is found the energy requirement for fans in case of dry cooling system will be more in turn more carbon footprint.</p>
5	<p>According to the EIA records, Dhaneshwari river is passing through the project site and the mangrove reserve forest is existing within the project site. Quantification of these mangroves and conservation measures for mangroves and the river stream has not been submitted.</p>	<p>No mangroves are present in the plant site.</p> <p>Presence of the mangroves are sighted on the southern side, along the Kodti Creek.</p> <p>It is informed that the company appointed ecological expert who is working on the monitoring of the mangroves and conservation of the same in the identified patches of coastal areas in consultation with the State Forest Department.</p> <p>Further, report on Wildlife Conservation plan /Mangrove Conservation Plan was discussed at a length in terms of biodiversity, socio-economic values for the locals, monitoring mechanism etc.</p> <p>Mud flats were not mapped in the CRZ map.</p>
6	<p>Storage arrangements made for the raw materials are found to be not adequate. Open storage of raw materials such as coal, limestone etc., shall be avoided.</p>	<p>AEL explained the Engineering drawings of covered storage yards for raw material storage.</p>

S.No.	ADS Point	Out Come of the Discussions
7	Sulphur balance of the copper smelter unit has not been submitted.	<p>The sources of SO<sub>2</sub> (97%), Copper Concentrate, Furnace Oil and Met Coke were taken into account.</p> <p>Fixation of Sulphur in copper slag, Chemical gypsum, ETP Sludge and residual off gas from SAP and FGD system.</p> <p><b>SAP:</b> Catalytic converter bed with DCDA with conversion of 99.92% and cesium sulphuric acid catalyst in final bed catalytic converter for greater conversion efficiency at temperature lower than 400°C. Tail gas scrubbing to scrub the residual gases coming out of the final absorption tower.</p> <p><b>FGD:</b> Scrubber with amine technology for treating off gas for smelting furnace, electric furnace and PS converter and slag cleaning furnace. Lime scrubber is proposed for treating fugitive off gas from anode furnace and scrap melting furnace.</p>
8	Copper slag disposal site co-ordinates, concrete mode of utilization, maximum time frame envisaged for the storage at the disposal yard i.e., one month (or) 15 days has not been submitted.	Slag disposal storage was proposed for three months. Complete reuse of the copper slag is yet to be explored to draw action plan.
9	Phospo-gypsum disposal site co-ordinates, concrete mode of utilization, maximum time frame envisaged for the storage at the disposal yard i.e., one month (or) 15 days has not been submitted.	To be revised in accordance with location / lay out plan
10	Lining details for Phospo-gypsum disposal yard, leachate collection system envisaged, and details of piezo-well installation has not been made available.	To be revised in accordance with location / lay out plan
11	Secured land fill site co-	After reviewing the layout plan, the

S.No.	ADS Point	Out Come of the Discussions
	ordinates, lining details, leachate collection system envisaged, and details of piezo-well installation has not been made available.	committee felt SLF shall be designed at one location only with adequate facilities for sampling and testing instead of two locations in the layout. The layout area of SLF shall not be made congested. Adequate space shall be earmarked for safe handling and movement of vehicles.
12	Baseline health status of the people living in the study area of the project site has not been collected.	Baseline health survey was conducted by M/s TALEEM Foundation Ahmedabad. The general issues identified are live birthe and infants' survival, anaemia, diarrhea etc,
13	Details regarding disposal of arsenic bearing sludge has not been submitted.	Arsenic sludge generated from the ETP after tertiary treatment, will be sent to SLF. The general chemical characteristics of the arsenic bearing sludge is given in ADS reply. However, the same may be required in the EMP in the post project monitoring.
14	Mercury in ambient air has not been monitored.	Mercury monitoring was carried out which was found to be <0.5 ng/Nm <sup>3</sup> .
15	Conservation plan prepared for the Schedule-I species is not meeting the requirement of the conservation of the species that are identified. Therefore, the plan shall be revised considering the requirements of the conservation of the species identified and shall be approved by the competent authority concerned.	To be discussed in the EAC
16	Collection of runoff water from the raw material storage area, slag and gypsum storage yard and its treatment has not been submitted.	Stormwater management plan is to be revised based on the peak rainfall.
17	Study on installation of rainwater harvesting structure based on annual rain fall pattern and details regarding amount of water to be conserved has not	Rainwater harvesting structures shall be designed as per the quantification of the rainwater runoff based on the average rainfall in the region.

