F. No. J-11011/279/2006-IA. II(I)
Government of India
Ministry of Environment, Forest and Climate Change
(Impact Assessment Division)

Indira Paryavaran Bhawan
JorBagh Road, Aliganj,
New Delhi - 110003
E-mail: dirind-moefcc@gov.in
Tel: 011-24695368
Dated: 14.10.2020

To,

M/s Hindustan Zinc Ltd.,
Chanderiya Lead Zinc Smelter, P.O: Putholi,
District Chittorgarh**, Rajasthan**
Email: tarun.meghwal@vedanta.co.in

Subject: Capacity expansion from 4,20,000 to 5,04,000 TPA in Hydro-I and Hydro-II Zinc Smelter through debottlenecking of **M/s Hindustan Zinc Ltd.**, located at Chanderiya Lead Zinc Smelter, P.O: Putholi, **District Chittorgarh, Rajasthan –Environment Clearance under Para 7(ii) of EIA Notification, 2006– regarding.**

Sir,

This is reference to your online application vide 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.

2. Existing EC obtained is vide F. No: J - 11011/158/2003/IA-II (I)) dated 31stMarch 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 6thDecember 2006 for Hydro- II (2,10,000 TPA).

Details submitted by the project proponent

3. Total area existing of both Hydro Plants – I & II: 20 ha + 26.5 ha = 46.5 ha out of total area of CLZS complex: 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.

4. Certified compliance report of existing ECs [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 and vide letter No. HZL/CLZS/ENV./51/2020 dated 15.06.2020. No non-compliances were reported by Regional Officer.

5. 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.

6. 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.				

7. Environmental baseline studies have been carried for a month from 1st October to 31st October 2019. The ambient air quality levels were monitored at ten locations. The monitored

parameters in the range; PM_{10}- 65-95 µg/m^3; $PM_{2.5}$- 25-58µg/m^3; SO_2- 10.2-22.3µg/m^3 and NO_2- 15.3-32.2µg/m^3.

8. Pollution load quantification (Air/Water/Solid & hazardous waste/traffic) after enhancement of hydro plants – I & II.

Parameter	Pre-expansion (420000 TPA)	Post-expansion (504000 TPA)	Remarks
Air Environment			
SO_2	2 kg/ton of Sulphuric Acid Produced	1 kg/ton of Sulphuric Acid Produced	**To increase** • FAT pump circulation from 570 M3 /Hr to 620 M3 /Hr (Including crossing) to improve absorption efficiency. • IAT pump circulation from 982 M3 /Hr to 1032 M3 /Hr (Including crossing) to improve absorption efficiency. **To Replace** • FAT & IAT irrigation system with improved design to improve adsorption efficiency. • IAT & FAT candle filters with collection efficiency of >1 micron to 100% and >0.5 micron to 96%
SO_3/Acid Mist	50 mg/Nm^3	30 mg/Nm^3	
PM	50 mg/Nm^3	30 mg/Nm^3	• Upgradation of Bag House • Bag Fabric: - Polypropylene will replace by PTFE.
Water Environment			
Water Requirement	30,670 (26 KL/Ton)	30,670 (22KL/Ton)	• No additional water required. Further, planning to reuse the treated sewage from Proposed STP of Chittorgarh/Bhilwara City to reduce freshwater requirement. • Strengthening of Recycling System with recovery of additional 580 m^3/day water from MEE/MVR. • Zero Liquid discharge being maintained.
Resource Requirements			

Land	335.89 ha	335.89 ha	No additional land required
Power Requirement	220 MW (4588.6 KWH/Ton)	240 MW (4171.4 KWH/Ton)	Additional 20 MW power will be sourced from Renewable Energy.
GHG Emission Reduction in tCO2e/T	1792296 (4.27 tCO2e/T)	1792296 (3.55 tCO2e/T)	No Change.

9. Details of Solid Waste Generation & Management for Hydro Plants -I & II is given as below:

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

Sr. No.	Type of Waste Quantity (Units)	Granted Quantity (Units)	Additional Quantity (Units)	Total (After Enhancement)Quantity (Units)	Method of Treatment and Disposal
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
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.*

10. The estimated cost of the proposed enhancement of zinc production capacity will be Rs. 138.5 Cr including the proposed Environmental budget of Rs. 48.5 Cr.

