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

Summary record of the fourteenth (14th) meeting of re-constituted expert appraisal committee held during 23-24th December, 2019 for environmental appraisal of Industry-1 sector projects constituted under the provisions of Environmental Impact Assessment (EIA) notification, 2006.

The fourteenth meeting of the Re-Constituted Expert Appraisal Committee (EAC) for Industry-1 Sector constituted as per the provisions of the EIA Notification, 2006 for Environmental Appraisal of Industry-1 Sector Projects was held during 23-24th December, 2019 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 13h meeting held during 27-29th November, 2019 were confirmed by the EAC as already uploaded on PARIVESH.

24thDecember, 2019

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

TIME: 10:00 AM

14.14 Enhancement in production capacity of existing pelletizing plant from 6,00,000 TPA to 6,90,000 TPA through process optimization by **M/s. Ardent Steel Ltd** located at Village Phuljhar District Keonjhar, **Odisha**- [Online Proposal No. IA/OR/IND/124925/2019; File No. J-11011/112/2013-IAII(I)] **– Environment Clearance under para 7(ii) of EIA Notification, 2006 – regarding.**

14.14.1 **M/s. Ardent Steel Ltd**has made an online application vide proposal no. IA/OR/IND/124925/2019 dated 15/12/2019 along with Form – 2, updated Form I, pre-feasibility report & addendum to the EIA report and sought for environmental clearance for enhancement in sponge iron production from 0.60 MTPA to 0.69 MTPA under para 7(ii) of 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 project is appraised at the Central level.

Details submitted by the project proponent

14.14.2 M/s. Ardent Steel Limited is operating a 0.6 MTPA Pellet Plant and Coal Gasifier plant of 25800 Nm^3/hrat Village- Phuljhar, Tehsil- Telkoi, District- Keonjhar, State- Odisha Environmental Clearance for the existing unit was obtained from MoEF&CC vide letter no. J-11011/112/2013-IA.II (I) dated 29/03/2016.

14.14.3 The present proposal of M/s. ASL is for enhancement in production capacity of

pelletizing plant from 6,00,000 TPA to 6,90,000 TPA. The pellet plant has 4 nos of filter presses having capacity of (2 nos. x 75 TPH and 2 nos. x 35 T PH) which were already being used for pellet manufacturing. Out of (2 nos. x 35 TPH), one filter press of capacity of 35 TPH will be increased to 75 TPH to achieve the enhancement in pellet production from 0.6 MT PA to 0.69 MTPA. Other sections of the plant will be able to cope up with the expanded capacity due to inherent design margin to the tune of extra 15%. The fuel requirement is met from the producer gas generated in the gasifiers.

14.14.4 The certified compliance report for the existing unit was obtained from Regional office, Bhubaneswar vide letter No. 101-884/13/EPE dated 04.10.2019 wherein non-compliances such as installation of online stack monitoring device, third party environmental monitoring, AAQ monitoring, establishment of ETP, display board near the main gate of the company and newspaper advertisement regarding grant of EC have been reported. Subsequently, Project proponent has submitted action taken report for observed non-compliances on29.10.2019 which was examined and the report was furnished by the Regional Office on 11.11.2019 wherein it is stated that corrective action has been taken by the project proponent to comply to with the observed non-compliances.

14.14.5 There is no additional land requirement for the proposed expansion. The raw materials requirement for the proposed pellet plant expansion is given as below:

Raw Materials	Proposed requirement	Size in mm	Source of Raw Materials	Mode of Transport
Iron ore fines	7,15,530	0 – 10	Iron Ore belt of Joda- Barbil, Odisha	Road
Bentonite	4,140	0.074	From local traders of Bhuj, Gujarat product	Rail
Lime Stone/ Dolomite	3,450	0 – 10	Local Market / Sundargarh, Odisha	Road/Rail
Fuel for Gasifier- Coal fines	35,190	0 – 50	Paradeep	Road/Rail

14.14.6 There will be no additional water requirement for the proposed expansion and the ground water consumption will be limited to 500 KLD as at present.

14.14.7 Pelletization essentially consists of formation of green balls by rolling fine iron ore (Hematite)/Concentrate with critical amount of water and bentonite as binder. These green balls of nearly 8-16 mm size are then dried, preheated and fired, all under oxidizing conditions, to a temperature of around 1200 - 1250 deg. C. The sensible heat of the exhaust gases is recovered and is fed back in the Indurations operation.

14.14.8 The main workshops of pelletizing production line include: concentrate storage, bentonite storage, proportion building, Mixer building, pelletizing, green ball screening & distributing system, traveling grate-rotary kiln-annular cooler system, main I.D. fan system, product storing & transportation system and etc.

14.14.9 Baseline Environmental Studies were conducted during winter season from March 1st 2018 to 31st May 2018. Ambient Air Quality Monitoring (AAQM) was carried out at eight (8) locations during March 2018 to May 2018 and the baseline data indicates the

ranges of concentrations as PM_{10} – 49.2 to 89.3 µg/m^3; $PM_{2.5}$ – 25.1 to 49.2 µg/m^3; SO_2 – 5.1 to 9.6 µg/m^3; NO_2 – 11.3 to 18.2 µg/m^3. AAQ modeling study emissions indicates that the maximum incremental GLCs after the proposed amendment is 0.76 µg/m^3 with respect to PM_{10}.

14.14.10 Ground water quality has been monitored at eight locations in the study area and analyzed. pH: 6.6-7.2, Total Hardness: 48-59 mg/l, Chlorides: 30-66 mg/l. Heavy metals are within the limits. Surface water samples were analyzed from 8 locations. Surface water samples were analyzed from 8 locations: pH: 7.2-7.6, Total Hardness: 64-71 mg/l. Heavy metals are within the limits.

14.14.11 The solid waste generation will marginally increase as the plant production increases by 15%. The solid waste generated from the furnace includes Dust generated from ESP of Pellet Plant, Dust generated from de-dusting units installed before various stacks, Coal ash generated from the gasification section and broken green pellets. All the said solid wastes except coal ash shall be recycled back to the feed system of the pellet plant.Coal ash will be utilized for cement making, brick making, low /waste land reclamation, etc.

14.14.12 The expansion project will not have any addition of capital cost as the proposal does not involve any additional infrastructure.

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

14.14.14 Name of the Consultant: - M/s Centre for Envotech & Management Consultancy Pvt. Ltd. (Sl. No. 24, List of QCI Accredited Consultant Organizations (Alphabetically) Rev. 82, Dec. 05, 2019)

Observations of the Committee

14.14.15 The Committee noted that as per the findings of the EIA report, there is no change in land and water requirement. The Committee considered the instant proposal under para 7(ii) (a) of the EIA Notification, 2006 and dispense with the requirement of conducting fresh public consultation.

Recommendations of the Committee

14.14.16 In view of the forgoing and after detailed deliberations, the committee recommended the project for grant of Environmental Clearance under para 7(ii) 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-III dated 9/8/2018 pertaining to pellet plants.

i. Ground water extraction shall be limited to 500 KLD as at present. No additional ground water extraction is permitted.
ii. No slime pond is permitted.
iii. Green belt shall be developed covering 33% of the area in a time frame of two years.
iv. Provision for industrial vacuum cleaner to control the fugitive emissions shall be made.
v. Particulate emissions from the stacks shall be less than 30 mg/Nm^3 with bag house as APCD. Emission from ESP shall be less than 50 mg/Nm^3.

14.15 Proposed Expansion of Pellet Plant with Beneficiation (1800 TPD to 4800 TPD), DRI Plant (300 TPD to 1000 TPD), SMS Plant (0.1 MTPA to 0.3 MTPA), Captive Power Plant (12 MW to 38 MW) and Rolling Mill (0.25 MTPA) of **M/s Shri Mahavir Ferro Alloys Pvt. Ltd.** located at Jiabahai, Kalunga Industrial Estate, Kalunga, **Dist-Sundargarh, Odisha -** [Online Proposal No. IA/OR/IND/5857/2007;File No. J-11011/606/2007-IAII(I)] **– Environment Clearance – regarding**

14.15.1 M/s Shri Mahavir Ferro Alloys Private Limited has made an online application vide proposal no. IA/OR/IND/5857/2007 dated 27/11/2019 along with copy of EIA/EMP report and Form – 2 seeking Environmental Clearance (EC) under the provisions of 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 project is appraised at the Central level.

Details submitted by the project proponent

14.15.2 The proposed expansion of M/s Shri Mahavir Ferro Alloys Pvt. Ltd located in Kalunga Industrial Estate, Village: Jiabahal, Tehsil: Lathikata, District: Sundargarh, State: Odisha was initially received in the Ministry on 3/11/2017 for obtaining Terms of Reference (ToR) as per EIA Notification, 2006. The project was appraised by the Expert Appraisal Committee (Industry) [EAC(I)] during its 28th meeting held on 12-14th March 2018 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 28/03/2018 vide Lr. No. J-11011/606/2007-IA.II(I).

14.15.3 Based on the ToRs prescribed to the project, the project proponent submitted an application for environmental clearance to the Ministry online on 27/11/2019 vide Online Application No. IA/OR/IND/5857/2007.

14.15.4 The project of M/s Shri Mahavir Ferro Alloys Pvt. Ltd located in Kalunga Industrial Estate, Village: Jiabahal, Tehsil: Lathikata, District: Sundargarh, State: Odisha is for setting up of a new DRI Plant (300 TPD to 1000 TPD), SMS Plant (0.1 MTPA to 0.3 MTPA), Captive Power Plant (1x12 MW to 38 MW), Rolling Mill (0.25 MTPA), Pellet Plant with Beneficiation (1800 TPD to 4800 TPD).The existing project was accorded environmental clearance vide Lr. no. F.No. J-11011/606/2007-IA II(I) dated 29th January 2008.

14.15.5 The certified compliance report for the existing unit was obtained from Regional office, Bhubaneswar vide letter No. 101-330/07/EPE dated 26/11/2019 wherein non-compliances such as third-party environmental monitoring, establishment of ETP, green belt development, non-submission of six-monthly compliance report and environmental statement have been reported. Subsequently, Project proponent has submitted action taken report for observed non-compliances on 4/12/2019 which was examined and the report was furnished by the Regional Office on 17/12/2019 wherein it is stated that corrective action has been taken by the project proponent to comply to with the observed non-compliances.

14.15.6 The existing and proposed capacity various units are given as below.

Sl. No.	Unit/Plant	Existing Capacity	Additional Capacity Proposed	Final Capacity after Expansion
1	Coal Washery	100 TPH	---	100 TPH
2	Pellet Plant with Beneficiation	0.60 MTPA (1800 TPD)	1.00 MTPA (3000 TPD)	1.6 MTPA (4800 TPD)
3	DRI Plant	0.10 MTPA (3x100 TPD)	0.23 MTPA (2x350 TPD)	0.33 MTPA (1000 TPD)
4	SMS Plant	0.1 MTPA	0.2 MTPA	0.3 MTPA
5	Rolling Mill	--	0.25 MTPA	0.25 MTPA
6	Captive Power Plant	12 MW (AFBC- 8 MW, WHRB- 4 MW)	26 MW (AFBC - 12 MW, WHRB - 2x7 MW - 14 MW	38 MW

14.15.7 The total land required for the project is 44.66 ha, which is entirely of Industrial land, No /forestland involved. The entire land has been acquired for the project. The Sankh River passes through the project area (p./c). 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.

14.15.8 The topography of the area is flat (flat/undulated)and reported to lies between 220 18' 19" to 220 19' 00"N Latitude and 840 45' 45" to 840 46' 27" E Longitude in Survey of India topo sheet No.73B/11, 12, 15 & 16at an elevation of 200 m AMSL. The ground water table reported to ranges between 4-8 mbgl below the land surface during the post-monsoon season and 8-10 mbgl below the land surface during the pre-monsoon season.

14.15.9 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 for corridor for Schedule-I fauna.

