



सत्यमेव जयते

File No: IA-J-11011/332/2023-IA-II(IND-I)  
Government of India  
Ministry of Environment, Forest and Climate Change  
IA Division  
\*\*\*



Dated 22/04/2024



To,

M/s. Ambuja Cement Limited  
228. Udyog Vihar, Phase-I Gurgaon, Shantigram, GURUGRAM, HARYANA -382421  
Email: anurag.solankey@ambujacement.com

**Subject:** Proposed Expansion in production capacity of Cement Grinding Unit from 1.2 MTPA to 3.0 MTPA by M/s Ambuja Cements Limited (Unit: Roorkee), located at Village: Lakeshwari, P.O- Sikanderpur Bhainswal, Bhagwanpur, Roorkee, Distt. Haridwar, Uttarakhand – Grant of TOR - Regarding.

Sir/Madam,

This has reference to online application of M/s. Ambuja Cements Limited vide proposal no. IA/UK/IND1/440730/2023 dated 18.01.2024 along with the application in prescribed format (CAF, Form – I Part A & B), 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(b) Cement Plants under Category “A” of the schedule of the EIA Notification, 2006 and being appraised at Central Level.

2. The particulars of the proposal are as below :

(i) TOR Identification No.	TO23A1103UK5410814N
(ii) File No.	IA-J-11011/332/2023-IA-II(IND-I)
(iii) Clearance Type	TOR
(iv) Category	A
(v) Project/Activity Included Schedule No.	3(b) Cement plants
(vi) Sector	Industrial Projects - 1 Proposed Expansion in production capacity of Cement Grinding Unit from 1.2 MTPA to 3.0 MTPA at located near Village: Lakeshwari, P.O- Sikanderpur Bhainswal, Bhagwanpur, Roorkee, Distt. Haridwar, Uttarakhand, Pin- 247661 by M/s Ambuja Cements Limited (Unit: Roorkee)
(vii) Name of Project	Ambuja Cement Limited
(viii) Name of Company/Organization	HARIDWAR, UTTARAKHAND
(ix) Location of Project (District, State)	

(x) Issuing Authority	MoEF&CC
(xii) Applicability of General Conditions	yes
(xiii) Applicability of Specific Conditions	no

3. The proposal cited above was considered in 54<sup>th</sup> meeting of Expert Appraisal Committee (Industry-1 Sector) held during 15<sup>th</sup> February, 2024. The minutes of the meeting and all the project documents are available on PARIVESH portal which can be accessed at <https://parivesh.nic.in>.

4. The project of M/s Ambuja Cements Limited (Unit: Roorkee), located at Village: Lakeshwari, P.O- Sikanderpur Bhainswal, Bhagwanpur, Roorkee, Distt. Haridwar, Uttarakhand is for expansion in production capacity of Cement Grinding Unit from 1.2 MTPA to 3.0 MTPA.. Environmental site settings are given as **Annexure I**, and unit configuration as **Annexure II**.

5. The existing project was accorded Consent to Establish vide Ir.no UEPPCB/ROD/NOC/HDR-623/05/1923 dated 07.12.2005 in the name of M/s Gujarat Ambuja Cements Ltd for Cement Grinding Unit of 1.2 Million TPA having existing production of PPC. The name change to M/s Ambuja Cements Ltd., was obtained from Uttaranchal Environment Protection & Pollution Control Board, Dehradun vide letter date 30/05/2007. Latest CCA(Renewal) for the existing unit was accorded by UEPPCB vide Ir. no. UKPCB/HO/Con-G35/2020/909 dated 08.10.2020. The validity of Latest CCA is valid up to 31.03.2025.

6. Existing Water requirement is 75 KLD, which is obtained from ground water and permission for the 100 KLD has been obtained from CGWA, GOI, Ministry of Jal Shakti vides letter no NOC No: CGWA /NOC/IND/REN /2/2023/7620 dated 17.04.2023. The water requirement for the proposed expansion project is estimated as 25 KLD which have been covered by current CGWB permission.

7. Existing power requirement of 6.2 MW is obtained from State Grid. The power requirement for the proposed expansion project is estimated as 9 MW, which will be obtained from State Grid.

8. The proposed project cost is Rs 299.51 Crores and the capital cost for environmental protection measures is proposed as Rs 8.7 Crores & Recurring cost / annum is 1.227 Crore. The employment generation from the proposed expansion project is 214.

9. It has been reported by PP that, there is no violation under EIA Notification, 2006/court case/show cause/direction related to the project under consideration.