11. The details of proposed CER activities are as given below:

Area of Intervention	Expenditure Rs. 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**

12. No litigation is pending in any court related to project or activity. No show cause notices/direction has been issued under Air Act, Water Act and Environment (Protection) Act, 1986.
13. Name of the consultant: M/s. Vimta Labs [S.No.162, List of Accredited Consultant Organizations (Alphabetically) Rev. 82, Dec. 05, 2019].
14. The proposal was considered in Reconstituted Expert Appraisal Committee (REAC) (Industry-1) meetings held during 24-25th December 2019 and 25-26th June 2020.

Observations of the committee (EAC meeting held during 25-26th June 2020)

15. During discussions, the committee made the following observations in the up-gradation of the plant.
    i. CTO for existing operations of both Hydra I and II have been obtained. CTOs are valid till 31.8.23 for Hydra I and 31.1.24 for Hydra II.
    ii. Treated sewage water from STPs of Chittorgarh and Bhilwara is proposed to bring to Chanderia for use in the plant processes.
    iii. Project proponent proposed to reduce SO_2 emissions from H_2SO_4 plant from 2 kg/t of acid to 1 kg/t of acid, that of acid mist from 50mg/Nm^3 to 30mg/Nm^3 and that of particulate matter (PM) from 50mg/Nm^3 to 30mg/Nm^3 in the upgradation of the plant.
    iv. It is proposed to strengthen the ETP to recycle additional 580 Cum/day of effluents by installing MEE for RO rejects.
    v. Additional 20 MW power required for the additional load shall be procured from Renewable resources.
16. Further, the committee asked the project proponent to furnish the details of process optimization and addition of eight nos. of cells. Project proponent submitted the details through email on 26.06.2020 and the details are as given below:

I. Upgradation of Rectifier Rating from Existing 192 kA to 200 kA:

i. Presently there are four rectifier units (Two in each hydro) having 96 thyristors in each rectifier

ii. 1 KA running Current in each thyristor

iii. Design capacity in each thyristor: 3KA

iv. To enhance current input from 192 KA to 200 KA, study conducted by OEM (M/s ABB) and following actions will be done as per recommendation

v. To Increase each thyristor current from 1 KA to 1.04 KA

vi. Increase number of plates in PHE to compensate extra heat load in thyristors

vii. Installation of addition Oil cooler to compensate extra heat load in transformer winding

viii. Existing busbar system is capable to operate cellhouse at 212 KA pas per design. The following are the design details and operability of Thyristor.

Thyristor Rating as per design	Load / thyristor @ 192 kA	Load / thyristor @ 200 kA
3 kA	1 kA	1.04A

II. Upgradation of Purification & Cell House to operate Cell house from 190 to 200 KA

i. **Spent Cooling Tower**: There are 26 Cooling towers in Plant. 14 No's in Hydro-1 and 12 No's in Hydro-2. Installation of two additional spent cooler in each cell to maintain the spent temperature less than 42 Degree Celsius in both cell house.

ii. **Spent Circulation Pump:** Installation of two addition pumps along with cooling tower in both hydro to increase the spent flow according to current

iii. **Cathode Stripping Machine:** Upgradation of stripping conveyor, receiving conveyor, returning conveyor, wagon hoist motor, hydraulic pump flow and machine encoders is required for cathode stripping machine to increase speed from 300 cathode/hr to 400 cathode/hr.

iv. **Intermediate Bus Bar cooling system:** Upgradation of PHE and its pumps to increase the surface area and DM water flow to bus bar to maintain the temperature owing to increase in current flow through bus bar. Replacement of all the piping header to sustain the increased flow rate of DM water.

v. **Cell Area**: Increase the electrolyte feed pipe size from 125 NB to 200 NB to accommodate the increased flow of electrolyte flowing to the cells.

vi. **Purification area**: Installation of three new automatic filter press in Purification plant to improve supply solution flow. Installation of one addition supply pump with discharge line up to cell house.

III. Current Efficiency Improvement Plan for Hydro Plant

To improve production capability with change in concentrate quality, a study was conducted by Technical Experts to freeze optimal process parameters and to evaluate the impact of current in Leaching-Electrolysis process. Effect of process parameters at Leaching-Electrolysis for the electrode position of zinc has been carried out & Influence of current density on the deposition process was also investigated. As per study, efficiency of zinc deposition was affected by calcine quality, zinc concentration in electrolyte, condition of electrodes, neutral leaching parameters & Purification operation etc. Following actions are proposed based on technical study to Improve current efficiency from 89 to 93%.

i. **Sulphur Sulphide less than 0.4%:** To maintain ferrous in desire range in leaching plant, sulphur Sulphide value in calcine must be less than 0.4%. Excess ferrous generation in

leaching circuit will increase Iron impurities in supply solution and have high impact on the current efficiency in cell house.