14.15.10 The raw materials requirement for the proposed expansion is furnished as below.

Raw Materials	Quantity	Source
DRI Plant (700 TPD)		
Coal	315000 TPA	MCL, SECL and Visakhapatam Port
Pellets	335000 TPA	Inhouse Production
Dolomite	12600 TPA	RA Jalan Mines
SMS Plant(0.2 MTPA)		
Sponge Iron	205000 TPA	Inhouse Production
Pig Iron	17400 TPA	Tata BSL Jajpur

Ferro Alloys & Non-Ferro Alloys	2750 TPA	Tata BSL Jajpur
MS Scrap	10100 TPA	Inhouse Production
Rolling Mill (0.25 MTPA)		
Steel Billets	255000 TPA	Inhouse Production
Captive Power Plant (26 MW = AFBC-12 + WHRB- 14 MW)		
Dolochar	60000 TPA	Inhouse Production
Coal	75000 TPA	MCL, SECL and Visakhapatnam Port
Pellet Plant (3000 TPD)		
Iron Ore Fines(Dry)	1292308 TPA	OMC Mines
Bentonite	15231 TPA	Chhattisgarh
Dolomite/Limestone	15231 TPA	RA Jalan Mines
Coke	34615 TPA	IOCL

14.15.11 The targeted production capacity of the Existing Project is 0.1 MTPA and Proposed Project is 0.2 MTPA, Total production capacity for Existing & Expansion Project is 0.3 million TPA. The ore for the plant would be procured from (linkages/Mining). The ore transportation will bed one through Rail/Road (Rail/Road/Conveyor/Slurry Pipeline).

14.15.12 The water requirement of the proposed project is estimated as 170 m^3/hr, which will be met from Sankh River. The permission for drawl of surface water is obtained from Department Water Resource, Govt. of Odisha. vide Lr. No. 10542 date 17/04/2010.

14.15.13 The power requirement for Existing & Expansion project is estimated as 40.5 MW, out of which 38 MW will be obtained from the Captive Power Plant and balance will be purchased from State Electricity Board.

14.15.14 Baseline Environmental Studies were conducted during Winter season i.e. from 1st December 2017 to 28th February 2018. Ambient air quality monitoring has been carried out at 8 locations during December 2017 to 28th February 2018 the data submitted indicated: PM_{10} (47.5 µg/m^3 to 83.8 µg/m^3), $PM_{2.5}$(24to 46.4 µg/m^3), SO_2(4.1 to 13.1 µg/m^3) and NOx (9.2to 18.2 µg/m^3). The results of the modeling study indicates that the maximum increase of GLC for the proposed project is 2.17 µg/m^3 with respect to the PM_{10},0.54 µg/m^3 with respect to theSO_2, 0.12 µg/m^3 with respect to the NOx.

14.15.15 Ground water quality has been monitored in 08 locations in the study area and analyzed pH:7.1 to 7.5, Total Hardness: 40 to 112mg/l, Chlorides:9to18.99 mg/l, Fluoride: 0.06 to 0.1mg/l. Heavy metals are within the limits. Surface water samples were analyzed from 08 locations. pH: 7.08 to 7.9; DO:5.4 to 7.7mg/l and BOD: 2.0 to 10.4 mg/l.

14.15.16 Noise levels are in the range of 42.9 to 75.5 dBA for daytime and 32.3 to 68.2 dBA for nighttime.

14.15.17 It has been reported that a total of 20,420 tons/month of waste will be generated due to the project, out of which 18,920 tons/month will be used in fly ash brick making,

Cement Manufacturing and 1500 tons/month will be dumped in the earmarked dump yard. It has been envisaged that an area of 7.93 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. The details of solid waste generation and its utilization is given as below.

Solid Waste & Hazardous Waste Generation and Management

Sl. No.	Source	Total (TPY)	Mode of Disposal/Utilization
1	Waste Oil & Lubricant	3.5KL	Shall be disposed to authorised agency
2	DM plant resin	0.5KL	Shall be disposed in properly constructed pit as per CPCB norms
3	Refractory waste	1	Into disposal site
4	Dolochar	60,000	AFBC boiler
5	Solid Waste (Beneficiation Tailing)	75,000	Cement Plant /Into disposal site (Abandoned Quarry)
6	ESP & In plant Dust	7000	Into disposal site (Abandoned Quarry)
7	Kiln Accretion	18000	Village road construction & low land filling, disposal
8	IF & LRF Slag	20550	Village road construction & low land filling, disposal
9	Fly Ash	64500	Cement Plant – 30000 TPY Local Fly Bricks Manufacturing Units- 34500 TPY.

14.15.18 It has been reported that the Consent to Establish/Consent to Operate from the Odisha State Pollution Control Board / Pollution Control Committee obtained vide Lr. No 2864/IND-I-CON-3294 dated 23-03-2019 and consent is valid up to 31-03-2020.

14.15.19 The Public hearing of the project was held on 26th September 2019 at IDC Play Ground, Kalunga, P.S.- Brahmanitarang, Dist. Sundargarh, Odisha. under the chairmanship of Mr. Nikhil PavanKalyan (Collector & District Magistrate Sundargarh) for setting up of DRI Plant (300 TPD to 1000 TPD), SMS Plant (0.1 MTPA to 0.3 MTPA), Captive Power Plant (1x12 MW to 38 MW), Rolling Mill (0.25 MTPA), Pellet Plant with Beneficiation (1800 TPD to 4800 TPD). The issues raised during public hearing are, Economic Development, Infrastructure Development, Health Care Facility, Sports, Recreation and Community Centre, Drinking Water Facility, Environment Protection Control, Education facility which have been addressed in the EIA report.

14.15.20 The capital cost of the project is INR 362 Crores and the capital cost for environmental protection measures is proposed as INR1438 Lakhs. The annual recurring cost towards the environmental protection measures is proposed as INR 319 Lakhs. The employment generation from the proposed project / expansion is 950.

14.15.21 An amount of INR 2.97 crores is earmarked towards Corporate Environment Responsibility (CER) related activities in a time frame 4 years.

14.15.22 Greenbelt will be developed in 37.60 Acres which is about 34% of the total acquired area. Total area is 110.373 Acres (50.080 Acres in the existing plant and 60.293 Acres in expansion plant). Hence total green belt area will be 37.60 Acres, out of 37.60 Acres,

green belt is already developed in 18 Acres and rest 19.6 Acres will be covered in coming 3 years i.e. during 2020-2022. Hence total trees (1500 tress/hectares) will be planted in coming 3 years.

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

14.15.24 Name of the Consultant: - M/s Centre for Envotech & Management Consultancy Pvt. Ltd. (Sl. No. 24, List of QCI Accredited Consultant Organizations (Alphabetically) Rev. 82, Dec. 05, 2019)

Recommendations of the Committee

14.15.25 In view of the forgoing and 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-III dated 9/8/2018 pertaining to Integrated Steel Plants.

i. Green belt shall be developed in 40 acres of land having tree density of 1000 trees per acres in a time frame of two years.

ii. No ground water abstraction is permitted.

iii. No slime pond is allowed.

iv. Provision for industrial vacuum cleaner to control the fugitive emissions shall be made.

v. Particulate emissions from the stacks shall be less than 30 mg/Nm^3 with bag house as APCD. Emission from ESP shall be less than 50 mg/Nm^3.

vi. Scheme to harvest rain water more than the 100 % of annual water consumption shall be implemented.

vii. An amount of INR 2.97 Crores earmarked towards CER related activities shall be implemented in a time frame of four years.

14.16 Capacity expansion from 4,20,000 TPA to 5,04,000 TPA in Hydro-I Hydro-II Zinc Smelter through debottlenecking of **M/s Hindustan Zinc Ltd**., located at Chanderiya Lead Zinc Smelter, P.O: Putholi, **District Chittorgarh, Rajasthan**- [Online Proposal No. IA/RJ/IND/124999/2019; File No. J-11011/279/2006-IAII(I)] **– Environmental Clearance under Para 7(ii) of EIA Notification, 2006 – regarding.**

14.16.1 **M/s Hindustan Zinc Ltd** has made application vide online proposal no. **IA/RJ/IND/124999/2019** dated 12/12/2019 along with the application in prescribed format (Form-I) seeking Environmental Clearance under para 7(ii) of EIA Notification, 2006 for the project mentioned above. The proposed project activity is listed at S. No. 3(a) Metallurgical industries (ferrous & non-ferrous) under Category "A" of the schedule of the EIA Notification, 2006 and appraised at Central Level.

Details submitted by the project proponent

14.16.2 Existing EC obtained is vide F. No: J - 11011/158/2003/IA-II (I)) dated 31st March, 2004 for Hydro Plant - I (from 1,70,000 TPA to 2,10,000 TPA) &F. No: J-11011/279/2003/IA-II (I)) dated 6th December, 2006 for Hydro- II (2,10,000 TPA).

14.16.3 Total area existing of both Hydro Plants – I & II: 20 ha + 26.5 ha = 46.5 ha out of

CLZS complex total area: 335.89 ha. No additional area is required for Proposed Enhancement of Zinc Production Capacity for both Hydro Plants–I & II. The status of production details in accordance with consent is as below:

i. Hydro-I Zinc Production: 2,10,000 TPA as per CTO vide letter no: F F(CPM)/Chittorgarh (Gangrar)/2(1)/2016- 2017/6058-6060 Dated 25th August 2016; CTO Renewal is under process at RSPCB; application was submitted vide Application ID: 213271 dated 27/04/2018 to RSPCB.

ii. Hydro-II Zinc Production:2,10,000 TPA as per CTO vide letter no: F (CPM)/Chittorgarh (Gangrar)/2(1)/2016-2017/3302-3305 dated 18th December 2019 valid upto 31st January 2024.

14.16.4 The summary of proceedings of earlier Public consultation conducted on 29.06.2006 as given below.

S.No.	Issues raised	Response to Public Hearing	Status	Budget & Time frame
1.	Industry will provide job as per their eligibility.	Already 80% job is been provided to locals of nearby villages by company	As per requirement /it is in process. Preference is given to locals.	Continuous
2.	Industry will participate in development of chittorgarh district in social and economic respect.	Company have Carried out various CSR activities in consultation with villagers and locals of chittorgarh.	Regular involvement carried out in various activities with Local administration.	Continuous
3.	Industry will incorporate effective pollution control measures in upcoming project.	Company have adopted world class techniques for Pollution control measures specially for air (we installed 5 CAAQMS stations, online stack analysers attached to RSPCB /CPCB directly, for acid plant company have adopted state of art like technology like DCDA (Double conversion and double air and TGT Plant with super CGM catalyst which add to controlled emission levels much below the specified norms. For waste water management company have two centralised ETP followed by RO and tertiary RO. For HW management company practice secured landfill as per guideline of	Completed	Involvement in continuous improvement.

S.No.	Issues raised	Response to Public Hearing	Status	Budget & Time frame
		CPCB. More than 33% plantation is developed within the plant premises.		
4.	Vedanta university should start in Chittorgarh.	Company have started vedanta College in Sikar and also various education programs is been conducted under CSR activities.	Completed No of educational programmes carried out by HZL in collaboration with government /NGO.	Continuous.
5.	Environmental funds shall be created for any disaster in Air,water, HW.	Already company have environment fund which is covered in public liability insurance act 1991.	Completed	Continuous
6.	Reduce SO2 emission.	Company is maintaining emission much below statutory norms with latest Technology. (Statutory norms of SO_2 emission is decreased from 4kg/ton of total production to 2kg/ton). (1) After PH we installed Tail gas treatment plant in our Pyro Plant(2) Used high grade catalyst with Cesium coated for best conversion(3) Change heat exchanger etc(4) Online analyzer installed ,which was connected with RSPCB/CPCB.	Emissions are maintained well within norms, regular monitoring is been done as per statutory requirement and results submitted time to time to authorities.	Continuous
7.	Greenbelt development in periphery	Greenbelt is already developed all along periphery with about 33% green area already covered with fast growing local species by company.	Already more than 33% area is covered as green and gap filling is continuous process at site.	Continuous
8.	Zero discharge standard to be maintained by industry.	Company is already Maintaining Zero discharge at site and is in process of installing Multi effect evaporator to support this Zero discharge ambition	ZLD is maintained at site and to strengthen 600 KLD MEE/MVR is under	Continuous

S.No.	Issues raised	Response to Public Hearing	Status	Budget & Time frame
			construction at site.	

14.16.5 The Certified compliance report of existing environmental clearances (J-11011/158/2003-IA II(I) Dt 31.03.2004; J-11011/279/2006-IA II(I) Dt 06.12.2006) from the Regional Office of the MoEF&CC, Lucknow was obtained vide letter File No: IV/ENV/R/Ind- 29/285/2004(285-371)/395 Dated 15.11.2019. All non-compliances have been complied. Reply with photographs is already been submitted to MOEF RO vide HZL/CLZS/ENV/33 dated 7.12.2019.