#### **Deliberations of the Committee**

10. The EAC noted the following:

i. The instant proposal is for expansion in production capacity of Cement Grinding Unit from 1.2 MTPA to 3.0 MTPA.

ii. The existing project was accorded Consent to Establish vide Ir.no UEPPCB/ROD/NOC/HDR-623/05/1923 dated 07.12.2005 in the name of M/s Gujarat Ambuja Cements Ltd for Cement Grinding Unit of 1.2 Million TPA having existing production of PPC. The name change to M/s Ambuja Cements Ltd., was obtained from Uttaranchal Environment Protection & Pollution Control Board, Dehradun vide letter date 30/05/2007. Latest CCA(Renewal) for the existing unit was accorded by UEPPCB vide Ir. no. UKPCB/HO/Con-G35/2020/909 dated 08.10.2020. The validity of Latest CCA is valid up to 31.03.2025.

iii. The EAC took into consideration the drone survey of the project site and kml file on the Google Earth presented by the project proponent along with DSS of the project site on PARIVESH and made following deliberations accordingly.

iv. The total land is 20.07 ha which is under the possession of the company and has been converted for industrial purpose.

v. Sikanderpur is at a distance of 0.81 km in South direction of the project site along with other sensitive areas exists within the study area of the project site. The EAC is of the opinion that PP shall prepare and include in the EIA/EMP Report the environmental safeguard measures to minimise the impact of the project activities on the sensitive areas.

vi. Saloni River (2.5 km, E), Kali River (2.6 km, NW) along with other water bodies exists within the study area of the project site. The EAC is of the opinion that water bodies shall not be disturbed. Mitigation measures w.r.t. safeguarding the water bodies shall be prepared and submitted.

vii. The water requirement for the proposed expansion project is estimated as 25 KLD which will be obtained from ground water. The EAC is of the opinion that PP shall obtain necessary permission in this regard.

### **Recommendations of the Committee**

11. After deliberations, the Committee recommended the project proposal subject to uploading of written submission on PARIVESH portal for prescribing following specific ToRs for undertaking detailed EIA and EMP study along with Public Hearing in addition to the generic ToRs enclosed at Annexure-1 read with additional ToRs at Annexure-2:

(ii) Saloni River (2.5 km, E), Kali River (2.6 km, NW) along with other water bodies exists within the study area of the project site. The PP shall include in the EIA/EMP report suitable steps /conservation plan along with contouring (close intervals), Run -off calculations, disposal etc. A robust and full proof Drainage Conservation scheme to protect the natural drainage and its flow parameters; along with Soil conservation scheme and multiple Erosion control measures shall be prepared and included in EIA/EMP Report.

(iii) PP shall obtain necessary water permission from the Competent Authority.

(iv) PP shall prepare a Wildlife Conservation Plan in pursuance to the Wild Life (Protection) Amendment Act, 2022.

(v) PP shall collect one month additional baseline data to revalidate the already collected baseline data.

(vi) The EAC also suggested the TOR conditions such as, (a) The “input” parameters used in the AAQ modelling must be reported in the E.I.A. Influence of the combinations of various parameters on the AAQ must be reported. (b) Wind Rose diagrams for all seasons of the year must be included in the E.I.A. Data from secondary sources such as IMD may be used for this purpose, This is apart for the mandatory study of meteorological factors for one season. (c) GLC modelling for CO emission from reactors must be included in the E.I.A. report. (d) The total PM expected to be emitted from the stacks must be modelled and reported. (e) Specific water consumption and specific CO<sub>2</sub> emission from the Plant must be predicted and documented. (f) Inversion level and Mixing height must be reported in the AAQ model.

### **Decision of MoEF&CC**

12. The undersigned is directed to inform that Ministry of Environment, Forest and Climate Change has examined the proposal in accordance with the Environment Impact Assessment (EIA) Notification, 2006 & further amendments thereto and after accepting the recommendations of the Expert Appraisal Committee (Industry-1) hereby decided to accord above-said specific ToRs, in addition to the standard ToRs and Sector Specific ToRs as enclosed at **Annexure III** read with additional ToRs at **Annexure-IV** for carrying out detailed EIA/EMP for the above project.

13. It is requested that the draft EIA Report may be prepared in accordance with the above-mentioned specific ToRs and enclosed generic ToRs and additional ToRs and thereafter further necessary action may be taken for obtaining Environment Clearance in accordance with the procedure prescribed under the EIA Notification, 2006 as amended.

14. The ToRs are valid for a period of four years from date of issue of this letter as per the Ministry’s Notification S.O. 751 (E) dated 17/02/2020.