Following actionable to control Sulphide sulphur in Roaster:

a) Preparation of two blend mixture for controlling the s/s.
b) Increase the cooling tower fan blade angle.
c) Throughout cleaning of system to reduce the pressure drop during the shutdown
d) Schedule repair/replacement of all equipment during the shutdown.
e) Oxygen Enrichment in roasting process
f) Micro palletization in Roaster

ii. **Leaching process Optimization:** Leaching operating parameters to be controlled as below:

a) Neutral leaching head tank T/Fe at 1.3 +/- 0.2 gpl
b) Neutral Leaching First reactor pH 3.0 +/- 0.05 by feed forward control
c) Neutral Leaching Second Reactor pH 4.7 +/- 0.1
d) Pre-Neutralization Overflow pH at 4.8 to 5.0 with Fe++ 50 - 100 PPM
e) Use of low pressure compressed air (1.7 Kg) in neutral Leaching & Pre-Neutralization for oxidation
f) Magnesium removal section overall efficiency at > 80% to reduce magnesium impurities in supply solution.

iii. **Purification Operational Excellence**

a) Efficient Zinc Dust dosing
   - Automation of Zinc Dust dosage & solution flow
   - Online calibration of Loss in weight
   - lining of bins to ensure continuous & free flow

b) Installation of High RPM agitator

c) Installation of online monitoring of PAT Dosage & automation with flow

d) Introduced acid dilution tower to get uniform temperature and acidity for cloth regeneration

e) Filter press Operation at < 2Kg feed pressure

f) Process capability monitoring & control in HOT Purification stage

g) Improvement in supply solution quality
   - Installation of Fully automatic filter press in place of current manual filter press.
   - Replacement of filter cloth from polyester cloth to polypropylene cloth.
   - Fully automatic cloth cleaning system to avoid manual intervention.
   - Installation of low retention reaction tank in Leaching.

h) Reduction of Magnesium impurities from supply solution
   - Installation of addition lime storage silo to avoid stoppage due to low bin level.
   - Installation of addition filter press to improve capacity from 6.5 m^3/hr to 8.0 m^3/hr.
   - Replacement of fresh water with MR overflow for lime slurry preparation unit.

iv. **Cogent Headers Replacement:** The cathode header quality with respect to resistance is some most important criteria to ensure the healthiness of the header bars. At present the

cathode header bars are rejected on physical damages, assumption basis or according to the number of years of use. We are planning to use a megger Instrument for testing of the headers, the standard testing procedure will be developed which depend on the Millivolts drop at 400Amp.

Headers having voltage drop > 1.5 mV are being rejected

v. Electrode Management:

Electrode Alignment: The electrodes in the cell house are supposed to be in a face to face exposure to each other, any deviation in the position called misalignment of the electrode leads to generation of the dendrites on the edges of the cathode, it has impact on quality of the product, higher chances of short circuit. Electrode alignment to be monitored regularly

Anode Grading: The physical condition of anode along with its dimension to be classified in three categories A, B & C grade.

A grade anode - 100 % physical dimension as compared to new one
B grade anode - 95 % physical dimension as compared to new one
C grade anode - 90 % physical dimension as compared to new one

A grade anode is to be maintained >95% % by replacing C grade anode on schedule basis.

Improvement in Anode Wash Quality: During study, it was appraised, anode wash had significant effect on zinc deposit rate. To improve the anode wash quality instead of washing pressure from 90-125 bar, high pressure system need to be upgrade by constant pressure washing of anode at 180 bar. pump model 400 ARP (2 no's) is to be replaced by Model 250 ARP (4 no's).

vi. Electrolyte Management:

Zinc in Electrolyte: The Zn deposit on the cathode varies under different Zn concentrations. Generally, the current densities have a strong effect on the Zn deposit on the cathode and at higher current density, high zinc concentration is favourable for current efficiency. Based on higher input current, spent zinc to be increased from 48-52 gpl to 52-55 gpl