14.16.6 Environmental Baseline studies have been carried for a month from 1st October to 31st October 2019. The ambient air quality levels has been measured in 10 locations as per the NAAQ 2009 are carried out. The major parameters PM_{10}, $PM_{2.5}$, SO_2, NOx and other parameter are found to be within the prescribed limits the ranges are given below:

Sr.No	Parameters	Range (µg/m^3)	Limits (µg/m^3)
1	PM_{10}	65-95	100
2	$PM_{2.5}$	25-58	60
3	SO_2	10.2-22.3	80
4	NO_2	15.3-32.2	80

14.16.7 The Proposed Enhancement of Zinc Production Capacity (from 4,20,000 TPA to 5,04,000 TPA) of both Hydro Plants – I & II under 7 (ii) clause of EIA notification, 2006 (20% onetime capacity expansion). Existing Unit is based on roast leach electro-winning technology. Now, it is proposed to increase the capacity from 4,20,000 TPA to 5,04,000 TPA (20%) in its Zinc Smelter I & II on combined basis by improving the current efficiency in cell house from 89% to 93%, increasing current input in cell house from 190 Ka to 200 kA, Debottlenecking and increasing the number of cells from 124 to 132 in Hydro-I cell house.

14.16.8 Proposed resources requirement (Land/raw materials/water/power) vis-à-vis with granted Environmental Clearance

Unit	As per EC (Dec'2006)	Existing Status	Additional Proposed Capacity	Total Capacity After Proposed Enhancement
Hydro Smelter	420000 TPA	420000 TPA	84000 TPA	504000 TPA (20% Expansion)
Land Requirement	335.89 ha	335.89 ha	-	No Change
Water Requirement	30670 cum/day	30670 cum/day	-	No Change
Source of Water	Gosunda Dam (Captive)/STP Udaipur/Proposed STP of Chittorgarh/Bhilwara/Other Proposed STPs			
Power Requirement	220 MW	220 MW	20 MW	240 MW
Power Source	Captive Thermal Power Plant / WHRB (18.8 MW)/ Captive Solar Power Plant/ Rooftop Solar Panels/Floating Solar Panels/ AVVNL (4.59 MW DG Sets for Emergency Purpose)			
Raw Material	Concentrate: 677177 TPA	677177 TPA	21282 TPA	698458 TPA

	Calcine:- 206000 TPA	206000 TPA	131990 TPA	337990 TPA
Employment	5141	5141	-	No Change
Project Cost (Rs in Cr)	2647	2647	138.5	2785.5
Environment Protection cost (Rs in Cr)	190.1	190.1	48.5	238.6
• No Change in existing Process Technology (roast leach electro-winning Technology). • No Change in land & Water requirement. • 20% Expansion in Hydro Plant by improving the current efficiency, 8 new cells installation & Debottle necking project.				

14.16.9 Pollution load quantification (Air/Water/Solid & hazardous waste/traffic) vis-à-vis with granted Environmental Clearance after enhancement of hydro plants – I & II.

Name of the Unit	**Stack Emission**	
	Stack Connected to	**PM Norms (mg/Nm^3)**
Hydro Plant (H-I)	Acid plant-Mist	50
	Bag house attached to melting furnace no. 1 (a)	50
	Bag house attached to melting furnace no. 2 (a)	50
	Bag house attached to dross milling	50
	Bag house attached to Zinc Dust	50
Hydro Plant (H-II)	Acid plant-Mist	50
	Bag house (a) & (b) attached to melting furnace No. 1	50
	Bag house attached to dross milling	50
	Bag house attached to Zinc dust plant	50

SO_2 Emission from Acid Plant	
Acid Plant	**SO_2 Norms Emission Factor (kg/Tonne of acid Production)**
Acid plant-(Hydro-I)	2
Acid plant-(Hydro-II)	2

14.16.10 The proposed project is within the existing leaching circuit of Hydro Plants I & II complex. The proposed enhancement project will not have any additional air pollution source. The pollution load after proposed enhancement of Hydro Plants will be well within the norms by existing pollution control measures and stacks. The impact of the existing plant has been covered in the baseline environmental monitoring studies.

Solid Waste Generation & Management Details Of Hydro Plants -I & II

Sr. No.	Type of Waste Quantity (Units)	Granted Quantity (Units)	Additional Quantity (Units)	Total (After Enhancement) Quantity (Units)	Method of Treatment and Disposal
1	Cooler cake (MTPA)	5,000	1000	6000	Reuse/Recycle/Sale to registered recycler/Co-processing/ Disposal in SLF
2	Anode mud (MTPA)	2,200	0	2200	Reuse/Recycle/Sale to registered recycler /Disposed in SLF
3	Used/Spent oil (KLPA)	80	16	96	Reuse/ Sale to registered recycler
4	Waste oil (KLPA)	270	0	270	Reuse/Sale to registered recycler
5	Cobalt cake (MTPA)	1,000	0	1000	Reuse/Recycle/Sale to registered recycler /Disposed in SLF
6	Purification cake / Enrichment cake (MTPA)	12,520	0	12520	Reuse/Recycle/Sale to registered recycler /Disposed in SLF
7	Mercury and Mercury compounds	22 MTPA	-22 MTPA	0	Reuse/Recycle/Sale to registered recycler /Disposed in SLF
8	Spent catalyst in KL	60	0	60	Sale to registered recycler/disposed in SLF
9	Non-ferrous Sludge from ETP and scrubbers	9,600 MTPA	4,000	13,600	Reuse/Recycle/Sale to registered recycler /Disposed in SLF/Co processing in Cement industries
10	Discarded containers/barrels/liners used for Haz. Waste/chemicals	1,400 No's/Y	0	1,400 No's/Y	Reuse/Recycle/Sale to registered recycler /Disposed in SLF
11	Flue gas cleaning residue	2.0 MTPA	0	2.0	Reuse/Recycle/Sale to registered recycler /Disposed in SLF

Sr. No.	Type of Waste Quantity (Units)	Granted Quantity (Units)	Additional Quantity (Units)	Total (After Enhancement) Quantity (Units)	Method of Treatment and Disposal
12	Spent ion exchange resin containing toxic metal	1.0 MTPA	0	1.0	Sale to registered recycler/disposed in secure land fill
13	Water purification Resin	2.0 MTA	0	2.0	Sale to registered recycler/disposed in secure land fill
14	Filter and Filter material which contain organic compound	100 MTA	0	100	Sale to registered recycler/disposed to secure land fill/approved Incinerator
15	Oil Soaked Jute/cotton waste/Used PPE's	-	10.0	10.0	Sale to registered recycler/disposed to secure land fill/approved incinerator
16	Jarosite cake*	3,00,000	-1,00,000 (after Fumer)	2,00,000	Utilization in Cement Manufacturing/ Road/Rail embankment/Concrete construction/ disposal in Lined Jarofix yard
17	MEE Salt	-	5000	5000	Recovery of Glauber Salt/ Disposal in SLF

**Jarosite has been excluded from the schedule 1 of the Hazardous Waste Management Rules 2016 as the high volume low effect waste.*
*** As per latest CPCB Guideline Calomel is now been reclassified as By product.*

14.16.11 Air modeling has been carried out for PM (cumulative) and also for other criteria pollutants such as SO_2 and SO_3/acid mist. Acid plants in Hydro-I and Hydro-II will generate SO_2 and SO_3/acid mist during operation. The emissions from acid plants (existing and operating unit) along with additional load has been considered for estimation of net pollutant load of Zinc Smelter. The details of predicted incremental concentrations (GLCs) of PM, SO_2 and SO_3/acid mist are as below:

i. Predicted 24 Hourly Short Term Incremental Concentrations (GLCs) for Particulate Matter:

Parameters	Concentration (µg/m^3)	Distance (km)	Direction
Proposed capacity enhancement of zinc production activities			
PM	0.58	1.0	SW

The PM Concentration will not exceed the Prescribe limit of 50 mg/Nm^3

ii. Predicted 24 Hourly Short-Term Incremental Concentrations (GLCS) (SO_2, SO_3 / Acid Mist)

Parameters	**Existing**		**After Expansion**		**Distance/ Direction**
	ppm/mg/Nm3	**(µg/m^3)**	**ppm/mg/Nm3**	**(µg/m^3)**	
Proposedcapacityenhancement of zinc production activities					
SO_2	180 ppm	1.55	200 ppm	1.74	1.0 km, SW
SO_3 / Acid Mist	32.4 mg/Nm^3	0.10	38.9 mg/Nm^3	0.12	1.0 km, SW

Note: Emission Source: Acid Plant Main Stack; Source: CLZS -HZL

The SO_2 Concentration will not exceed the Prescribe limit of 2 kg/metric ton of acid produced and SO_3/Acid Mist limit of 50 mg/Nm^3

14.16.12 The net increase in SO_2 concentrations is about 0.19 µg/m^3 which is insignificant due to capacity expansion from 4,20,000 TPA to 5,04,000 TPA (20%) of Zinc Smelter-I & II on combined basis. Hence, there will be no significant impact on air quality due to the proposed expansion.

Resultant Baseline Concentrations (µg/m^3)

Parameter	**Incremental GLC**	**Background Level (max)**	**Resultant concentration**	**NAAQS**
PM_{10}	0.58	79	79.58	100
SO_2	0.19	17.3	17.49	80
SO_3/Acid mist	0.12	-	-	-

14.16.13 The estimated cost of the proposed enhancement of zinc production capacity will be Rs. 138.5 Crores (for Hydro-I Plant & Hydro –II Plant) including the proposed Environmental budget is about Rs. 48.5 crores for proposed enhancement of zinc production capacity

14.16.14 The details of proposed CER activities are as given below:

Area of Intervention	**Expenditure in Lakhs**
Microenterprise development	50
Skilling of local youths	40
Drinking water and pipeline	30
Plantation of saplings in villages and community land	10
Total	**130**

14.16.15 No any litigation pending in any court related to project or activity. No show cause notices/direction issued under Air Act, Water Act and Environment (Protection) Act, 1986.

14.16.16 Name of the consultant: M/s. Vimta Labs [S.No.162, List of Accredited Consultant Organizations (Alphabetically) Rev. 82, Dec. 05, 2019].

Observations of the Committee

14.16.17 The Committee noted that the project proponent has not submitted the proper justification for considering the proposal under clause 7(ii) of EIA Notification, 2006. Further, pollution load assessment for pre and post-expansion is required.

Recommendations of the Committee

14.16.18 After detailed deliberations, the Committee recommended to seek the following additional information for consideration of the proposal further.

i. Justification for considering the proposal under clause 7(ii) of EIA Notification, 2006 shall be provided.

ii. Pollution load assessment for pre and post-expansion shall be furnished.

14.17 Greenfield Steel Plant (Pellet Plant- 600000 TPA, DRI plant 420000 TPA, Billet Making using Induction Furnaces-400000 TPA, Automotive Components Manufacturing Facility120000 TPA using Billets, Ferroalloy Plant-52000 TPA, and Captive Power Plant- 34 MW using WHRB and AFBC) by **M/s. Pushp Steels & Mining Private Limited** located at Borai Industrial Growth Centre, Rasmara, **District Durg, Chhattisgarh** [Online proposal No. IA/CG/IND/85734/2018; MoEF&CC File No. J-11011/393/2018-IA-II(I)] **– Environment Clearance - regarding.**

14.17.1 M/s. Pushp Steels & Mining Private Limited has made an online application vide proposal no. IA/CG/IND/85734/2018 dated 19/12/2019 along with Form 2 and EIA report and sought for 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 project is appraised at the Central level.

Details submitted by the project proponent

14.17.2 The greenfield project of M/s Pushp Steels & Mining Private Limited is located in Borai Industrial Growth center, Village Rasmara, Tehsil Durg, District Durg, Chhattisgarh was initially received for obtaining Terms of Reference as per EIA Notification 2006. The project was appraised by the Expert Appraisal Committee (Industry EAC-1) during it 2ndmeeting held on 10-12thDecember, 2018 and prescribed TORs to the project for undertaking detailed EIA study for obtaining Environmental Clearance. Accordingly, the Ministry has prescribed TORs to the project on 18-12-2018 vide letter No IA-J.11011/393/2018.IA-II(I) and subsequently amended on 28/06/2019.

14.17.3 Based on the ToRs prescribed to the project, the project proponent submitted an application for Environmental Clearance to the Ministry online on 19/12/2019.

14.17.4 The project of M/s Pushp Steels & Mining Private Limited is located in Borai Industrial Growth Centre, Village Rasmara, Tehsil Durg, District Durg, State Chhattisgarh is for settling up a new Steel Plant for production of is 0.6 million TPA iron ore pellets, 0.32 million TPA steel and 0.052 million TPA ferroalloys.