15. This issue with the approval of the Competent Authority.

**(Dr. R. B. Lal)**  
**Scientist 'F'/ Director**  
**Tel: 011-20819346**  
**Email: rb.lal@nic.in**

**Copy To**

1. The Secretary, Department of Environment, Government of Uttarakhand, Secretariat, Dehradun.
2. The Director General of Forest, Ministry of Environment, Forest and Climate Change, New Delhi.
3. The Deputy Director General of Forests (C), Integrated Regional Office, Ministry of Environment, Forest and Climate Change, 25, Subhash Road, Dehradun-248001
4. The Chairman, Central Pollution Control Board, Parivesh Bhavan, CBD-cum-Office Complex, East Arjun Nagar, New Delhi 110032
5. The Chairman, Uttarakhand Environment Protection & Pollution Control Board, E-115, Nehru Colony, Hardwar Road, Dehradun, Uttarakhand.
6. The Member Secretary, Central Ground Water Authority, Jamnagar House, 18/11, Man Singh Road Area, New Delhi 110001
7. The Addl. Director, Monitoring Cell, Ministry of Environment, Forest and Climate Change, Indira Paryavaran Bhawan, Jor Bagh Road, New Delhi
8. District Collector, Haridwar District, State of Uttarakhand.
9. The Director, IA [Compliance and Monitoring Division] , MoEFCC, New Delhi
10. Guard File/Monitoring File/Website/Record File/ Parivesh Portal

**(Dr. R. B. Lal)**  
**Scientist 'F'/ Director**

**Annexure 1**

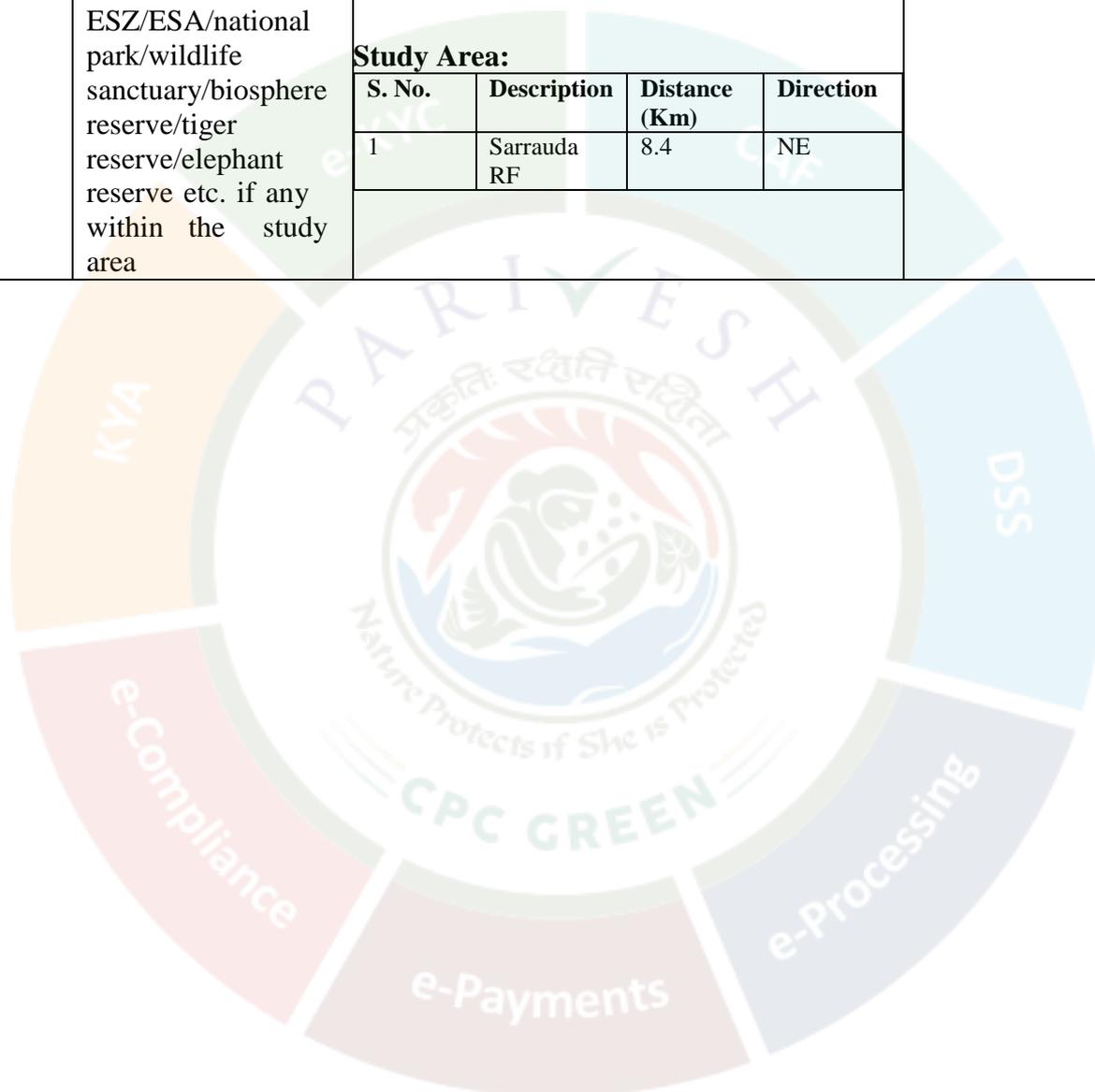
**Additional Terms of Reference**

1. This TOR is granted subject to final outcome of Hon'ble Supreme Court of India, Hon'ble High Court, Hon'ble NGT and any other Court of Law, if any, as may be applicable to this project.
2. This TOR 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.