S.No.	ADS Point	Out Come of the Discussions
	made available.	
18	Impact on hydro geology regime of the project site has not submitted.	Stage of development shall be defined based on the hydro logical survey as the APSEZ and ADANI Power Ltd is operating since long.
19	Occupational health assessment envisaged for the employees and workers has not been submitted.	Occupational health survey was conducted by ICMR-NIOSH. Monitoring mechanism as per the is not clear in the report.
20	As per the Public hearing proceedings, it is noted that there are strong oppositions from the stake holders against the installation of copper smelter unit. Consolidated list of pointwise issues raised and response provided along with action plan for implementation has not been submitted.	To be revised
21	The Chapter-5 consists of only listing of alternative technologies. The committee opened that the PP shall select out of alternative technologies available, based on the selection of the technology, the impact prediction shall be made and mitigation measures shall be proposed.	Outotec Flash melting furnace is selected for the proposed project due to Operational ease and Environmental friendliness. Copper concentrate, flux additives need to have moisture content below 0.3 %. Rotary steam dryer is used for drying.
22	Quantitative representation of mitigation measures was not presented.	All the process flow, outlet and inlet flows shall be mentioned in the same unit system. Stack height (20m) of anode casting may be revisited.
23	Revised water balance shall be submitted.	Water balance diagram is illegible.
24	HIRA shall be prepared for worst case scenario	HIRA is inadequate
25	Management of white ash shall be spelled out	To be discussed in EAC
26	Material balance shall be revised.	Satisfactory

S.No.	ADS Point	Out Come of the Discussions
27	The involvement of geological expert shall be provided.	Hydrogeological expert was involved.
28	The compliance of specific conditions of the environmental clearance of the SEZ shall be provided.	Satisfactory
29	The reply to TOR point No. (4) is not proper.	Satisfactory
30	The data retrieved from the LULC studies shall be utilized for the prediction of impacts and mitigation measures.	To be revised
31	The Air Quality modeling studies shall be re-worked out including the mercury and keeping the mixing height in view.	Suitability of model used as per the site characteristics in view of complex atmospheric conditions of coastal line.
32	The Environmental Policy of the Organization is not meeting the requirements given in ToR Point No. 9(i), 9(ii), 9(iii), 9(iv).	Environmental Policy was not furnished. Reporting system of non-compliances/ violation is also not in place.
33	The CER shall be calculated on the slab rates as per the Office memorandum issued on 1 <sup>st</sup> May, 2018.	CER shall be revised explicitly on SIA/Need based Assessment and issues raised in the Public Hearing

**Observations and Recommendations of the Committee (in the EAC meeting held during 23-24<sup>th</sup> December 2019):**

- 16.11.41 After detailed deliberations on site visit report of the sub-committee and reply of the Project Proponent to the ADS, the committee sought the following details in the form of revised ADS reply for further consideration of the proposal.
- i. Provide chemical characteristics of the sourcing Copper concentrate.
  - ii. Justification for installation of Water-Cooling Condenser(WCC)
  - iii. Provide details for proposed flue gas desulfurization.
  - iv. Reduce carbon foot print by heat recovery system generating from the plant.
  - v. Access roads to be provided for all the solid waste storages such as copper slag, gypsum storage & secured land fill and adequate green belt to be developed around all the solid waste storages.
  - vi. Provide utilization plan for copper slag and phospho-gypsum, with details of storage yard.
  - vii. Provide various stream characteristics being treated in ETP and treatment process.