14.17.5 The proposed capacity for different products for the new site is as follows:

S.No.	Name of Unit	No of Unit	Capacity of Each Unit	Total Production Capacity with products
i.	Iron Ore Beneficiation cum Pellet Plant	1	600000 TPA	600,000 TPA, Pellets
ii.	Coal Gasifier	1 2	7000 Nm^3/hr 10000 Nm^3/hr	27000 Nm^3/hr Producer gas
iii.	DRI Plant	2 1 1	100 TPD 350 TPD 500 TPD	350,000 TPA Sponge Iron
iv.	Induction Furnace (billets) LRF- 15 T & 30 T) & CCM-2 Nos	4 3	15 tons 12 tons	320,000 TPA Billets
v.	Ferroalloy Plant	3	9 MVA	52,000 TPA (FeMn, FeSi, SiMn)
vi.	Press Machines (for making various automotive components using billets)	1 1 1 2	125 tons 60 tons 40 tons 25 tons	120,000 TPA Automotive parts
vii.	Captive Power Plant (electricity)	-	25 MW (WHRB) 10 MW (AFBC)	35 MW Electricity

14.17.6 The total land required for the project is 11.421 ha, 100% is industrial land. No forest land is involved. The entire land has 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.

14.17.7 The topography of the area is flat and reported to lie between 21°11'26.14"N to 21°11'43.80"N and 81°12'47.58"E to 81°13'01.00"Ein Survey of India Topo Sheet No. 64G/4 at an elevation of 220 m AMSL. The ground water table reported to ranges between 12 m below the land surface during the post-monsoon season and 10 m below the land surface during the pre-monsoon season.

14.17.8 No national park/wildlife sanctuary/biosphere reserve/tiger reserve/elephant reserve etc. are reported to be located in the core and buffer zone of the project. The area also does not report to form corridor for Schedule-I fauna. As per the listof flora and fauna, there is no presence of no Schedule-I fauna in the study area.

14.17.9 The raw materials required for the proposed project activity along with its source and mode of transportation is given as below:

S.No.	Name	Quantity, TPA	Source	Transportation
1	Iron ore fines	733340	Captive mines, purchase from	Rail and road

S.No.	Name	Quantity, TPA	Source	Transportation
			NMDC/ OMDC /other mines	
2	Iron ore lumps	251500	Captive iron ore mines	Rail and road
3	Coal	501290	Purchase from CIL, Imported	Rail and road
4	Coke	23400	Local purchase	Road
5	Manganese Ore	114400	Purchase from MOIL, Balaghat	Rail and road
6	Limestone	6000	Local purchase	Road
7	Dolomite	27000	Local purchase	Road
8	Lime	12000	Local purchase	Road
9	MS Scrap	43170	Local purchase	Road
10	Bentonite	6000	From Kutch	Road
11	Carbon paste	930	Local purchase	Road

14.17.10 The targeted production capacity of the project is 0.6 million TPA iron ore pellets, 0.32 million TPA steel and 0.052 million TPA ferroalloys. The ore for the plant will be procured from captive mines and open market. The ore transportation will be done through Rail and Road. The WHRB will be made operational after the installation of envisaged sponge iron units.

14.17.11 The water requirement of the project is 5000 m3/day. CSIDC has committed to supply water to this project. Water will be sourced from Shivnath river. No groundwater will be taken for this project except for drinking water purpose. Permission for water drawl has been obtained from Chhattisgarh State Industrial Development Corporation on 07/09/2011.

14.17.12 The power requirement of the project is estimated as 60 MW, out of which 35 MW will be taken from CPP and balance from GRID.

14.17.13 Baseline Environmental Studies were conducted during winter season i.e. from December 2018 and February 2019. Ambient air quality monitoring has been carried out at 8 locations during December 2018 to February 2019 and the data submitted indicated: PM_{10} (40 to 86 µg/m^3), $PM_{2.5}$ (23 to 54 µg/m^3), SO_2 (4 to 9.8 µg/m^3) and NO_x (9 to 16.8 µg/m^3). The results of the Modelling study indicates that the maximum increase of GLC for the proposed project is 6.7 µg/m^3 with respect to PM_{10}, 3.5 µg/$m^3$with respect to SO_2 and 3.9 µg/m^3 with respect to NOx.

14.17.14 Ground water quality has been monitored at 8 locations in the study area and analyzed. pH: 7.19 to 7.67, Total Hardness: 140 to 404 mg/l, Chlorides: 25 to 390 mg/l, Fluoride: 0.42 to 0.96 mg/l. Heavy metals are within the limits. Surface water quality has been monitored at 2 locations in the study area and analyzed. pH: 7.14 to 7.2, DO: 4.7 to 4.9 mg/l, COD: 8 mg/l.

14.17.15 Noise levels are in the range of 43.1 to 53.2 dB(A) for daytime and 40.0 to 42.8 dB(A) for night time in residential area and 61.6 dB(A) for daytime and 68.3 dB(A) night time in Borai industrial area.

14.17.16 The details of solid waste generation and its utilization is furnished as below:

Solid waste	Quantity in TPA	Utilization Measures
Iron ore tailings	66670	Given for cement making.
Dust from Pellet Plant ESP and Bag Filters	16670	Reused in pellet plant.
Dolochar from DRI Plant	87500	It will either be used in AFBC Boilers or sold for use as fuel in power plant of other company.
Dust from DRI Plant	68000	Used for briquette making, land filling and other civil construction purpose.
DRI Kiln Accretion	3150	Used for land filling and other civil construction.
Slag from Induction Furnaces	74680	After metal recovery it will be used for civil construction purpose
Dust from Bag Filters of Induction furnaces	5000	Used for land filling and other civil construction purpose.
Slag from SAF	39000	FeMn slag used for making SiMn. Unutilized slag will be crushed and metal recovered. After recovery, it will be used for land filling and other civil construction purpose.
Bag Filter Dust from SAF	20800	Unutilized Used for land filling and other civil construction purpose.
Coal ash (95% flyash) from ESP of Power Plant	72020	Used as per MOEF&CC rule; given for cement making, brick making and making other construction material, also as landfill material.
Coal ash (Bed ash) from Coal Gasifier	14652	Given for brick making, andalso used as landfilling material.

14.17.17 The Public hearing for the project was held on 16-10-2019 at Rasmara village under the chairmanship of Additional Collector, District Durg. for setting up of the greenfield plant. The issues raised during public hearing are pollution from existing industries, rising unemployment, non-payment of proper wages, retrenchment, inadequate CSR by existing industries etc., which have been addressed in the EIA report.

14.17.18 The capital cost of the total project is INR 510 Crores and the capital cost for environmental protection measures proposed is INR 13 crores (to be spent in phases and will commensurate with investments in project). The annual recurring cost towards the environmental protection measures is approximately INR 3.4 crores (as required for phases and will commensurate with investments in project). The total employment generation (direct and indirect) in the proposed project is 1000.

14.17.19 An amount of INR 810 lakhs is earmarked towards the Corporate Environment Responsibility related activities. The details of the CER activities along with the time frame is furnished as below:

S.No.	Description	Year 1	Year 2	Year 3	Year 4	Total
1.	Training and employment to local youths	4	8	12	22	**46**

S.No.	Description	Year 1	Year 2	Year 3	Year 4	Total
2.	Infrastructure development of surrounding villages	18	32	61	112	**223**
3.	Drinking water facilities	5	5	12	23	**45**
4.	Water conservation	6	6	14	24	**50**
5.	Sanitation and solid waste management	7	15	49	67	**138**
6.	Sewerage and drainage	-	5	9	18	**32**
7.	Medicare facilities	4	4	34	44	**86**
8.	Sports and other social and developmental activities	8	22	54	106	**190**
	Total	**52**	**97**	**245**	**416**	**810**

14.17.20 Greenbelt will be developed in 3.76 ha which is about 33% of the total acquired area. A 10-20 m wide greenbelt, consisting of at least 3 tiers around plant boundary will be developed as greenbelt and green cover as per CPCB guidelines. Local and native species will be planted with a density of 2500 trees per ha. Total number of 9400 saplings that will be planted and nurtured in 2 years.

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

14.17.22 Name of the consultant: Grass Roots Research and Creation India (P) Ltd. [Sr. No. 82, List of Accredited Consultant Organizations (Alphabetically) Rev. 82, Dec. 05, 2019].

Recommendations of the Committee

14.17.23 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 Integrated Steel Plants.

i. The gasifier shall be closed loop technology.

ii. Effluent generated from the producer gas plant shall be treated and reused.

iii. Coal dust generated from producer gas plant shall be recycled.

iv. The excess dolochar generated shall be used only for power generation within the plant and no sale is allowed.

v. Air cooled condenser shall be used in power plant.

vi. No slime pond is allowed.

vii. Provision for industrial vacuum cleaner to control the fugitive emissions shall be made.

viii. Particulate emissions from the stacks shall be less than 30 mg/Nm^3 with bag house as APCD. Emission from ESP shall be less than 50 mg/Nm^3.

ix. Scheme to harvest rain water more than the 100 % of annual water consumption shall be implemented.

x. Domestic wastewater shall be treated in STP and reused.

14.18 Proposed Expansion & modernization of the Blast Furnace & Ductile Iron Pipe Plant for the ultimate production of 4.25 LTPA Liquid Metal/Pig, 5.58 LTPA Sinter, 4.0 LTPA DI Pipes, 0.288 LTPA DI Accessories, 0.9 LTPA liquid hot metal along with 5.0 MW capacity Power based on Blast Furnace Gas (Boiler), 4000 Nm^3/hr Oxygen, 2200 Nm^3/hr by **M/s Electrosteel Casting Ltd.** located at 30. B.T. Road, Khardha, **Dist North 24 Parganas, West Bengal-** [Online Proposal No. IA/WB/IND/130437/2019; MoEF&CC File No. J-11011/416/2019- IAII(I)] **– Prescribing of Terms of Reference – regarding.**

14.18.1 M/s. Electrosteel Casting Limited has made application vide online proposal no. IA/WB/IND/130437/2019 dated 9/12/2019 along with the application in prescribed format (Form-I), copy of pre-feasibility report and proposed ToRs for undertaking detailed EIA study as per the EIA Notification, 2006 for the project mentioned above. The proposed project activity is listed at S. No. 3(a) Metallurgical industries (ferrous & non-ferrous) under Category "A" of the schedule of the EIA Notification, 2006 and appraised at Central Level.

Details submitted by the project proponent

14.18.2 M/s Electrosteel Castings Limited proposes expansion & modernization of the Blast Furnace & Ductile Iron Pipe Plant for the ultimate production of 4.25 LTPA Liquid Metal/Pig, 5.58 LTPA Sinter, 4.0 LTPA DI Pipes, 0.288 LTPA DI Accessories, 0.9 LTPA liquid hot metal along with 5.0 MW capacity Power based on Blast Furnace Gas (Boiler), 4000 Nm^3/hr Oxygen, 2200 Nm^3/hr Nitrogen on the available vacant area within the existing plant premises of total area 14.57 hectares (36 acres) of land.

14.18.3 The details of the existing and proposed expansion is furnished as below.

Sl. No.	Unit	Existing Capacity	Additional Capacity	Proposed Final Capacity
1	Liquid Metal / Pig (Blast furnace)	2.84 LTPA (215Cu.m.)	1.41 LTPA	4.25 LTPA (290Cu.m)
2	Sinter Plant	3.6 LTPA. (30 Sq. m)	1.98 LTPA (18 Sq. m)	5.58 LTPA
3	DI Pipes	2.73 LTPA	1.27 LTPA	4.0 LTPA
4	DI Accessories	0.238 LTPA	0.05 LTPA	0.288 LTPA
5	Iron Melting	0.3 LTPA (1 X 4.5 TPH)	0.6 LTPA (2 X 4.5 TPH)	0.9 LTPA (3 X 4.5 TPH)
6	Captive Power Plant Blast Furnace Gas based. (Boiler)	3.25 MW (20TPH Boiler)	1.75 MW (10TPH Boiler)	5.0 MW
7	Oxygen Plant	Nil	4000 Nm^3/hr.	4000 Nm^3/hr.
8	Nitrogen Plant	Nil	2200 Nm^3/hr.	2200 Nm^3/hr.