## Environmental site settings:

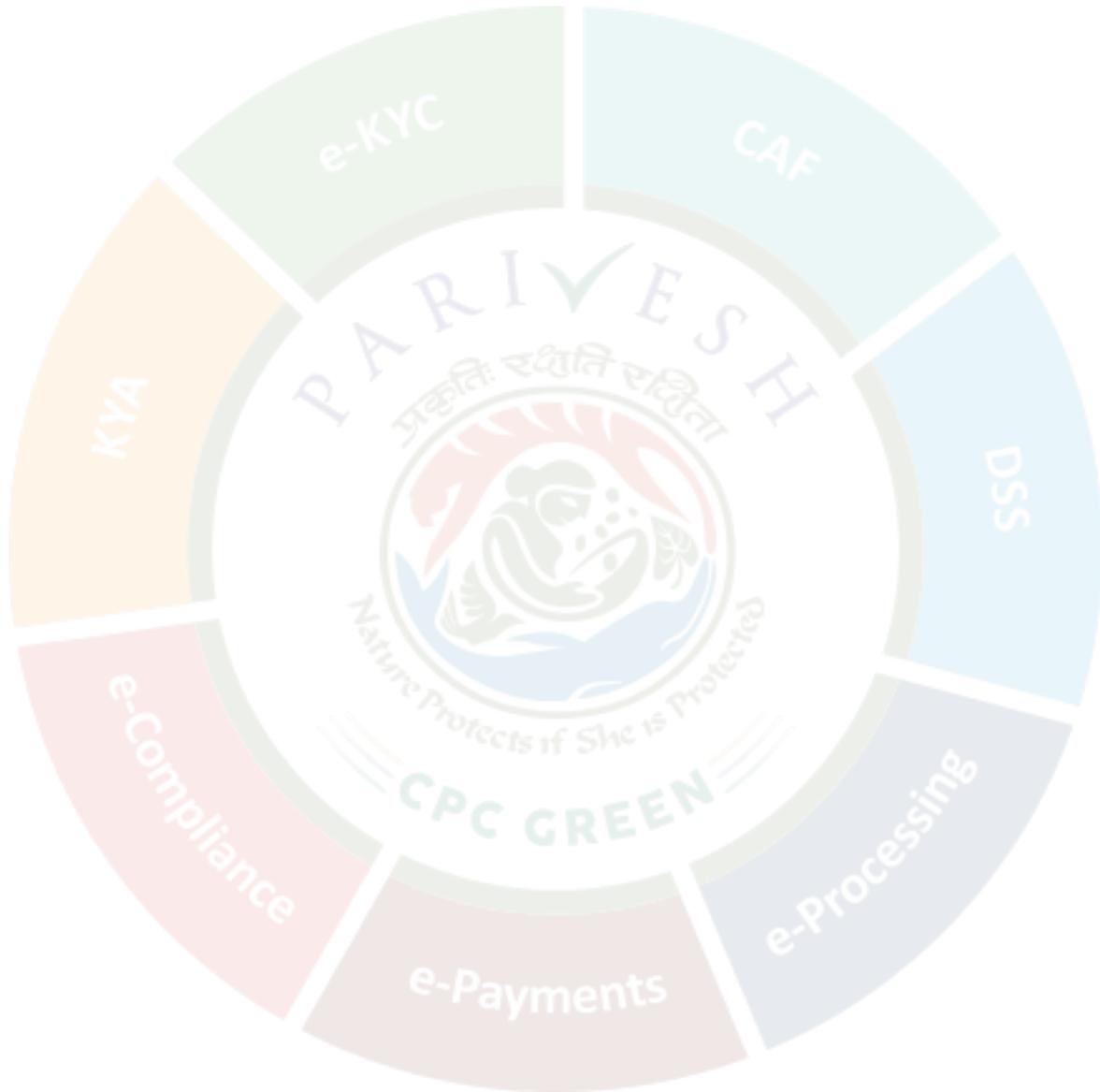
S. No.	Particulars	Details			Remarks	
i.	Total land	20.07 ha			Land use: Industrial land (Own Land)	
ii.	Land acquisition details as per MoEF&CC O.M. dated 7/10/2014	Total project area is already in possession.			-	
iii.	Existence of habitation & involvement of R&R, if any.	<b>Project Site:</b> Nil			R&R plan is not applicable.	
		<b>Study Area:</b>				
		<b>Habitation</b>	<b>Distance (km)</b>	<b>Direction</b>		
		Sikanderpur	0.81	S		
Bhagwanpur	4.05	SE				
iv.	Latitude and Longitude of all corners of the project site.	<b>Points</b>	<b>Latitude</b>	<b>Longitude</b>	-	
		1.	29°57'53"N	77°46'21"E		
		2.	29°57'58.69"N	77°46'22.60"E		
		3.	29°58'2.59"N	77°46'25.05"E		
		4.	29°58'9.33"N	77°46'5.69"E		
		5.	29°58'05"N	77°46'02"E		
		6.	29°58'10.76"N	77°46'3.70"E		
		7.	29°58'15.80"N	77°46'8.52"E		
		8.	29°58'12.96"N	77°46'9.65"E		
		9.	29°58'14.39"N	77°46'10.63"E		
		10.	29°58'16.92"N	77°46'13.83"E		
		11.	29°58'18.51"N	77°46'15.25"E		
		12.	29°58'16.86"N	77°46'17.70"E		
		13.	29°58'11.39"N	77°46'12.23"E		
v.	Elevation of the project site	Highest -310 MSL; Lowest -268 MSL			-	
vi.	Involvement of Forest land if any.	No forest land is involved in the project area.			-	
vii.	Water body (Rivers, Lakes, Pond, Nala, Natural Drainage, canal, etc.) exists within the project site as well as study area	<b>Project Site:</b> No water body exists within project site			-	
		<b>Study area:</b>				
		<b>Water Bodies</b>				
		<b>S.No</b>	<b>Name of Water Body</b>	<b>Distance (Km)</b>		<b>Direction</b>
		<b>Distance from lease boundary</b>				