- viii. Environment Management Plan to be revised and updated with intervention for wildlife management, mangrove conservation, active mud flats and post project monitoring around solid waste storages.
  - ix. Storm water management plan to be revised based on peak rainfall. Rainwater Harvesting calculations to be provided.
  - x. OHS monitoring plan based on ICMR-NIOH study and ILO guidelines to be included.
  - xi. Provide linkage between Public Hearing, Social Impact Assessment and CER proposed.
  - xii. Confirm suitability of air model used as per site characteristics in view of the complex atmospheric conditions of the coastal line and fumigation scenario. Superimpose air modeling isopleth on land use map of study area considering worst case scenario of the pollutants Mitigation measures based on the receptor points and path to be submitted.
  - xiii. Unit wise water balance to be submitted in tabular form.
  - xiv. Stack and process vents to be noted separately and all stack heights to be as per standards.
  - xv. HIRA shall be prepared for worst case scenario of Hydro Fluro Silicic acid storage tank failure. Quantitative Risk Analysis (QRA) leading to FN Curve for storage related risk to be submitted.
  - xvi. Reporting system of non-compliances/ violations to be submitted as per TOR 9(iii) and (iv).
  - xvii. Provide details about reduction in acid mist formation in sulphuric acid plant.
  - xviii. Provide details of interlocking system envisaged for copper smelter and sulphuric acid.
  - xix. Give detailed plan of the precautions to be taken during construction stage.
- 16.11.42 The Project Proponent replied to ADS on 05.02.2020 by uploading a detailed report for above nineteen ADS points.
- Observations of the Committee**
- 16.11.43 The project was designed based on the Outotec Flash Smelting Technology due to operational ease with safer working conditions, environmental friendliness, low off gas volumes, higher sulphur dioxide capture rate, process heat recovery and utilisation.
- 16.11.44 Sulphur balance along with regenerative amine based sulphur dioxide scrubbing and lime slurry based scrubbing for flash smelting, Pierce Smith (ps) converter, tail gases from sulphuric acid plant (sap), anode furnace, slag cleaning furnace and scrap melting furnace has been detailed in the report.
- 16.11.45 Waste Heat Recovery System for power generation of 40 MW and corresponding reduction of carbon foot print estimation was given in the report. It is mentioned that carbon dioxide saving is equivalent to 244 kg/t of Copper.
- 16.11.46 Fifteen meter wide greenbelt around solid waste storage (copper slag, gypsum, hazardous waste), and water spray system are proposed to control dust emissions.
- 16.11.47 A detailed copper slag and phosphor-gypsum utilization plan was given by the Project Proponent (PP) based on the reconnaissance survey of global data. The PP came out with number of industrial/ construction/infrastructure applications of

copper slag and a number of applications of phosphor-gypsum in manufacturing of cement, as a fertilizer in agriculture, in construction/ infrastructure building for which prospective users/buyers shall be identified after stabilization of the project. Desired quality of user specifications of the copper slag/phosphor gypsum can be achieved only after stabilization of process parameters of plant and its aging in the stacking yard. Further, the Project Proponent requested MoEF&CC to make a policy decision for utilization of Phospho-Gypsum by circular economy concept similar to one adopted in China and Japan.

- 16.11.48 Technical design details of Phospho-gypsum stack yard were provided in the report.
- 16.11.49 Wildlife conservation plan was revised with detailed mitigation measures, monitoring and inclusion of a component for mangrove conservation.
- 16.11.50 Stormwater management plan was revised with peak rainfall data in the study area, i.e 467.9mm/day in the year 1959. Accordingly, rainwater harvesting structures had been proposed by the PP for roof top rainwater harvesting.
- 16.11.51 Occupational Health and Safety (OHS) monitoring plan was given based on the ICMR-NIOH and ILO guidelines including specific tests to be conducted plant wise (smelter/refinery/CCR plant/ PMR plant/SAP/PAP/AF3 plant/ETP).
- 16.11.52 Air Quality Modeling study was revised using CALPUFF with all site features like sea and land interaction, topography, upper air data, Internal Thermal Boundary Layer, Coastal Fumigation, etc. to predict the ground level concentrations likely to impact the nearby habitation as well as long term and long range transport of emissions.
- 16.11.53 Water balance for entire complex was revised and water requirement is reduced from 32800 KLD to 29678 KLD.
- 16.11.54 HIRA was revised for all acids storage including Hydro Fluoro Silicic acid with Quantitative Risk Assessment (QRA) and Societal Risk (F-N Curve).
- 16.11.55 Certified copy of the Board Resolution with respect to reporting non-compliances and violations was furnished.
- 16.11.56 Details of mist eliminators matching the mist particle size was furnished in order to adopt the mechanism to control acid mist from stacks.
- 16.11.57 Interlocking systems for control of sulphur dioxide emissions, case by case, during start up, normal plant operations and poor converter reaction were detailed in the report.
- 16.11.58 A detailed plan of precautionary measures for use during construction phase with mitigation measures was provided.