14.18.4 The details of the statutory permissions obtained for the existing unit is furnished as below:

Sl. no.	Unit	Existing Capacity	Year of Establishment	Statutory Permissions
1	Liquid Metal/Pig (Blast furnace)*	2.84 LTPA (215Cu.m.)	May'2000	1. CTE: 361-50/WPB-Nov/164/99. 2. Valid CTO: 1366/10/12/WPB/BR/J(XX)/96 dated 23.11.16 valid upto 31.12.21.(C087382)
2	Sinter Plant*	3.6 LTPA. (30 Sq. m)	April'2006	1. CTE: 02-2N 308/2005. 2. Valid CTO: 1366/10/12/WPB/BR/J(XX)/96 dated 23.11.16 valid upto 31.12.21. .(C087382)
3	DI Pipes*	2.73 LTPA	May'2001	1. CTE: 430-50/WPB-NOC/162/99. 2. Valid CTO: 1770/Ka_co_r/14/0315 dated 01.11.18 valid upto 31.10.23. (C083562)
4	DI Accessories*	0.238 LTPA	May'2001	1. CTE: 431/2N-2267/2001 2. Valid CTO: 1770/Ka_co_r/14/0315 dated 01.11.18 valid upto 31.10.23. (C083562)
5	Iron Melting**	0.3 LTPA (1 X 4.5 TPH)	August'2008	1. EC: EN/1598/T-II-I/022/2008 28.07.08. 2. CTE: 281-2N-25/2008 (E) dt 11.08.08 3. CTO: 1049/kr_co_s/09/0066 dated 24.5.2019 valid up to 31.07.24.(C083596)
6	Captive Power Plant Blast Furnace Gas based. (Boiler)*	3.25 MW (20TPH Boiler)	Same as Sl. No.1	
*	The Existing units were established before 14th Sept'2006 after getting consent to establish from WBPCB as per prevailing norms.			
**	The Unit was established in the Year 2008 after getting Environmental clearance from SEIAA, West Bengal & subsequent consent to establish from WBPCB. Capacity of Induction furnace is 4.5 TPH (< 5 TPH).			

14.18.5 The proposed unit is located at 30, B. T. Road, P.O: Sukhchar, Khardah, Dist. North 24 Parganas, West Bengal. Its geographical co-ordinates are 22˚42'03" to 22˚42'50" N latitude and 88˚22'28" to 88˚22'46" E longitude with above mean sea level (AMSL) 15 m.

14.18.6 The proposed expansion project will be installed on the available vacant area within the existing plant premises consisting of total 14.57 hectares (36 acres) of land. The entire land has been acquired for the project. No forest land involved. Of the total area, 4.81 ha (33%) land will be used for green belt development.

14.18.7 No national park / wildlife sanctuary / biosphere reserve / tiger reserve / elephant reserve etc. Is 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.

14.18.8 Total project cost is approx. Rs. 330 Crores. The estimated manpower requirement will be about 300 persons.

14.18.9 The Company proposes expansion & modernization of the Blast Furnace & Ductile Iron Pipe Plant for the ultimate production of 4.25 LTPA Liquid Metal/Pig, 5.58 LTPA Sinter, 4.0 LTPA DI Pipes, 0.288 LTPA DI Accessories, 0.9 LTPA liquid hot metal along with 5.0 MW capacity Power based on Blast Furnace Gas (Boiler), 4000 Sm3/hr Oxygen, 2200 Sm3/hr Nitrogen. The raw material transportation will be done through Rail and road linkages.

14.18.10 Existing power requirement is about 20 MW. Additional 10 MW shall be required for the expansion project and will be sourced from Captive Power Plant and CESC Supply.

14.18.11 The details of the existing and proposed raw materials, requirement for the project are as follows:

Sl. No	**Unit**	**Material**	**Existing Qty.**	**Proposed qty.**	**Unit**	**Source**	**Mode of Transportation**
	LMW	**Raw materials**					
1		Quartzite	381	579	MT/ mth	Local Mkt	Road/Rail
2		Mn Ore	37	56	MT/ mth	Local Mkt	Road/Rail
3		Iron ore (lump & fines) / Mill Scale	39198	59614	MT/ mth	Local Mkt	Road/Rail
4		Dolomite	2014	3063	MT/ mth	Local Mkt	Road/Rail
5		Coke Fines (Sinter)	2191	3332	MT/ mth	Local Mkt	Road
6		Coal/Coke (MBF)	15535	23626	MT/ mth	Local Mkt	Road
7		Burnt Lime + LimeStone	4124	6272	MT/ mth	Local Mkt	Road
8	**DIW**	Zn wire	190	292	MT/ mth	Local Mkt	Road
9		Sponge Iron	3146	4840	MT/ mth	Local Mkt	Road/Rail
10		Pure mg	32	49	MT/ mth	Local Mkt	Road

11		Pig Iron	18	28	MT/ mth	Local Mkt	Road
12		MS Scrap	545	838	MT/ mth	Local Mkt	Road
13		Liquid Metal	22591	34755	MT/ mth	Local Mkt	Road
14		Ferro Silicon	476	732	MT/ mth	Local Mkt	Road
15		Ferro Manganese	6	9	MT/ mth	Local Mkt	Road
16		EPS	5	8	MT/ mth	Local Mkt	Road
17		Cement	2621	4032	MT/ mth	Local Mkt	Road
18	**Iron Melting**	Sponge Iron	2706	8118	MT/ mth	Local Mkt	Road
19		Scrap	300	900	MT/ mth	Local Mkt	Road
20		Pig Iron	32	96	MT/ mth	Local Mkt	Road

14.18.12 Water to the tune of 700 KLD will be needed for the proposed expansion project. Domestic waste water will be treated in Sewage Treatment Plant (STP) and industrial waste water generated will be treated in water treatment facility and reused completely.

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

14.18.14 Name of the consultant: Envirotech East Pvt. Ltd. [Sr. No. 55, List of Accredited Consultant Organizations (Alphabetically) Rev. 82, Dec. 05, 2019].

Observations of the Committee

14.18.15 The Committee noted that the proposed plant layout is congested and located within the thickly populated residential area. The process envisaged in the expansion proposal is likely to generate foul/odour in the vicinity.

Recommendations of the Committee

14.18.16 Therefore, the committee after detailed deliberations, decided to conduct site visit to verify the ground situation by a sub-committee.

14.19 Expansion of Steel Industry from 170,000 TPA to 2,30,000 TPA of Rolled Steel of **M/s. Aarti Steels Limited** located at Ludhiana, **District- Ludhiana, Punjab-** [Online Proposal No. IA/PB/IND/130267/2019; MoEF&CC File No. J-11011/417/2019-IAII(I)] **– Prescribing of Terms of Reference – regarding.**

14.19.1 **M/s. Aarti Steels Limited** has made application vide online proposal no. **IA/PB/IND/130267/2019** dated 07/12/2019 along with the application in prescribed format (Form-I), copy of pre-feasibility report and proposed ToRs for undertaking detailed EIA study as per the EIA Notification, 2006 for the project mentioned above. The proposed project activity is listed at S. No. 3(a) Metallurgical industries (ferrous & non-ferrous) under Category "A" of the schedule of the EIA Notification, 2006 and appraised at Central Level.

Details submitted by the project proponent

14.19.2 The existing plant was accorded Environmental Clearance vide lr.no. CSA/6419 dated 30/05/2003 by Competent State Authority (CSA) of Government of Punjab. Consent to Operate for Arc Furnace Division was accorded by Punjab State Pollution Control Board vide lr. No. R16LDH1CTOA3561956, validity of which is up to 31/03/2021 for Air and vide lr. No. R16LDHCTOW3561870, validity of which is up to 31/03/2021 for Water.

14.19.3 Consent to Operate for Induction Furnace Division was accorded by Punjab State Pollution Control Board vide lr. No. R15LDH1CTOA3263978 for air which is valid up to 31/03/2020 and vide lr. No. R15LDH1CTOW3264172 for water which is valid up to 31/03/2020.

14.19.4 Consent to Operate was accorded by Punjab State pollution Control Board for Rolling Mill Division vide lr. No. CTOA/Renewal/LDH1/2018/7027323 for air, which is valid upto 30/09/2022 and vide lr. No. CTOA /Renewal/ LDH1/2018/7027276 for water which is valid up to 30/09/2022. Consent to Operate was accorded by Punjab State pollution Control Board for Steel Wire Division vide lr. No. R15LDH1CTOA3161477 for air which is valid upto 31/03/2020 and vide lr. No. R15LDH1CTOW3161346 for water which is valid up to 31/03/2020.

14.19.5 The proposed unit will be located at Plot No. 1855-1859, Focal Point, Phase-III, Village Dhandari Kalan/Jamalpur, Tehsil- Ludhiana, District-Ludhiana, State-Punjab.

14.19.6 The land area acquired for the proposed plant is 22.97 acres (9.3 ha) out of which 0 acre is an agricultural land,0 acre is grazing land and 0 acres is others (Government Land). No/forestland involved. The entire land has been acquired for the project. Of the total area 2.2ha (5.4 acre) (~23%) land will be used for green belt development.

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

14.19.8 Total project cost is approx.INR 223.58 Crore. Proposed employment generation from proposed project will be 250 direct employment.

14.19.9 The targeted production capacity of the project is 2,30,000 TPA. Being a secondary steel plant no Iron ore for the plant would be needed. Other raw materials will be transported through Road. The proposed capacity for different products for the project is as below:

Name of unit	No. of units	Capacity of Unit	Production Capacity (After Expansion)
Billet manufacturing (EAF)	1	35 t	165,000 tpa
Billet manufacturing (IF)	2	12 t each	65,000 tpa
Round product (Rolling Mill)	3	2,00,000 tpa	158,400 tpa
Flats (Rolling Mill)	1	-	70,700 tpa

14.19.10 The electricity load of 38.5 MVA will be procured from Punjab State Power Corporation Limited (PSPCL). Company has also proposed to install Nil DG Set.

14.19.11 Proposed raw material and fuel requirement for project are 3,08,385 TPA. The requirement would be fulfilled by purchase as well as internal generation. Fuel consumption will be mainly Fuel oil and HSD.

14.19.12 Water Consumption for the proposed project will be 1174 KLD and waste water generation will be 38 KLD from process and 72 KLD from STP, both of which will be recycled and reused. Domestic waste water will be treated in STP and industrial waste water generated will be treated in ETP and reused in plant.

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

14.19.14 Environment Consultant GreenC India Consulting Private Limited [Sl. No. 75, List of Accredited Consultant Organizations (Alphabetically) Rev. 82, Dec. 05, 2019].

Observations of the Committee:

14.19.15 The Committee noted that the proposed plant site is located within the Critically Polluted Area and there is no space available for green belt development within the plant premises and the adjoining area. There is no surface water availability and only ground water is available.

Recommendations of the Committee:

14.19.16 The proponent was asked to look for better pollution control devices, reduction in source and fugitive emission by way of improved control technologies (or) modification in production process and equipment. The proponent was also asked to examine the possibilities of alternative water sources bv use of sewage (or) effluent from CETP as alternate water source in place of ground water.

14.20 Greenfield Copper Refinery Plant (1.0 MTPA) project of **M/s Adani Enterprises Limited** 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- IAII(I)]- **Reconsideration based on the Site Visit Report - Environmental Clearance - regarding.**

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

Minutes of meeting of REAC held during 9-11th January 2019:

1.0 M/s. Adani Limited has made online application vide proposal no. IA/GJ/IND/86812/2016dated 6th 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

2.0 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 21st 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 6thmeeting held on 4thMay 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 21st June 2016 vide Lr. No. F. No. J-11011/113/2016 IA.II (I).

3.0 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 Rod Plant	TPA	2,50,000	2,50,000	5,00,000
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_2O_5)	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

4.0 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_2O_5)	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

Sr. No.	Products	Units	Phase-I	Phase-II	Overall Plant Capacity
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 Fluro Silicic Acid (~20% as H_2SiF_6)	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 Chloride)	TPM	9	9	18
19	Mercury	TPM	8	8	16
20	CCR Mill Scale	TPM	25	25	50

5.0 The total land required for the project is 256.58 ha, out of which zero (0) ha is an agricultural land, zero (0) ha is grazing land, 102.39 ha forest land applied for diversion by APSEZ and 154.19 ha is non-forest land 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.

6.0 The topography of the area is flat and slightly undulating and ranges between 22°48’13.26"N to 22°50‘01.88"NLatitude and 69°33'34.74"Eto 69°35‘08.42"ELongitude 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.

7.0 No National Park/Wildlife Sanctuary/Biosphere Reserve/Tiger Reserve/Elephant 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.

8.0 The proposed Copper refinery plant with various facilities will be using following raw materials:

a. 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.

b. Rock Phosphate: Production of Phosphoric Acid and by product Hydro Fluro Silicic Acid and Phospho Gypsum.

c. Aluminum Hydrate: Production of Aluminum Flouride

d. Quick Lime: For Effluent Treatment Plant

Following fuel will be used as per process Requirement:

a. LPG/ PNG

b. Furnace Oil

c. High Speed Diesel

d. Met Coke

e. Coal/ Pet Coke

During the manufacturing Process, following waste will be generated, which will be recycled in the process or will be sent to authorised recyclers:

a. Nickel Sulphate Sludge

b. Arsenic Bearing Sludge – As-Cu Precipitate

c. Used Oil

d. Oil Sludge

During the manufacturing Process, following Hazardous waste will be generated and will be stored in Secured Landfill (SLF) designed in accordance with CPCB Guidelines:

a. ETP Waste sludge and Scrubber Waste

b. Spent Catalyst

c. Spent resins from DM, RO & Refinery Plant

d. Salts from Multi Effect Evaporator

10.0 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.