S. No.	Particulars	Details				Remarks
		1.	Solani River	2.5	E	
		2.	Kali River (Peela Khara Nala)	2.6	NW	
		3.	Hindan River	8.3	NW	
viii.	Existence of ESZ/ESA/national park/wildlife sanctuary/biosphere reserve/tiger reserve/elephant reserve etc. if any within the study area	Nil				-
		<b>Study Area:</b>				
		<b>S. No.</b>	<b>Description</b>	<b>Distance (Km)</b>	<b>Direction</b>	
		1	Sarrauda RF	8.4	NE	



## Unit configuration and capacity

Sl. No.	Facility	Existing Capacity (MTPA)	Proposed Capacity (MTPA)	Total Capacity after expansion (MTPA)
1	Cement Grinding Unit	1.8	1.2	3.0

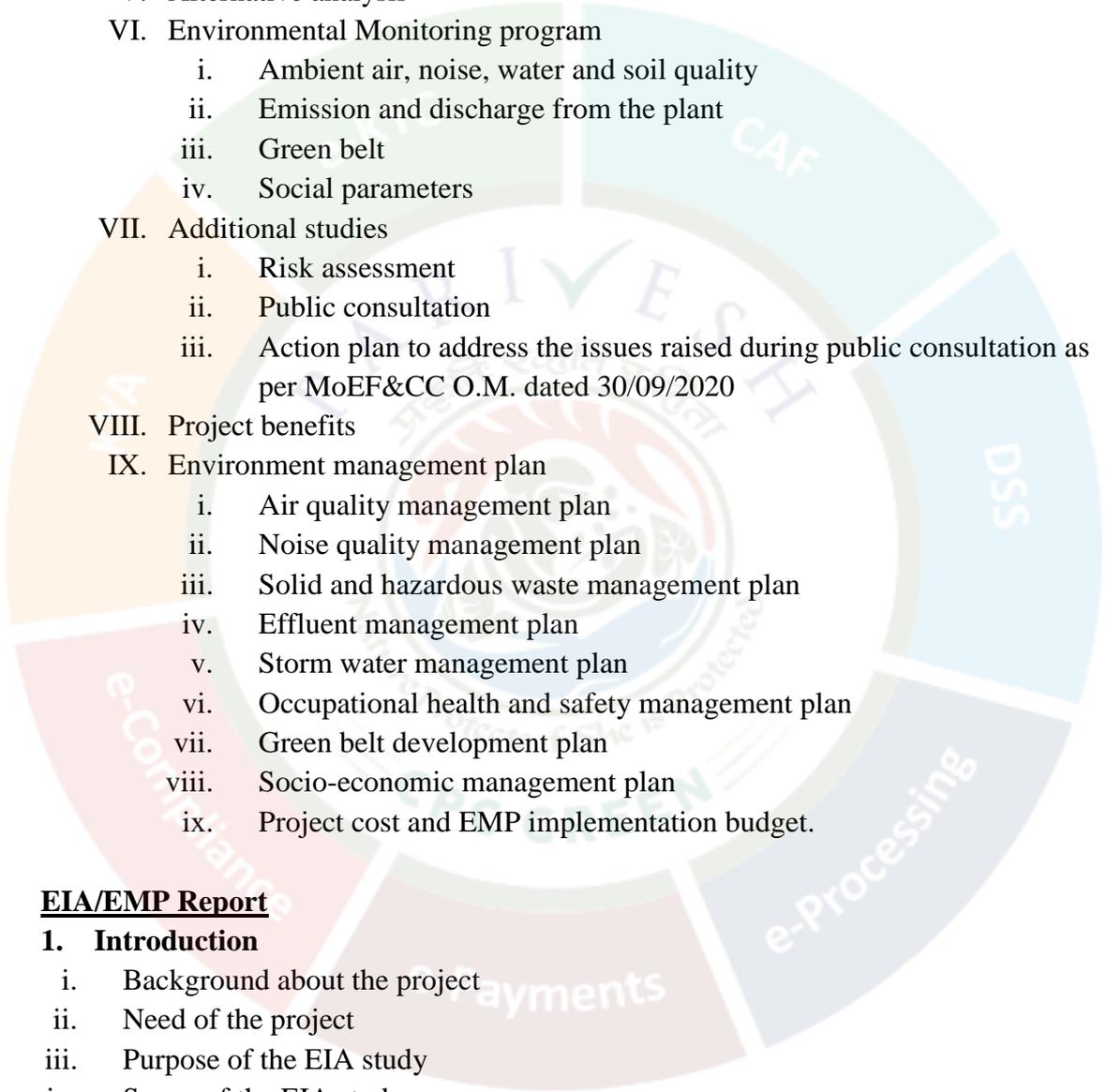


**Standard TOR****Standard ToR in line with Appendix III of the EIA, 2006.  
applicable to Proposals Under Industry-1 Sector****Preliminary requirements:**

- i. EIA/EMP report cover page shall consists of project title with location, applicable schedule of the EIA Notification, 2006, ToR letter No. with date, study period along with EIA consultant & laboratory details with QCI/NABET/NABL accreditation certificate detail.
- ii. Besides, following points shall be compiled as per QCI/NABET norms:
  - a. Disclaimer by the EIA consultant.
  - b. Declaration by the Functional Area Experts contributed to the EIA study and declaration by the head of the accredited consultant organization/authorized person.
  - c. Undertaking by the project proponent owning the contents (information and data) of the EIA/EMP report.
  - d. Undertaking by the EIA consultant regarding compliance of ToR issued by MoEF&CC.
  - e. Consultant shall submit the Plagiarism Certificate for the EIA/EMP Report.

**Structure of EIA/EMP report****Executive Summary**

- i. Table of Contents of the EIA report including list of tables/figures/annexures/abbreviations/symbols/notations.
- ii. Point wise compliance to the ToR issued by MoEF&CC.
- iii. Executive Summary
  - I. Introduction
    - i. Name of the project along with applicable schedule and category as per EIA, 2006.
    - ii. Location and accessibility
  - II. Project description
    - i. Resource requirements (Land; water; fuel; manpower)
    - ii. Operational activity