IV. Addition of Eight nos. of Cells in Hydro-I:

CLZS has proposed to enhance the Zinc production capacity of CLZS Hydro Plant from 420 to 504 KTPA by Cell Operation from 190 KA to 200 KA Power Load & Current Efficiency from 89% to 93% with addition of eight nos. of cells in Hydro-I without addition of transformers and rectifiers

Recommendations of the committee (EAC meeting held during 25-26th June 2020)

17. In view of foregoing, after deliberations, the committee recommended the proposal for expansion of the project by upgradation of plant and addition of eight nos. of cells under the provisions of para 7(ii) of EIA Notification, 2006 with the following specific conditions along with sector specific general conditions pertaining to smelters.

    i. SO_2 emissions from H_2SO_4 plant shall be less than 1 kg/t of acid.

    ii. Acid mist from H_2SO_4 plant shall be less than 30 mg/Nm^3 .

    iii. Particulate matter levels from the stacks shall be less than 30 mg/Nm^3.

iv. Treated sewage from STP of Chittorgarh and Bhilwara shall be used in the plant processes.

v. Existing ETP shall be strengthened to recycle additional 580 Cum/day of effluent by installing MEE for RO rejects.

vi. Additional 20 MW power required for the additional load shall be procured from renewable energy sources to reduce GHG emissions. Records of renewable energy purchased shall be maintained and submitted to RO along with EC Compliance report.

vii. Plant shall be operated on Zero Liquid Discharge (ZLD).

viii. Additional 100000 trees shall be planted to improve greenery in the plant premises.

ix. Solar energy shall be generated at the roof tops of the plant and office buildings.

x. RWH and Recharge shall be done to recharge 200 % of the water consumed annually.

xi. All CER projects should be completed within 3 years.

Decision of MoEF&CC

18. The Ministry considered the EAC recommendation and hereby decide to accord EC to M/s Hindustan Zinc Ltd for expansion of the project mentioned in the subject under provisions of para 7(ii) of EIA Notification 2006 with the following specific and general conditions:

A. Specific Conditions

i. The Environment Clearance (EC) granted to the project/ activity is strictly under the provisions of the EIA Notification, 2006 and its amendments issued from time to time. It does not tantamount/ construe to approvals/ consent/ permissions etc., required to be obtained or standards/conditions to be followed under any other Acts/Rules/Subordinate legislations, etc., as may be applicable to the project.

ii. SO_2 emissions from H_2SO_4 plant shall be less than 1 kg/t of acid.

iii. Acid mist from H_2SO_4 plant shall be less than 30 mg/Nm^3 .

iv. Particulate matter levels from the stacks shall be less than 30 mg/Nm^3.

v. Treated sewage from STP of Chittorgarh and Bhilwara shall be used in the plant processes.

vi. Existing ETP shall be strengthened to recycle additional 580 Cum/day of effluent by installing MEE for RO rejects.

vii. Additional 20 MW power required for the additional load shall be procured from renewable energy sources to reduce GHG emissions. Records of renewable energy purchased shall be maintained and submitted to RO along with EC Compliance report.

viii. Plant shall be operated on Zero Liquid Discharge (ZLD).

ix. Additional 100000 trees shall be planted to improve greenery in the plant premises.

x. Solar energy shall be generated at the roof tops of the plant and office buildings.

xi. RWH and Recharge shall be done to recharge 200 % of the water consumed annually.

xii. All CER projects should be completed within 3 years.

B. General Conditions

I. Statutory compliance:

i. The project proponent shall obtain the necessary permission from the competent authority concerned in case of drawl of surface water required for the project.

ii. The project proponent shall obtain authorization under the Hazardous and other Waste Management Rules, 2016 as amended from time to time.