11.0 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.

12.0 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.

13.0 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 hydrofluro silicic acid (HFSA) through scrubbing system. HFSA is one of the major raw materials for production of Flouride based chemicals. Hydro fluro 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.

14.0 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.

15.0 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

16.0 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.

17.0 The water requirement of the project is estimated as approx. 32800 m3/day of fresh water requirement will be obtained from the desalination plant of Adani Port Special Economic Zone (APSEZ). 5,418 m3 /day treated water from ETP & STP will be utilized for plant operation.

18.0 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.

19.0 Baseline Environmental Studies were conducted during post-monsoon and partly winter season i.e. from 1st October to 31st December, 2016 Ambient air quality monitoring has been carried out at 8 locations during 1st October to 31st December, 2016 and the data submitted indicated: PM10 (35.2 to 84.2 µg/m^3), $PM_{2.5}$ (19.2 to 43.9 µg/m^3), SO_2 (14.8 to 42.6 µg/m^3) and NOx (13.1 to 32.8 µg/m^3). The results of the modeling study indicates that the maximum increase of GLC for the proposed project is 0.52 µg/m^3 with respect to the $PM_{2.5}$, 1.27 µg/m^3 with respect to the PM_{10}, 10.37 µg/m^3 with respect to the SO_2 and 0.23 µg/m^3 with respect to the NOx.

20.0 Ground water quality has been monitored in 8 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 4 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.

21.0 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.

22.0 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,

23.0 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.

24.0 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.

25.0 The Public hearing of the project was held on 29th April 2017at Community Premises Centre Samajvadi Opposite Tunda Primary School under the chairmanship of Shri D R Patel (GAS)(Additional District Magistrate and Resident Additional Collector) for production of 1.0 million TPA 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 Rs. 4000Lakhs 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 Rs Cr/ Year**					**Total Proposed Expenditure in Rs 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
	Total CER Budget	**8.0**	**8.0**	**8.0**	**8.0**	**8.0**	**40.0**
5	Environmental control measures for proposed project and environmental protection	Separate Rs 1,040 Cr budget has been kept for pollution control measures and environment management plan					

Recurring CSR 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 PH 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	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 & eligibility requirement as per the job and the vacancies available. 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. This is estimated that another 5000	Capital budget of Rs 5 Cr during the project construction period has been kept. Recurring CSR expenditure in operation phase shall be governed as per CSR Rules under the Companies Act.

S.No	Issue	**Time Bound Action Plan within Construction Phase of the Project**	Budget
		persons in the area will get benefited from the project by indirect engagement and business increased due to this project. Following activities are proposed in this area: ➢ Extend assistance to start SHGs to empower women and material and financial support to take up self-employment. ➢ Amenities like equipment support, sanitation facilities, approach roads, fish lending sheds, fisher-folk vasahats (Settlements); training for livelihood, Insurance etc. ➢ Skill Development Centre (SDC) to make the youth for achieving their Goals in life by becoming Skilled Professionals. ➢ Provision of fodder support, promote bio-gas installation in agri and animal husbandry based families' households. Construction of cattle sheds, Awareness meetings and exposure visits for animal husbandry. ➢ Support for Drip irrigation and Tissue Culture Training.	
	Education and skills development of locals	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; ➢ Supporting in creation of assembly halls, prayer hall, classrooms, computer labs, space for mid-day meal, playground, school walls etc. for government school. ➢ Igniting mind of students through science on wheels, UDAN schemes. ➢ Educational Vocational Guidance Fair (EVGF) for career talk. ➢ Balwadis for the kids of fisher-folk community to provide awareness about education, health, hygiene, and discipline. ➢ Programme for skills improvements of teaching staffs in govt. schools. ➢ Linkages will be established with the employment exchange and the registered persons having appropriate qualification shall be given priority.	Capital budget of Rs 5 Cr during the project construction period has been kept. Recurring CSR expenditure in operation phase shall be governed as per CSR Rules under the Companies Act.

S.No	Issue	**Time Bound Action Plan within Construction Phase of the Project**	Budget
	Community health care and insurance support for community members including fishermen	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. ➢ Senior Citizen Health Card Scheme to address the needs of the senior citizens including the fishermen community. ➢ Various health camps organization at regular intervals i.e. Gynaecological care, Blood donation, Health awareness programs, HIV/AIDS, Cataract detection. ➢ Provision of Free Mobile Health Care Units (MHCU). ➢ Promotion of awareness of malnutrition and anaemia. ➢ Setting up rural clinics to ensures outreach services.	Capital budget of Rs 10 Cr during the project construction period has been kept. Recurring CSR expenditure in operation phase shall be governed as per CSR Rules under the Companies Act.
	Rural Infrastructure Development and access to Fishermen community for fishing and harbours	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: ➢ To provide facility for potable drinking water by providing RO Plants, drinking water supply system, overhead tank and underground pump. ➢ Creation of clean and hygienic environment by proper drainage systems, sewage treatment plants, community led sanitation campaign ➢ Construction of various community centers to facilitate social activities, upgradation of facility at crematoriums, Gaushala etc. ➢ Conservation of water by construction of check dams and pond. ➢ Upgradation of primary health centers, renovation of roads and expansion of roads, construction of toilet facilities etc. ➢ Provision of solar street lighting, green nurturing programs, implementation of swachchh bharat initiatives.	Capital budget of Rs 20 Cr during the project construction period has been kept. Recurring CSR expenditure in operation phase shall be governed as per CSR Rules under the Companies Act.

S.No	Issue	**Time Bound Action Plan within Construction Phase of the Project**	Budget
	Environmental control measures for proposed project and environmental protection	➢ 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 GPCB and MoEF&CC. ➢ The proposed project will be designed as per the latest technology with all in built pollution control measures. ➢ The plant will be operated on zero liquid discharge principle. ➢ 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. ➢ 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&CC.	Rs 1,040 Cr of capital budget is kept for installation of environmental protection measures within the plant.

26.0 The capital cost of the project is Rs. 10,000 Crores and the capital cost for environmental protection measures is proposed as Rs. 104400 Lakhs. The annual recurring cost towards the environmental protection measures is proposed as Rs. 500 Lakhs. The detailed CSR 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.

27.0 Greenbelt will be developed in 85.79Ha which is about 33.43% of the total acquired area. Peripheral greenbelt, consisting of at least 3 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.

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

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

Observations of the Committee (In the meeting held during 9-11th January 2019) :

30.0 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. 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.

x. Lining details for Phospo-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 1st May, 2018.

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 9-11th January 2019):

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.

Observations of the Committee (In the meeting held during 22-23rd August 2019) :

The committee observed that in spite of detailed deliberations during EAC (Industry1) meeting held during 9 -11th 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 22-23rd August 2019):

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.

14.20.2 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 for further deliberations.

14.20.3 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

S.No.	ADS Point	Out Come of the Discussions
		leakage and safe handling. AEL has already got commercial enquiries from copper concentrate suppliers: 1. Mitsubishi Corporation Rtm International Pte, Singapore 2. Transmine Trading SA 3. Trifigura India Pvt Ltd 4. MITSUI & Co, Japan It seems, the origin copper concentrate may be Australia and South America Continent.
4	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.	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^3/T of copper that of radiator type air cooler (dry cooling). It is found the energy requirement for fans in case of dry cooling system will be more in turn more carbon footprint.
5	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.	No mangroves are present in the plant site. Presence of the mangroves are sighted on the southern side, along the Kodti Creek. 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. 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. Mud flats were not mapped in the CRZ map.
6	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.	AEL explained the Engineering drawings of covered storage yards for raw material storage.
7	Sulphur balance of the copper smelter unit has not been submitted.	The sources of SO_2 (97%), Copper Concentrate, Furnace Oil and Met Coke were taken into account. Fixation of Sulphur in copper slag, Chemical gypsum, ETP Sludge and residual off gas from SAP and FGD system. SAP: Catalytic converter bed with DCDA with conversion of 99.92% and cesium

S.No.	ADS Point	Out Come of the Discussions
		sulphuric acid catalyst in final bed catalytic converter for greater conversion efficiency at temperature lower than 400ºC. Tail gas scrubbing to scrub the residual gases coming out of the final absorption tower. FGD: 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.
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-ordinates, lining details, leachate collection system envisaged, and details of piezo-well installation has not been made available.	After reviewing the layout plan, the 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, disrrheoa etc,
13	Details regarding disposal of arsenic bearing sludge has not	Arsenic sludge generated from the ETP after tertiary treatment, will be sent to SLF. The general chemical characteristics of the

S.No.	ADS Point	Out Come of the Discussions
	been submitted.	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^3.
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.	Storm water 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 made available.	Rainwater harvesting structures shall be designed as per the quantification of the rainwater runoff based on the average rainfall in the region.
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	Outotec Flash melting furnace is selected

S.No.	ADS Point	Out Come of the Discussions
	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.	for the proposed project due to Operational ease and Environmental friendly. 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
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	CER shall be revised explicitly on SIA/Need based Assessment and issues

S.No.	ADS Point	Out Come of the Discussions
	memorandum issued on 1st May, 2018.	raised iin the Public Hearing

Observations and Recommendations of the Committee:

14.20.4 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.

14.21 Cold Rolling Mill (7,00,000 TPA) of M/s Chromeni Steels Pvt Ltd located at villages Ratadia & Kundroi, Taluk Mundra in District Kutch of Gujarat - **Applicability of Environmental Clearance based on the report of Group of Experts (GoE) – regarding.**

14.21.1 M/s. Chromeni Steels Private Limited (CSPL) [herein after referred as CSPL] has installed a cold rolling mill facility for production of Cold Rolled Coils (CRC) of stainless steel of capacity 7,00,000 Tons per Annum (TPA) at villages Ratadia & Kundroi, Taluk Mundra in District Kutch of Gujarat. M/s.CSPL is a joint venture between Tsingshan Industries from China and four Indian business groups namely Sunrise, Sun City, JP ISCON and VRAM Steel. The raw material, Hot Rolled Coils (HRC) for manufacture of CRC is imported from Indonesia.

14.21.2 CSPL has obtained Consent To Establish (CTE) from Gujarat Pollution Control Board (GPCB) vide letter No. 90475 dated 20/01/2018 and also applied to GPCB for Consent To Operate (CTO) vide letter dated 27/09/2019. The facility is ready and trial runs have also been conducted. CTO has not been issued so far for this facility.

14.21.3 The Ministry received complaint against CSPL on 09.07.2018. Subsequently, Ministry forwarded the said complaint to the Regional Office of the MoEF&CC at Bhopal with a copy to Government of Gujarat and GPCB on 12/02/2019 to examine the issues raised in the complaint and to take appropriate action.

14.21.4 Ministry was in receipt of another complaint on 17/05/2019 which was also forwarded to Regional Office with a copy to Government of Gujarat and GPCB on 29/05/2019.

14.21.5 The Regional Office of MoEF&CC at Bhopal vide its letter dated 12/06/2019 and 19/06/2019 asked CSPL to furnish the information related to the project. In this regard, the Regional Office was in receipt of information from CSPL on 18/07/2019.

14.21.6 In response to the Ministry's letter dated 12/02/2019 and 29/05/2019, GPCB replied on 14/08/2019 stating that CTE was granted to CSPL on 20.01.2018 only for manufacturing non-EC products, i.e., Stainless Steel Coils (Cold Rolled) with specific condition that industry shall not carry out any activities, which may attract the provision of EIA Notification 2006 and its amendment. Further, the letter also states that notice under Section 33 A of Water (P&CP) Act, 1974 has been issued to CSPL vide orders dated 25/09/2018 and 30/05/2018 directing the CSPL not to start any activity which attracts the applicability of EIA Notification, 2006 and its amendments.