#### **Recommendations of the Committee**

- 16.11.59 In view of the foregoing, and after detailed deliberations, the committee recommended the proposal for Environmental Clearance with the following specific conditions in addition to the general conditions as per the Ministry's Office Memorandum No. 22-34/2018-III dated 9/8/2018.
  - i. Dust collected from Waste Heat Recovery Boiler (WHRB), Electrostatic Precipitators (ESPs) and bag filters in copper smelter shall be recycled back into copper smelter plant and dust collected from bag filters in phosphoric acid plant shall be recycled back into phosphoric acid plant.

- ii. Off-gases from smelting, settling and converting furnaces in copper smelter plants shall be cleaned and converted to sulphuric acid by Double Conversion Double Absorption (DCDA) Process Technology. Super Caesium based catalyst shall be used in final bed of the catalytic converter of Sulphuric Acid Plant to achieve maximum conversion ratio.
- iii. Sulphur dioxide emission from the residual off-gases of sulphuric acid plant shall not be more than 1.0 kg/ Tonne of Sulphuric acid produced.
- iv. Sulphur dioxide emission from stack of flue gas desulphurisation system shall not be more than 600 mg/Nm<sup>3</sup>.
- v. Stack height for sulphuric acid plant and flue gas desulfurization system shall not be less than 150 meters.
- vi. Acid mist from stack of Sulphuric acid plant shall be maintained at less than 50 mg / Nm<sup>3</sup> in compliance to the standards vide Notification G.S.R 354 (E) dated 02.05.2011.
- vii. On-line stack monitoring system shall be installed for sulphur dioxide from the Sulphuric acid plant and flue gas desulphurisation stacks, and shall be calibrated regularly.
- viii. Regenerative sulphur dioxide recovery system such as scrubbing with amine shall be adopted for flue gas desulphurization for the secondary gases from flash smelter, Pierce Smith converter and for tail gases from sulphuric acid plant. Lime scrubbing system shall be adopted for flue gas desulphurization of the gases from anode furnace, slag cleaning furnace and scrap melting furnace.
- ix. Six numbers of Continuous Ambient Air Quality Monitoring Stations (CAAQMS) shall be installed to monitor the ambient air quality in and around the plant in consultation with SPCB.
- x. Mercury (Hg) in ambient air shall be monitored in addition to air quality parameters prescribed in the National Ambient Air Quality Standards (NAAQS) 2009 in the study area and report shall be submitted along with six monthly compliance report to Regional Office of the Ministry.
- xi. Company shall install multistage fluoride scrubbing system in phosphoric acid plant so that the total Fluoride emissions from the Phosphoric acid plant shall not exceed the prescribed standards, i.e., 20 mg/Nm<sup>3</sup>. On-line stack monitoring facilities for Fluorides shall be provided. Calibration report shall be preserved.
- xii. Water requirement for the proposed copper refinery plant shall not be more than 30,000 m<sup>3</sup>/day. Water audit shall be carried out on annual basis and report submitted to Regional Office of the Ministry.
- xiii. The entire wastewater generated including effluents from the gas cleaning plant, sulphuric acid plant, secondary gas scrubbers of copper smelter, Copper refinery, Precious Metal Recovery plant, Leachate collected from Secured Land Fill (SLF), shall be treated in effluent treatment plant (ETP). Treated effluent shall be recycled and reused in plant operations.
- xiv. Leachate from Phospho-gypsum storage area shall be recycled back into and utilized in the Phosphoric Acid Plant.