II. Air quality monitoring and preservation

i. The project proponent shall install 24x7 continuous emission monitoring system at process stacks to monitor stack emission with respect to standards prescribed in Environment (Protection) Rules 1986 as amended from time to time and connected to SPCB and CPCB online servers and calibrate these systems from time to time according to equipment supplier specification through labs recognised under Environment (Protection) Act, 1986 or NABL accredited laboratories.

ii. The project proponent shall monitor fugitive emissions in the plant premises at least once in every quarter through labs recognised under Environment (Protection) Act, 1986.

iii. The project proponent shall install system to carryout Continuous Ambient Air Quality monitoring for common/criterion parameters relevant to the main pollutants released (e.g. PM_{10} and $PM_{2.5}$ in reference to PM emission, and SO_2 and NOx in reference to SO_2 and NOx emissions) within and outside the plant area at least at four locations (one within and three outside the plant area at an angle of 120°each), covering upwind and downwind directions.

iv. The project proponent shall submit monthly summary report of continuous stack emission and air quality monitoring and results of manual stack monitoring and manual monitoring of air quality /fugitive emissions to Regional Office of MoEF&CC, Zonal office of CPCB and Regional Office of SPCB along with six-monthly monitoring report.

v. Appropriate Air Pollution Control (APC) system shall be provided for all the dust generating points including fugitive dust from all vulnerable sources, so as to comply prescribed stack emission and fugitive emission standards.

vi. The project proponent shall provide leakage detection and mechanised bag cleaning facilities for better maintenance of bags.

vii. Pollution control system in the plant shall be provided as per the CREP Guidelines of CPCB.

viii. Sufficient number of mobile or stationery vacuum cleaners shall be provided to clean plant roads, shop floors, roofs, regularly.

ix. Ensure covered transportation and conveying of ore, coal and other raw material to prevent spillage and dust generation.

x. Provide covered sheds for raw materials like coal, etc.

xi. Practice use of low-sulphur tars for baking anodes.

xii. Ventilation system shall be designed for adequate air changes as per ACGIH document for all tunnels, motor houses

III. Water quality monitoring and preservation

i. The project proponent shall install 24x7 continuous effluent monitoring system with respect to standards prescribed in Environment (Protection) Rules 1986 as amended from time to time and connected to SPCB and CPCB online servers and calibrate these system from time to time according to equipment supplier specification through labs recognised under Environment (Protection) Act, 1986 or NABL accredited laboratories.

ii. The project proponent shall monitor regularly ground water quality at least twice a year (pre and post monsoon) at sufficient numbers of piezometers/sampling wells in the plant and adjacent areas through labs recognised under Environment (Protection) Act, 1986 and NABL accredited laboratories.

iii. The project proponent shall submit monthly summary report of continuous effluent monitoring and results of manual effluent testing and manual monitoring of ground water quality to Regional Office of MoEF&CC, Zonal office of CPCB and Regional Office of SPCB along with six-monthly monitoring report.

iv. Sewage Treatment Plant shall be provided for treatment of domestic wastewater to meet the prescribed standards.

v. Garland drains and collection pits shall be provided for each stockpile to arrest the run-off in the event of heavy rains and to check the water pollution due to surface run off.

vi. The project proponent shall make efforts to minimise water consumption in the plant complex by segregation of used water, practicing cascade use and by recycling treated water.

IV. Noise monitoring and prevention

i. Noise level survey shall be carried as per the prescribed guidelines and report in this regard shall be submitted to Regional Officer of the Ministry as a part of six-monthly compliance report.

ii. The ambient noise levels should conform to the standards prescribed under E(P)A Rules, 1986 viz. 75 dB(A) during day time and 70 dB(A) during night time

V. Energy Conservation measures

i. The project proponent shall provide waste heat recovery system (pre-heating of combustion air) at the flue gases.

ii. Provide LED lights in their offices and residential areas.

VI. Waste management

i. 100% utilization of fly ash shall be ensured. All the fly ash shall be provided to cement and brick manufacturers for further utilization and Memorandum of Understanding in this regard shall be submitted to the Ministry's Regional Office.

ii. Oily scum and metallic sludge recovered from ETP shall be mixed, dried, and briquetted and reused.

iii. The waste oil, grease and other hazardous waste shall be disposed of as per the Hazardous & Other waste (Management & Transboundary Movement) Rules, 2016

iv. Kitchen waste shall be composted or converted to biogas for further use.

VII. Green Belt

i. The project proponent shall prepare GHG emissions inventory for the plant and shall submit the programme for reduction of the same including carbon sequestration including plantation.

VIII. Public hearing and Human health issues

i. Emergency preparedness plan based on the Hazard identification and Risk Assessment (HIRA) and Disaster Management Plan shall be implemented.

ii. The project proponent shall carry out heat stress analysis for the workmen who work in high temperature work zone and provide Personal Protection Equipment (PPE).

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

iv. Occupational health surveillance of the workers shall be done on a regular basis and records maintained.