14.21.7 Meanwhile, a case was filed before the Hon'ble National Green Tribunal (Western Zone) bearing Original Application No. 55 of 2019 on 20/07/2019 alleging that the CSPL has failed to obtain the Environmental Clearance (EC) before commencing with Cold Rolled Stainless Steel Coil (CRSSC) manufacturing and also abstracting

ground water without the approval of Central Ground Water Authority (CGWA). MoEF&CC has been put as Respondent no.1 and 2 in the matter. In this regard, the Hon'ble Tribunal vide its order dated 27/08/2019 constituted a Committee comprising of (i) SEIAA, Gujarat, (ii) GPCB, (iii) District Collector/ Magistrate, Kutch District and (iv) Regional Director, CGWA. Thereafter, Joint Inspection by the Committee was undertaken on 01/10/2019 and the Committee opined that the applicability of EC for the instant project can only be given by MoEF&CC. Further, the Committee also observed that there is no ground water abstraction structure in the factory premises.

14.21.8 In pursuance to the Ministry's letter dated 29/05/2019, the Joint Inspection was carried out by the Regional Office – Bhopal and Regional Office, GPCB Kutch District on 18/10/2019 wherein the Committee suggested MoEF&CC to take appropriate view on the instant proposal as regards to the applicability of provisions of the EIA Notification, 2006.

14.21.9 The Hon'ble Tribunal vide order dated 15/10/2019, sought for a clarification from MoEF&CC whether the position indicated in the letter dated 14/08/2019 would be applicable in the present case also. In this context, relevant portion stated in the MoEF&CC letter dated 14/08/2019 is reproduced as below:

As on date the Technical EIA Guidance Manual of MoEF&CC for metallurgical industries classifies re-rolling as a secondary metallurgy industry.

As per EIA Notification, 2006, secondary metallurgical industries are to be apprised for EC as Category B projects under schedule 3(a) Metallurgical Industries. In case of Secondary metallurgical processing industrial units, those projects involving operation of furnaces only such as Induction and Electric Arc Furnace, Sub-merged Arc Furnace and Cupola with capacity more than 30,000 Tonnes per annum would require Environmental Clearance.

14.21.10 In pursuance to the NGT order dated 15/10/2019, the Ministry filed an affidavit on 27/11/2019 in the Hon'ble Tribunal stating the requirement of EC for the metallurgical industries (Ferrous and Non-ferrous) as mandated under the provisions of EIA Notification, 2006.

14.21.11 Meanwhile, NGT vide Order dated 21/11/2019 directed the CSPL to stop its activities until clarification is received from the MoEF&CC. Excerpts of the said Order are reproduced as below:

"3. Upon query made by us, the learned Counsel for the GPCB submits that as per information of the Board, the stand of the MoEF&CC is that considering the nature of the respondent industry, it would require Environmental Clearance (EC) although, according to her, Consent to Establish has already been issued and the industry is having a trial run.

4. ***Considering the fact that EC is necessary, which was also our prima facie view held earlier****,* ***we direct the respondent industry to stop its activities until clarification is received from the MoEF&CC****.*

5. In the meanwhile, the respondent industry may also approach the MoEF&CC to get the question sorted out".

14.21.12 Subsequent to the above, the Project Proponent has submitted two representations to MoEF&CC vide letter dated 26.11.2019 and dated NIL seeking clarification from the Ministry in the matter. In this regard, the Ministry has decided to depute a Group of Experts (GoE) to the site with following mandate.

The broad mandate for the GoE may be considered as under but not limited to:

i.) Site visit to Chromeni Steel to understand the manufacturing processes involved w.r.t. the representation of CSPL.

ii.) Possible/anticipated environmental impacts of such processes and mitigation measures in place/required.

iii.) Review of other available documents such as EIA/EMP report submitted to SPCB, Joint Inspection Committee, etc.

iv.) View on applicability of EIA Notification, 2006 in respect of such rerolling Industry.

In view of above proposed action, an additional affidavit was filed by MoEF&CC on 19/12/2019 in the Tribunal stating that the report from group of experts along with the representations of project proponent would be placed before the Expert Appraisal Committee (EAC) for taking a considered view on applicability of EIA Notification 2006 for the instant proposal.

14.21.13 The team inspected CSPL facility on 16th December, 2019 from entry point of HRC for rolling through, the entire CRC manufacturing process that includes Coil Receipt, Uncoiling, Welding, Cold Rolling, Degreasing, Annealing, Pickling, and Skin Pass Mill up to Finishing and Packing for product dispatch. The team also visited all the utility facilities, like Acid Handling, Sludge Handling, Acid Recovery Plant, Denitrification Plant, Effluent Treatment Plant (ETP), Water Treatment, Gas Handling facility (Natural Gas and Nitrogen), etc.

14.21.14 The GoE has reviewed the following documents which were made available by the Ministry, GPCB, Regional Office of MoEF&CC at Bhopal and the CSPL.

i. Representations of the Project Proponent dated 26th November 2019 and dated Nil.

ii. Site visit Report of Joint Inspection Committee constituted by NGT dated 01.10.2019.

iii. Joint Site Inspection Report based on the site visit on 18.10.2019 by GPCB and RO, MoEF&CC, Bhopal.

iv. EIA/EMP Report of the Project at the time of site inspection.

v. Orders of NGT Pune vide dated 21/11/2019 in the Original Application No. 55/2019 (WZ) in the matter of Gajuba Jesar Jadeja Vs Union of India &Ors.

vi. Minutes of the Meeting of the Expert Committee for Streamlining the Environmental Clearance Procedures dated 01.11.2018.

Observations of GoE

14.21.15 The GoE during the plant inspection observed the following inadequacies and discussed the same with the representatives of CSPL at respective location/sections of the facility:

i.) In the pickling section, the space between electrolyte rectifier and railings is hardly 400 mm (0.4 meters) and not as per safety requirements in India which should be 450mm (0.45 meters) for free movement and more than a 1500 mm (1.5 meter) for material movement.

ii.) The RO reject sent to solar evaporation pond was supposed to be treated in Multi Effect Evaporator (MEE) of 50 KLD which has not been provided although it is envisaged in the project report.

iii.) Out of the seven stacks, height of 5 stacks is 25m or less. Not meeting Indian standard of minimum height of 30 m.

iv.) Safety arrangements for storage tanks of HNO_3 (2 x 60T), H_2SO_4 (1 x15T) and Liquid NH_3(2 x 40 m^3) were found to be inadequate. There is no containment/dyke around the storage tanks as per the requirement of Indian Explosives Act (IEA) and Factory Inspectorate. Presently the acid spillage pump delivery is connected to ETP. It should have a provision to connect to acid storage tanks also to recover acid for reuse.

v.) Skid mounted natural gas installation has inadequate safety arrangements. Facility is having unsafe railing around the installation. Installation should have an open space around as per IEA. Fire hydrant location is such that the water jet would fall on the roof of the shed hindering extinguishing the fire. Same is the situation with nitrogen storage facility. Both of these installations are too close to each other which may obstruct the access to the installation in the event of emergency in one of these units.

vi.) There is no display for online analyzer for NH_3 in De-Nitrification Plant stack.

vii.) The ETP appears to be inadequate in size to handle the quantities of effluents. Layout of the ETP is also very congested and possibility of contamination of various streams cannot be ruled out. However, the actual problems will be seen only during the regular plant operations.

viii.) The process steps provided for removal of hexavalent chromium appear to be inadequate. Since Cr^{+6} content in raw effluent was not known (the PP could not give details), the GoE could not explain whether a conventional treatment system would be adequate or should be followed by a tertiary treatment (example: ion exchange) for meeting the discharge norms.

ix.) PP has just started Green belt development. The area earmarked for green belt is only 15 % of the total area of 127. 3 ha which is far less than the 33% standard norm.

x.) The Project Proponent has not set up any Environmental Management Cell with qualified Environmental Engineers.

xi.) Rain Water harvesting measures have not been initiated so far.

xii.) Industrial Vacuum Cleaners have not been provided to maintain dust free work zone environment.

xiii.) The Project Proponent has proposed a large area for to store the hazardous waste. No hazardous waste shall be allowed to be stored for more than fifteen days.

xiv.) The Project Proponent has proposed to dispose of oily waste and scum to TSDF. Instead the Project Proponent should install incinerator with Waste Heat Recovery which is a common practice in such installations.

Overall Impression of GoE about the Plant

14.21.16 After reviewing the above mentioned documents and assessing the manufacturing process, technology adopted and overall plant layout during the site visit, it is felt that the installed unit is a modern facility to manufacture CRC of high quality standards. However, there are gaps in addressing the environmental issues as indicted above which will have significant impacts in terms of air and water pollution, hazardous waste management and safety at the work place, if not addressed adequately with sound Environmental Management Plan (EMP).

Applicability of EIA Notification, 2006

14.21.17 The Clarification issued by MoEF&CC vide letter dated 14/08/2019 above are equally applicable in case of Cold Rolling Mills (CRM) as clarified here below:

i.) CRM is also a Re-rolling mill where the input material is HRC which for the purpose of CRM is half finished product.

ii.) In Steel Re-rolling Mills, a reheating Furnace is used to heat the input to make it soft to convert it into desired shape and dimension of product at higher temperature and then cool it slowly to regain the original molecular structure of Steel.

iii.) In Cold Rolling Mill, thickness of hot rolled coils is reduced by applying high pressure on HRC in Cold Rolling Strands (3 to 5 strands depending upon the reduction in thickness desired).

iv.) During cold rolling, HRC is made hard and brittle. The product in this state cannot be used as it is. Hence, it needs to be normalized to make it suitable for end use.

v.) This normalization is carried out in annealing/heat treatment furnaces by heating the cold rolled sheets to a temperature of 900 to 1200 ^{o}C.

vi.) After such a high temperature, the metal gets normalized after slow cooling that follows the annealing operation.

vii.) The Annealing furnaces need fuel to raise the temperature to desired level (1050 ^{o}C in case of Chromeni Steel). The function of fuel is to impart heat to raise temperature irrespective of nomenclature (Reheating or Annealing). Common fuels used are Natural Gas, LNG, PNG, Liquid Fuel, PG and sometimes even coal.

viii.) Pollutants released are same in both cases, i.e. Flue gas temperature around 900- 1000 ^{o}C, PM, NOx and SO_2 and CO.

ix.) Furthermore, the cold rolling mills involve metal surface treatment such as pickling, acid regeneration, hazardous waste and wastewater generation containing heavy metals (hexavalent chromium, nickel etc.).

x.) Hence, the instant project qualifies to remain within the scope of the clarification issued on 14/08/2019 by MoEF&CC.

The report of GoE dated 24/12/2019 was placed before the EAC (Industry-1) in its 14th meeting held on 24/12/2019. The Committee discussed the report in detail and, by and

large, agreed with its findings. The Committee also heard the views of CSPL through a power point presentation whereby the PP basically put forward the following four arguments.

Four Basic Arguments by the Project Proponent:

A. The first argument put forward by the PP states that their process is cold rolling and not re rolling and therefore they are not required to have EC as per MoEF&CC notification of 2006.

B. The second argument put forward by the PP states that the EIA Notification, 2006 has mentioned only four types of furnaces - induction and electric arc furnace, submerged arc furnace and cupola with capacity more than 30,000 tonnes would require environment clearance. However, it does not include annealing furnace. The PP indicated that the EIA Notification, 2006 provides that ***Secondary metallurgical industries are to be apprised for EC as Category B projects under schedule 3(a) Metallurgical Industries. In case of Secondary metallurgical processing industrial units, those projects involving operation of furnaces only such as Induction and Electric Arc Furnace, Sub-merged Arc Furnace and Cupola with capacity more than 30,000 Tonnes per annum would require Environmental Clearance.*** The PP pointed out that the word "**only"** used in the notification shows that only four types of furnaces mentioned in the notification need environment clearance. Their argument was that the furnace used by them is not one of the four notified furnaces.

C. The third argument put forward by the PP states that the process involves neither primary nor secondary metallurgy. Therefore, it did not attract the provisions of EIA Notification, 2006. There were detailed deliberations on this issue. The argument by PP was based on the premise that their process just involves value addition without any change of shape and without any melting. Besides, the PP also submitted that the 2006 notification of MoEF&CC and its subsequent modification dated 1.12.2009 do not clarify as to what a secondary metallurgy process is.

D. The fourth argument put forward by the PP states that the physical shape of HRC does not undergo any change during conversion of CRC process. Hence, as presented by the PP, it is not a secondary metallurgical process and does not have any significant environmental implications.