- xv. Reverse osmosis plant along with multi effect evaporator (MEE)/ MVR system shall be installed to achieve Zero Liquid Discharge.
- xvi. Domestic effluent shall be treated in sewage treatment plant (STP) and treated wastewater shall be used for the development of green belt.
- xvii. The ground water quality all around the solid waste storage of Copper Slag, Phospho-Gypsum and SLF shall be monitored, in pre monsoon and post monsoon periods for pH, Arsenic and Fluoride levels along with other parameters and data submitted to the Ministry's Regional Office.
- xviii. Interlocking systems in the plant shall be provided to control the impact of accidental releases, if any. Records of such events including response and corrective actions shall be maintained.
- xix. Wildlife Management Plan for conservation of active mud flats, and mangroves plantation in 500 ha (50 ha per year in 10 years) and for development on the bank of Kotdi-I, Kotdi-II and Baradimata Creek systems shall be implemented in consultation with Gujarat Forest Department. Year-wise implementation records including of spending of funds earmarked (Rs 372 Lakh) shall be maintained and submitted to Regional Office of the Ministry.
- xx. All the recommendations made in the Charter on Corporate Responsibility for Environment Protection (CREP) for the Copper smelters shall be implemented.
- xxi. During construction phase, housing for construction labour shall be provided with all necessary infrastructure and facilities such as green fuel for cooking, toilets, STP, safe drinking water, medical health care, etc. The housing may be in the form of temporary structures.
- xxii. Additional plantation shall be done against the trees removed from non-forest area during the project construction phase in 1:10 ratio.
- xxiii. A wall of at least nine feet height shall be constructed around the project boundary. Thick green belt of minimum 20 m width shall be developed around the project boundary to arrest fugitive dust emissions.
- xxiv. Greenbelt of 15 m width shall be developed all around the solid waste storage area.
- xxv. Care shall be taken to restrict cutting of trees to the minimum. For every tree cut minimum of 10 trees or the number as required by the state policy, whichever is more shall be planted.
- xxvi. There will be bridges across the two land parcels for accessibility. Flow of water from the Dhaneshwari Nadi shall not be disturbed. A green belt along with safety zone (towards riverbank with gabion and gully plugs to avoid erosion of plant if any) 50 meter wide shall be developed along the banks (side) of Dhaneshwari Nadi and 100 meter wide wherever storage of solid waste is proposed. This green belt would be developed by giving protection to the area and planting local species so that a natural ecosystem is created that may promote wilderness.
- xxvii. The runoff water from the raw material storage area, slag and phospho gypsum storage yard shall be treated, and recycled. The sludge from the treatment facilities shall be recycled back into plant or stored at the designated place.

- xxviii. In order to mitigate salinity ingress, provision for groundwater recharging by rainwater shall be provided inside and outside the plant at identified locations based on the lithological parameters derived through scientific investigation.
- xxix. Water consumption shall not be more than 8.39 m<sup>3</sup>/tonne of Copper cathode and that for the entire complex shall not be more than 10.83 m<sup>3</sup>/tonne of Copper cathode after stabilization of the plant. . Water Audit shall be conducted once in a year for entire complex comprising all the individual units and report submitted to Regional Office of the Ministry.
- xxx. Energy Consumption of the proposed plant shall not exceed 11 GJ/T of Copper Cathode at 100% capacity utilization and 17 GJ/T Copper for entire Complex after stabilization of the plant. Energy audit shall be conducted once in a year for entire complex and all the individual units, and the report submitted to Regional Office of the Ministry.
- xxxi. A statement on carbon footprint including the quantum of equivalent carbon dioxide being emitted by the existing plant operations will be prepared annually through some reputed institution. every year and report submitted to the Regional Office of the Ministry annually.
- xxxii. Copper Concentrate and Rock Phosphate shall be transported from port to plant by closed conveyor system or by covered trucks with tarpaulin. Dust extraction/suppression system to handle dust will be provided at the truck unloading point. The storage facility shall be in a covered shed and paved with concrete. Sludge collected from tyre washing facility shall be recycled into copper smelter.
- xxxiii. Copper Slag/Ferro Sand/Iron Silicate shall be transported through a covered conveyor system from point of generation to designated storage facility for reusing the same.
- xxxiv. Action plan to reduce storage of Copper Slag in five years after stabilization of the plant shall be prepared and implemented in a progressive manner so that at, any stage, the stacked quantity shall not exceed 5 years cumulative quantity. Records shall be maintained and annual audit shall be conducted and report submitted to the Regional Office of the Ministry.
- xxxv. Project Proponent shall obtain approval from Gujarat Pollution Control Board for location and design of the Secured Land Fill (SLF) and Phospho-gypsum Storage Yard sites. Piezo wells shall be installed based on the hydrogeology study around these sites for regular monitoring of groundwater quality.
- xxxvi. Phospho-gypsum and Chemical gypsum (generated in ETP) shall be transported through covered trucks to the storage facility and for further reuse and utilisation.
- xxxvii. Action plan to reduce storage of Phospho-gypsum and Chemical gypsum in 5m years shall be prepared and implemented in a progressive manner.so that, at any stage, the stacked quantity shall not exceed 5-year cumulative quantity. Records shall be maintained, and annual audit shall be conducted, and the report submitted to Regional Office of the Ministry.
- xxxviii. The Chemical Gypsum and Phospho-gypsum shall be analyzed for their chemical characteristics before considering their storage provision i.e. in same or separate land fill site.
- xxxix. Arsenic bearing sludge generated in ETP, Spent Catalyst from Sulphuric Acid Plant, Spent resins from DM, RO and Refinery Plant, salts from Multi Effect Evaporator/