    - iii. Key pollution concerns
  - III. Baseline Environment Studies
    - i. Ambient air quality
    - ii. Ambient Noise quality
    - iii. Traffic study
    - iv. Surface water quality
    - v. Ground water quality
    - vi. Soil quality
    - vii. Biological Environment
    - viii. Land use

- 
- ix. Socio-economic environment
  - IV. Anticipated impacts
    - i. Impact on ambient air quality
    - ii. Impact on ambient noise quality
    - iii. Impact on road and traffic
    - iv. Impact on surface water resource and quality
    - v. Impact on ground water resource and quality
    - vi. Impact on terrestrial and aquatic habitat
    - vii. Impact on socio-economic environment
  - V. Alternative analysis
  - VI. Environmental Monitoring program
    - i. Ambient air, noise, water and soil quality
    - ii. Emission and discharge from the plant
    - iii. Green belt
    - iv. Social parameters
  - VII. Additional studies
    - i. Risk assessment
    - ii. Public consultation
    - iii. Action plan to address the issues raised during public consultation as per MoEF&CC O.M. dated 30/09/2020
  - VIII. Project benefits
  - IX. Environment management plan
    - i. Air quality management plan
    - ii. Noise quality management plan
    - iii. Solid and hazardous waste management plan
    - iv. Effluent management plan
    - v. Storm water management plan
    - vi. Occupational health and safety management plan
    - vii. Green belt development plan
    - viii. Socio-economic management plan
    - ix. Project cost and EMP implementation budget.

## **EIA/EMP Report**

### **1. Introduction**

- i. Background about the project
- ii. Need of the project
- iii. Purpose of the EIA study
- iv. Scope of the EIA study

### **2. Project description**

#### **A. Site Details**

- i. Location of the project site covering village, Taluka/Tehsil, District and State.
- ii. Site accessibility
- iii. A digital toposheet in pdf or shape file compatible to google earth of the study area of radius of 10km and site location preferably on 1:50,000 scale. (including all eco-sensitive areas and environmentally sensitive places).