Observations of EAC:

a) Regarding the first argument put forward by the PP, the Committee observed that cold rolling by the PP involves a number of processes as shown under para 14.24.15 above which has been reported by the Group of Experts. The GoE has also opined that cold rolling is, in fact, a type of re rolling only (para 14.21.17 above). Further, during the deliberations, the letter of CTE from GPCB was also discussed and it was noted that the GPCB, in response to request for cold - rolling, had issued the CTE for re-rolling. This also shows that the distinction between re-rolling and cold rolling is of no practical significance. Hence, the committee is of the view that cold rolling may be treated as a form of re-rolling only.

b) Regarding the second argument of the PP pertaining to the type of furnace used, the Committee observed that The MoEF&CC notification of 2006 and further amendment dated 1.12.2009 need to be read together. The 2009 amendment substitutes contents in column 5 of schedule 3(a) of 2006 notification. However, the contents of column 4 remain unchanged. If the contention of the PP is accepted that they are not using furnaces mentioned in the note (ii) of column 5 as substituted on

1.12.2009, it would simply mean that the note (ii) of column 5 does not apply to them. It needs to be appreciated that column 5 is a column for conditions (stating action to be taken under different conditions) which are basically clarifying notes regarding previous columns 1 to 4. Therefore, if the operations of the PP are not covered by the notes in column 5, they automatically get covered by column 4 whereby, if production is more than 5000 tons/ annum, EC as per EIA notification category B is required. Since, the production in the present case is to the tune of 7,00,000 tons per annum (which is much more than the limits mentioned either in column 4 or in column 5), the applicability of MoEF&CC 2006 notification remains unaffected whether we use column 4 or column 5. Hence the debate over the linguistic interpretation of the phrase "***only such as"*** has no effect on the conclusion arrived at and, therefore, is inconsequential.

c) Regarding the third argument put forward by the PP, the Committee observed that the entire operation of cold rolling by the PP does involve metallurgical processes as those shown under para 14.24.15 above which has been reported by the Group of Experts. As per the MoEF&CC notification 2006 and further amendment dated 1.12.2009, the metallurgical processes are categorized under schedule 3(a). In view of the previous para, in general, a secondary metallurgical process with more than 5,000 tons / annum or if the specified furnaces are used with capacity more than 30,000 tons/ annum – in both cases EC would be required as it would belong to Category B. It is seen, therefore, that once the issue of the type of furnace is sorted out as in the previous para, the annual production capacity or the scale of activity is the major determinant of the applicability of the MoEF&CC notification 2006. The discussions regarding the definition of secondary metallurgical process appears to be of academic and theoretical nature. In the context of environment clearance, one cannot lose sight of the impact on environment. Even if the theoretical understanding of metallurgy may indicate that cold rolling is not a secondary metallurgy process, we have to essentially keep in view the environmental implications. The process involving cold rolling, also requires heating to significant temperature, cooling, transportation implications etc. and all these activities have a carbon footprint and have impact on environment. Hence, it appears to be more appropriate to go by the level of operations as mentioned under schedule 3(a) of MoEF&CC notification of 2006 and the phrase secondary metallurgical units should be interpreted in a general sense. Therefore, as suggested by the GoE, the committee felt that the instant case requires EC as a category B project under MoEF&CC notification of 2006.

d) Regarding the fourth argument put forward by the PP, the Committee observed that there was a change in the physical dimension of the metal in the cold rolling process as informed by the PP during the meeting. In the context of environmental clearance, it clearly appears to be just a matter of theoretical discussion to distinguish between change in the physical dimensions and change in the physical shape. Hence, the committee did not find much substance in this argument in the context of environmental impacts and EIA notification, 2006.

14.21.18 In view of above, the Committee did not accede to the views expressed by CSPL during the presentation and deliberations.

Recommendations of EAC:

14.21.19 This matter has been referred to the EAC (Industry I Sector) committee for deliberating and opining about the applicability of MoEF&CC notification, 2006 and

subsequent clarifications in the instant case. The committee's recommendations are given below. However, due to the nature of this issue and reference, some of the recommendations are of the nature of Policy. Therefore, if considered necessary, the Ministry may refer this to the Policy Division as well.

14.21.20 In view of the forgoing and after detailed deliberations, the Committee recommended the following:

i.) Project activity of CSPL falls under Category B of Schedule 3(a) Metallurgical Industries (ferrous and non-ferrous) of EIA Notification, 2006.

ii.) The committee also noted that there are a few issues which may have diverse interpretations. The reports submitted by the Committee formed by the Hon'ble NGT and the joint inspection report by the Regional office of Bhopal and RO of GPCB for Kutch, have also left the final interpretation to the MoEF&CC. It is also noted that the present unit has obtained CTE from GPCB which is a Statutory authority. There may be other similarly placed cases in the country. This shows that there is a scope and need for further clarification in the matter regarding certain issues so that there is no subjective interpretation in future. These issues are (1) definition of secondary metallurgy units for the purpose of EIA process, (2) clarification about the types of furnaces under applicability of MoEF&CC notification 2006 and (3) clarifying re rolling vs. cold rolling in the context of Environment clearance. Therefore, for further smoothening the EC process for present unit and proposals in future, the MoEF&CC may consider issuing further clarifications.

iii.) 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.

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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 30th 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 up to 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_{10}, $PM_{2.5}$, SO_2, NO_X, CO and other parameters relevant to the project shall be collected. The monitoring stations shall be based CPCB guidelines and take into account the pre-dominant wind direction, population zone and sensitive receptors including reserved forests.

iii. Raw data of all AAQ measurement for 12 weeks of all stations as per frequency given in the NAQQM Notification of Nov. 2009 along with – min., max., average and 98% values for each of the AAQ parameters from data of all AAQ stations should be provided as an annexure to the EIA Report.

iv. Surface water quality of nearby River (60m upstream and downstream) and other surface drains at eight locations as per CPCB/MoEF&CC guidelines.

v. Whether the site falls near to polluted stretch of river identified by the CPCB/MoEF&CC.

vi. Ground water monitoring at minimum at 8 locations shall be included.

vii. Noise levels monitoring at 8 locations within the study area.

viii. Soil Characteristic as per CPCB guidelines.

ix. Traffic study of the area, type of vehicles, frequency of vehicles for transportation of materials, additional traffic due to proposed project, parking arrangement etc.

x. Detailed description of flora and fauna (terrestrial and aquatic) existing in the study area shall be given with special reference to rare, endemic and endangered species. If Schedule-I fauna are found within the study area, a Wildlife Conservation Plan shall be prepared and furnished.

xi. Socio-economic status of the study area.

7. **Impact Assessment and Environment Management Plan**

i. Assessment of ground level concentration of pollutants from the stack emission based on site-specific meteorological features. In case the project is located on a hilly terrain, the AQIP Modelling shall be done using inputs of the specific terrain characteristics for determining the potential impacts of the project on the AAQ. Cumulative impact of all sources of emissions (including transportation) on the AAQ of the area shall be well assessed. Details of the model used and the input data used for modelling shall also be provided. The air quality contours shall be plotted on a location map showing the location of project site, habitation nearby, sensitive receptors, if any.

ii. Water Quality modelling – in case, if the effluent is proposed to be discharged in to the local drain, then Water Quality Modelling study should be conducted for the drain water taking into consideration the upstream and downstream quality of water of the drain.

iii. Impact of the transport of the raw materials and end products on the surrounding environment shall be assessed and provided. In this regard, options for transport of raw materials and finished products and wastes (large quantities) by rail or rail-cum road transport or conveyor-cum-rail transport shall be examined.

iv. A note on treatment of wastewater from different plant operations, extent recycled and reused for different purposes shall be included. Complete scheme of effluent treatment. Characteristics of untreated and treated effluent to meet the prescribed standards of discharge under E(P) Rules.

v. Details of stack emission and action plan for control of emissions to meet standards.

vi. Measures for fugitive emission control

vii. Details of hazardous waste generation and their storage, utilization and disposal. Copies of MOU regarding utilization of solid and hazardous waste shall also be included. EMP shall include the concept of waste-minimization, recycle/reuse/recover techniques, Energy conservation, and natural resource conservation.

viii. Proper utilization of fly ash shall be ensured as per Fly Ash Notification, 2009. A detailed plan of action shall be provided.

ix. Action plan for the green belt development plan in 33 % area i.e. land with not less than 1,500 trees per ha. Giving details of species, width of plantation, planning schedule etc. shall be included. The green belt shall be around the project boundary and a scheme for greening of the roads used for the project shall also be incorporated.

x. Action plan for rainwater harvesting measures at plant site shall be submitted to harvest rainwater from the roof tops and storm water drains to recharge the ground water and also to use for the various activities at the project site to conserve fresh water and reduce the water requirement from other sources.

xi. Total capital cost and recurring cost/annum for environmental pollution control measures shall be included.

xii. Action plan for post-project environmental monitoring shall be submitted.

xiii. Onsite and Offsite Disaster (natural and Man-made) Preparedness and Emergency Management Plan including Risk Assessment and damage control. Disaster management plan should be linked with District Disaster Management Plan.

8. **Occupational health**

i. Details of existing Occupational & Safety Hazards. What are the exposure levels of above mentioned hazards and whether they are within Permissible Exposure level (PEL). If these are not within PEL, what measures the company has adopted to keep them within PEL so that health of the workers can be preserved,

ii. Details of exposure specific health status evaluation of worker. If the workers' health is being evaluated by pre-designed format, chest x rays, Audiometry, Spirometry, Vision testing (Far & Near vision, colour vision and any other ocular defect) ECG, during pre-placement and periodical examinations give the details of the same. Details regarding last month 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).

<u>The following general points shall be noted:</u>

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 4th 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 (QCl)/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 SPCBshall 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_{10} and $P_{2.5}$) present in the ambient air must be analysed for source analysis – natural dust/RSPM generated from plant operations (trace elements) of PM_{10} to be carried over.
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_{10} and $P_{2.5}$) present in the ambient air must be analysed for source analysis – natural dust/RSPM generated from plant operations (trace elements) of PM_{10} to be carried over.
5. All stock piles will have to be on top of a stable liner to avoid leaching of materials to ground water.
6. Plan for the implementation of the recommendations made for the steel plants in the CREP guidelines.
7. Plan for slag utilization
8. Plan for utilization of energy in off gases (coke oven, blast furnace)
9. System of coke quenching adopted with justification.
10. Trace metals Mercury, arsenic and fluoride emissions in the raw material.
11. Trace metals in waste material especially slag.
12. Trace metals in water

ADDITIONAL ToRs FOR CEMENT INDUSTRY

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

ADDITIONAL ToRs FOR PULP AND PAPER INDUSTRY

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

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 is 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 14th MEETING OF EAC (INDUSTRY-I) HELD ON 23-24 DECEMBER, 2019

SL. No.	NAME AND ADDRESS	POSITION	ATTENDANCE SIGNATURE	
			23/12/2019	24/12/2019
1	Dr. Chhavi Nath Pandey, IFS(Retired) Email: pandeychhavinath55@gmail.com	**Chairman**	23/12/2019	
Members				
2.	, Representative of Central Pulp and Paper Research Institute, Saharanpur. Email: director.cppri@gmail.com Dr. SHIVAKER MISHRA	**Member**	23/12/19	24/12/19
3.	Dr. Siddhartha Singh , Representative of Indian Meteorological Department, New Delhi. Siddhartha.singh77@gmail.com	**Member**	Siddhartha 23/12/19	Siddhartha 24/12/2019
4.	Dr. G. Bhaskar Raju Email: gbraju55@gmail.com	**Member**	Absent	
5.	Dr. Jagdish Kishwan, IFS (Retd.) Email: jkishwan@gmail.com	**Member**	23.12.2019	24.12.2019
6.	Dr. G.V. Subramanyam Email: sv.godavarthi@gmail.com	**Member**	23.12.19	24.12.19
7.	Shri. Ashok Upadhyaya Email: ahupadhy@rediffmail.com	**Member**	23/12/19	24/12/19
8.	Shri. R.P. Sharma Email: rpsh3@hotmail.com	**Member**		
9.	~~Shri.~~ DR. Sanjay Deshmukh Email: docsvd@yahoo.com	**Member**		Absent

SL. No.	NAME AND ADDRESS	POSITION	ATTENDANCE SIGNATURE	
			23/12/2019	24/12/2019
10.	Prof. S.K. Singh Email: sksinghdce@gmail.com **singhsk@email.com**	**Member**	[not present in the second half]	Absent
11.	Dr. R. Gopichandran Email: r.gopichandran@vigyanprasar.gov.in	**Member**	Absent	Absent
12.	Shri. Jagannath Rao Avasarala Email: avasaralajagan@gmail.com	**Member**		
13	Shri. J.S. Kamyotra Email: kamyotra@yahoo.co.in	**Member**	JSKamyotra 23/12/19	JSKamyotra 24/12/19
14.	Shri. Aravind Kumar Agrawal Director, MoEF&CC Email: dirind-moef@gov.in	**Member Secretary**		

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