MVR, other toxic substances (if any) shall be stored in Secured Land Fill (SLF) with prior approval from Gujarat Pollution Control Board. Records of the generation and storage of these hazardous material shall be maintained.

- xl. The 10 m wide approach road all along wastes storage yard shall be paved. Arrangements shall be made to spray water on the solid waste dumps of SLF and Phospho Gypsum Yard to control fugitive dust emission.
- xli. Spent oil and batteries shall be disposed of and lifted by the authorized recyclers.
- xlii. Occupational health surveillance for employees and workers shall be carried out on a regular basis as recommended by ICMR-NIOH study report and records shall be maintained as per Indian Factories Act. Health survey should be carried out every year regularly in all the villages within three kilometres from the boundary of the project site. Survey reports will have to be regularly submitted to the Regional office of the Ministry.
- xliii. Corporate Environment Responsibility (CER) Fund shall be utilised in the various projects as submitted in the field of education, livelihood, drinking water arrangement, water shed management, outside project boundary green belt development, etc. during 5 years of project construction time. CER Projects progress report shall be submitted to Regional Office of the Ministry in six monthly compliance report.
- xliv. Separate drainage system shall be laid to carry storm water runoff and industrial wastewater. Due precaution shall be taken while laying the drainage system to avoid mixing of storm water and industrial wastewater.

16.11.60 The Committee also recommended the MoEF&CC that a policy decision may be taken with respect to utilization of Copper Slag and Phospho-gypsum as a circular industrial economy measure.

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**ANNEXURE –1**

**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 equipment and machineries, process flow sheet (Quantitative) 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&CC/SEIAA shall be attached as an Annexure. A certified copy of the latest Monitoring Report of the Regional Office of the Ministry of Environment, Forest and Climate Change 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/PCC 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 PM<sub>10</sub>, PM<sub>2.5</sub>, SO<sub>2</sub>, NO<sub>x</sub>, CO and other parameters relevant to the project shall be collected. The monitoring stations shall be based CPCB guidelines and take into account the predominant 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 analysed 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. Corporate Environment Responsibility (CER)
    - i. To address the Public Hearing issues, an amount as specified under Ministry's Office Memorandum vide F.No. 22-65/2017-IA.III dated 1st May 2018 amounting to Rs. ....crores, shall be earmarked by the project proponent, towards Corporate Environment Responsibility (CER). Distinct CER projects shall be carved out based on the local public hearing issues. Project estimate shall be prepared based on PWD schedule of rates for each distinct Item and schedule for time bound action plan shall be prepared. These CER projects as indicated by the project proponent shall be implemented along with the main project. Implementation of such program shall be ensured by constituting a Committee comprising of the project proponent, representatives of village Panchayat & District Administration. Action taken report in this regard shall be submitted to the Ministry's Regional Office. No free distribution/donations and or free camps shall be included in the above CER budget
  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&CC 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&CC 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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**ANNEXURE-2**

**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. Trace metals Mercury, arsenic and fluoride emissions in the raw material.
12. Trace metals in waste material especially slag.
13. Trace metals in water
14. Details of proposed layout clearly demarcating various units within the plant.
15. Complete process flow diagram describing each unit, its processes and operations, along with material and energy inputs and outputs (material and energy balance).
16. Details on design and manufacturing process for all the units.
17. 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.
18. 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).
19. Details on toxic metal content in the waste material and its composition and end use (particularly of slag).
20. Details on toxic content (TCLP), composition and end use of slag.

### **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<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.
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 base bleaching 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.