- iv. Latest High-resolution satellite image data having 1 m - 5 m spatial resolution like quickbird, Ikonos, IRS P-6 pan sharpened etc., along with delineation of plant boundary co-ordinates. Area must include at least 100 m all around the project location.
- v. Environment settings of the site and its surrounding along with map.
- vi. A list of major industries with name, products and distance from plant site within study area (10km radius) and the location of the industries shall be depicted in the study area map.
- vii. In case if the project site is in vicinity of the water body, 50 meters from the edge of the water body towards the site shall be treated as no development/construction zone. If it's near the wetland, Guidelines for implementing Wetlands (Conservation and Management) Rules, 2017 may be followed.
- viii. In case if the project site is in vicinity of the river, the industry shall not be located within the river flood plain corresponding to one in 25 years flood, as certified by concerned District Magistrate/Executive Engineer from State Water Resources Department (or) any other officer authorized by the State Government for this purpose as per the provisions contained in the MoEF&CC Office Memorandum dated 14/02/2022.
- ix. In case of canal/ nala/ seasonal drain and any other water body passing through project site, the PP shall submit the suitable steps /conservation plan/mitigation measures along with contouring, Run -off calculations, disposal etc. A robust and full proof Drainage Conservation scheme to protect the natural drainage/water bodies and its flow parameters; along with Soil conservation scheme and multiple Erosion control measures shall be provided in the report.
- x. Type of land, land use of the project site needs to be submitted.
- xi. Status of acquisition of land. If acquisition is not complete, stage of the acquisition process as per the MoEF&CC O.M. dated 7/10/2014 shall be furnished.
- xii. Project proponent shall prepare Engineering layout plan showing all internal roads minimum 6 m width and 9 m turning radius for smooth traffic flow inside including fire tender as per NBC. Road network shall connect all service areas in layout. This drawing shall include area statement showing plot area, area under roads, parking, green belt with calculations and % with respect to plot area of project site and proper indexing. If located within an Industrial area/Estate/Complex, layout of Industrial Area indicating location of unit within the Industrial area/Estate.
- xiii. Project proponent shall submit contour map of project site along with drainage disposal system with calculations and drawings supported with proper indexing including Rain Water Harvesting details with calculations mentioning about GW recharge along with relevant drawing.
- xiv. A detailed report covering all aspects of Fire Safety Management and Fire Emergency Plan shall be submitted.
- xv. Details of drone survey for the site, needs to be included in report and presented before the EAC during appraisal of the project.

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

- i. Status of Forest Clearance for the use of forest land shall be submitted.
- ii. Copy of application submitted for clearance under the Wildlife (Protection) Act, 1972, to the Standing Committee of the National Board for Wildlife if the project site located within notified Eco-Sensitive Zone, 10 km radius of national park/sanctuary wherein final ESZ notification is not in place as per MoEF&CC Office Memorandum dated 8/8/2019.
- iii. The projects to be located within 10 km of the National Parks, Sanctuaries, Biosphere Reserves, Migratory Corridors of Wild Animals, Eco-sensitive Zone and Eco-sensitive areas, the project proponent shall submit the map duly authenticated by Divisional Forest Officer showing the distance between the project site and the said areas.
- iv. Wildlife Conservation Plan duly authenticated by the Competent Authority of the State Government for conservation of Schedule I fauna along with budget and action plan, if any exists in the study area.

### C. Salient features of the project

- i. Products with capacities in **Tons per Annum** for the proposed project.
- ii. If expansion project, status of implementation of existing project, details of existing/proposed products with production capacities in Tons per Annum.
- iii. Site preparatory activities.
- iv. List of raw materials required and their source along with mode of transportation.
- v. Other than raw materials, other chemicals and materials required with quantities and storage capacities.
- vi. Manufacturing process details along with process flow diagram of proposed units.
- vii. Consolidated materials and energy balance for the project.
- viii. Total requirement of surface/ ground water and power with their respective sources, status of approval.
- ix. Water balance diagram
- x. Details of Emission, effluents, hazardous waste generation and mode of disposal during construction as well as operation phase.
- xi. Man-power requirement.
- xii. Cost of project and scheduled time of completion.
- xiii. In case of expansion projects, project proponent shall submit structural stability certificate showing whether existing structure withstand for proposed expansion activity.
- xiv. Brief on present status of compliance (Expansion/modernization proposals)
  - a. Cumulative Environment Impact Assessment for the existing as well as the proposed expansion/modernization shall be carried out.
  - b. In case of ground water drawl for the existing unit, action plan for phasing out of ground water abstraction in next two years except for domestic purposes and shall switch over to 100 % use of surface water from nearby source.
  - c. Copy of all the Environment Clearance(s) including Amendments/validity of extension/transfer of EC, there to obtained for the project from MoEF&CC/SEIAA shall be attached as Annexures. A Certified Compliance Report (CCR) of the Integrated Regional Office of the Ministry of Environment, Forest and Climate Change/ or concerned

authority as per OM No. IA3-22/10/2022-IA.III [E 1772581], dated 8<sup>th</sup> June, 2022 on the status of compliance of conditions stipulated in all the existing environment clearances including amendments shall be provided. A Certified Compliance Report (CCR) issued by the concerned Authority shall be valid for a period of one year from the date of inspection.