IX. Corporate Environment Responsibility

i. The company shall have a well laid down environmental policy duly approve by the Board of Directors. The environmental policy should prescribe for standard operating procedures to have proper checks and balances and to bring into focus any infringements/deviation/violation of the environmental / forest /wildlife norms/ conditions. The company shall have defined system of reporting infringements / deviation / violation of the environmental / forest / wildlife norms / conditions and / or shareholders / stake holders. The copy of the board resolution in this regard shall be submitted to the MoEF&CC as a part of six-monthly report.

ii. A separate Environmental Cell both at the project and company head quarter level, with qualified personnel shall be set up under the control of senior Executive, who will directly to the head of the organization

iii. All the recommendations made in the Charter on Corporate Responsibility for Environment Protection (CREP) for the Aluminium Industry shall be implemented.

X. Miscellaneous

i. The project proponent shall make public the environmental clearance granted for their project along with the environmental conditions and safeguards at their cost by prominently advertising it at least in two local newspapers of the District or State, of which one shall be in the vernacular language within seven days and in addition this shall also be displayed in the project proponent's website permanently.

ii. The copies of the environmental clearance shall be submitted by the project proponents to the Heads of local bodies, Panchayats and Municipal Bodies in addition to the relevant offices of the Government who in turn has to display the same for 30 days from the date of receipt.

iii. The project proponent shall upload the status of compliance of the stipulated environment clearance conditions, including results of monitored data on their website and update the same on half-yearly basis.

iv. The project proponent shall monitor the criteria pollutants level namely; PM_{10}, SO_2, NOx (ambient levels as well as stack emissions) or critical sectoral parameters, indicated for the projects and display the same at a convenient location for disclosure to the public and put on the website of the company.

v. The project proponent shall submit six-monthly reports on the status of the compliance of the stipulated environmental conditions on the website of the ministry of Environment, Forest and Climate Change at environment clearance portal.

vi. The project proponent shall submit the environmental statement for each financial year in Form-V to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently and put on the website of the company.

vii. The project proponent shall inform the Regional Office as well as the Ministry, the date of financial closure and final approval of the project by the concerned authorities, commencing the land development work and start of production operation by the project.

i. The project authorities must strictly adhere to the stipulations made by the State Pollution Control Board and the State Government.

ii. The project proponent shall abide by all the commitments and recommendations made in the EIA/EMP report, commitment made during Public Hearing and also that during their presentation to the Expert Appraisal Committee.

viii. No further expansion or modifications in the plant shall be carried out without prior approval of the Ministry of Environment, Forests and Climate Change (MoEF&CC).

ix. Concealing factual data or submission of false/fabricated data may result in revocation of this environmental clearance and attract action under the provisions of Environment (Protection) Act, 1986.

x. The Ministry may revoke or suspend the clearance, if implementation of any of the above conditions is not satisfactory.

xi. The Ministry reserves the right to stipulate additional conditions if found necessary. The Company in a time bound manner shall implement these conditions.

xii. The Regional Office of this Ministry shall monitor compliance of the stipulated conditions. The project authorities should extend full cooperation to the officer (s) of the Regional Office by furnishing the requisite data / information/monitoring reports.

xiii. Any appeal against this EC shall lie with the National Green Tribunal, if preferred, within a period of 30 days as prescribed under Section 16 of the National Green Tribunal Act, 2010.

This issues with the approval of competent authority

(A.K. Agrawal)
Director

Copy to:-

1. **Secretary**, Department of Environment, Government of Rajasthan, Secretariat Jaipur.
2. **Deputy Director General of Forests(C),** Ministry of Environment, Forest and Climate Change, Regional Office (CZ), Kendriya Bhawan, 5th Floor, Sector "H", Aliganj, Lucknow – 226020.
3. **Chairman,** Central Pollution Control Board, PariveshBhavan, CBD-cum-Office complex, East Arjun Nagar, New Delhi-1100032.
4. **Member Secretary**, Central Ground Water Authority, 18/11, Jamnagar House, Man Singh Road, New Delhi-110011.
5. **Chairman**, Rajasthan State Pollution Control Board, 4, Institutional area, Jhalana, Doongri, Jaipur.
6. **District Collector**, **Chittorgarh**District, State Rajasthan.
7. Guard File/Record File/Monitoring File.
8. MoEF&CC Website.

(A.K. Agrawal)
Director