**ADDITIONAL ToRs FOR 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 sulphides, 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.

**ADDITIONAL ToRs FOR 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.

**ADDITIONAL ToRs FOR 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.

**ADDITIONAL ToRs FOR 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 aluminium, 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






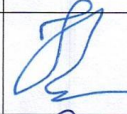
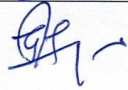

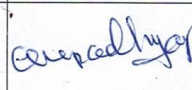
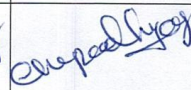

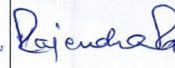
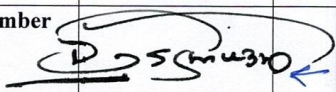
## **Executive Summary**


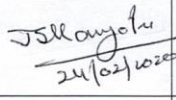
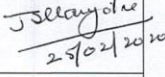


Executive summary of the report in about 8-10 pages incorporating the following:

- 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, with in 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

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**LIST OF PARTICIPANTS IN 16<sup>th</sup> MEETING OF EAC (INDUSTRY-I)  
HELD ON 24-25 FEBRUARY, 2020**

SL. No.	NAME AND ADDRESS	POSITION	ATTENDANCE SIGNATURE	
			24/02/2020	25/02/2020
1	Dr. Chhavi Nath Pandey, IFS(Retired) Email: <a href="mailto:pandeychhavinath55@gmail.com">pandeychhavinath55@gmail.com</a>	Chairman	PRESENT	← ABSENT →
<b>Members</b>				
2.	, Representative of Central Pulp and Paper Research Institute, Saharanpur. Email: <a href="mailto:director.cppri@gmail.com">director.cppri@gmail.com</a> , <a href="mailto:bipin_thapliyal@yahoo.com">bipin_thapliyal@yahoo.com</a>	Member	DR. K. SINGH 	
3.	, Representative of Indian Meteorological Department, New Delhi. Email: <a href="mailto:siddhartha.singh77@gmail.com">siddhartha.singh77@gmail.com</a>	Member	Siddhartha 24/02/2020	Siddhartha 25/02/2020
4.	Dr. G. Bhaskar Raju Email: <a href="mailto:gbraju55@gmail.com">gbraju55@gmail.com</a>	Member	← ABSENT →	
5.	Dr. Jagdish Kishwan, IFS (Retd.) Email: <a href="mailto:jkishwan@gmail.com">jkishwan@gmail.com</a>	Member		
6.	Dr. G.V. Subramanyam Email: <a href="mailto:sv.godavarthi@gmail.com">sv.godavarthi@gmail.com</a>	Member		
7.	Shri. Ashok Upadhyay Email: <a href="mailto:ahupadhy@rediffmail.com">ahupadhy@rediffmail.com</a>	Member		
8.	Shri. R.P. Sharma Email: <a href="mailto:rps3@hotmail.com">rps3@hotmail.com</a>	Member	Rajendra 	Rajendra 
9.	Dr. Sanjay Deshmukh Email: <a href="mailto:docsvd@yahoo.com">docsvd@yahoo.com</a>	Member		← ABSENT →

SL. No.	NAME AND ADDRESS	POSITION	ATTENDANCE SIGNATURE	
			24/02/2020	25/02/2020
10.	Prof. S.K. Singh Email: <a href="mailto:sksinghdee@gmail.com">sksinghdee@gmail.com</a> <a href="mailto:singhsk@email.com">singhsk@email.com</a>	Member		← ABSENT →
11.	Dr. R. Gopichandran Email: <a href="mailto:r.gopichandran@vigyanprasar.gov.in">r.gopichandran@vigyanprasar.gov.in</a>	Member	← ABSENT →	
12.	Shri. Jagannath Rao Avasarala Email: <a href="mailto:avasaralajagan@gmail.com">avasaralajagan@gmail.com</a>	Member	← ABSENT →	
13	Shri. J.S. Kamyotra Email: <a href="mailto:kamyotra@yahoo.co.in">kamyotra@yahoo.co.in</a>	Member	 24/02/2020	 25/02/2020
14.	Shri. Aravind Kumar Agrawal Director, MoEF&CC Email: <a href="mailto:dirind-moefcc@gov.in">dirind-moefcc@gov.in</a>	Member Secretary		

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