- d. In case the existing project has not obtained Environment Clearance, reasons for not taking EC under the provisions of the EIA Notification 1994 and/or EIA Notification 2006 shall be provided. A proper justification needs to be submitted along with documentary proof. Copies of Consent to Establish/No Objection Certificate and Consent to Operate (in case of units operating prior to EIA Notification 1994 or 2006, CTE and CTO of FY 2005-2006) obtained from the SPCB shall be submitted. Further, compliance report to the conditions of CTO from the Regional Office of the SPCB shall be submitted, as per OM No. IA3-22/10/2022-IA.III [E 1772581], dated 8<sup>th</sup> June, 2022. CCR on CTO conditions issued by the concerned SPCBs/PCCs shall be valid for a period of one year from the date of inspection of the project.

### 3. Description of the Environment

- i. Study period
- ii. Approach and methodology for data collection as furnished below.

Attributes	Sampling		Remarks
	Network	Frequency	
<b>A. Air Environment</b>			
<b>Micro-Meteorological</b> <ul style="list-style-type: none"> <li>• Wind speed (Hourly)</li> <li>• Wind direction</li> <li>• Dry bulb temperature</li> <li>• Wet bulb temperature</li> <li>• Relative humidity</li> <li>• Rainfall</li> <li>• Solar radiation</li> <li>• Cloud cover</li> <li>• Environmental Lapse Rate</li> </ul>	Minimum 1 site in the project impact area	1 hourly continuous	<ul style="list-style-type: none"> <li>• IS 5182 Part 1-20</li> <li>• Site specific primary data is essential</li> <li>• Secondary data from IMD, New Delhi</li> <li>• CPCB guidelines to be considered.</li> </ul>
<b>Pollutants</b> <ul style="list-style-type: none"> <li>• PM<sub>2.5</sub></li> <li>• PM<sub>10</sub></li> <li>• SO<sub>2</sub></li> <li>• NO<sub>x</sub></li> <li>• CO</li> <li>• HC</li> <li>• Other parameters relevant to the project</li> </ul>	At least 8-12 locations	As per National Ambient Air Quality Standards, CPCB Notification.	<ul style="list-style-type: none"> <li>• Sampling as per CPCB guidelines</li> <li>• Collection of AAQ data (except in monsoon season)</li> <li>• Locations of various stations</li> </ul>

Attributes	Sampling		Remarks
	Network	Frequency	
and topography of the area			<p>for different parameters should be related to the characteristic properties of the parameters.</p> <ul style="list-style-type: none"> <li>The monitoring stations shall be based on the NAAQM standards as per GSR 826(E) dated 16/11/2009 and take into account the predominant wind direction, population zone and sensitive receptors including reserved forests,</li> <li>Raw data of all AAQ measurement for 12 weeks of all stations as per frequency given in the NAAQM Notification of 16/11/2009 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</li> </ul>

Attributes	Sampling		Remarks
	Network	Frequency	
			annexure to the EIA Report.
<b>B. Noise</b>			
<ul style="list-style-type: none"> <li>Hourly equivalent noise levels</li> </ul>	At least 8-12 locations	As per CPCB norms	-
<b>C. Water</b>			
<b>Parameters for water quality</b> <ul style="list-style-type: none"> <li>pH, temp, turbidity, magnesium hardness, total alkalinity, chloride, sulphate, nitrate, fluoride, sodium, potassium, salinity</li> <li>Total nitrogen, total phosphorus, DO, BOD, COD, Phenol</li> <li>Heavy metals</li> <li>Total coliforms, faecal coliforms</li> <li>Phyto-plankton</li> <li>Zoo-plankton</li> <li>Microalgae/microalgal bloom</li> </ul>	Samples for water quality should be collected and analyzed as per: <ul style="list-style-type: none"> <li>IS: 2488 (Part 1-5) methods for sampling and testing of Industrial effluents</li> <li>Standard methods for examination of water and wastewater analysis published by American Public Health Association.</li> </ul>		
<b>For River Bodies</b> <ul style="list-style-type: none"> <li>Total Carbon</li> <li>pH</li> <li>Dissolved Oxygen</li> <li>Biological Oxygen Demand</li> <li>Free NH4</li> <li>Boron</li> <li>Sodium Absorption Ratio</li> <li>Electrical Conductivity</li> <li>TDS</li> </ul>	<ul style="list-style-type: none"> <li>Surface water quality of the nearest River (60m upstream and downstream) and other surface water bodies</li> </ul>	<ul style="list-style-type: none"> <li>Yield of water sources to be measured during critical season</li> <li>Standard methodology for collection of surface water (BIS standards)</li> </ul>	
<b>For Ground Water</b>	<ul style="list-style-type: none"> <li>Ground water monitoring data should be collected at minimum of 8 locations (from existing wells /tube wells/existing current records) from the study area and shall be included.</li> </ul>		

Attributes	Sampling		Remarks
	Network	Frequency	
<b>D. Traffic Study</b>			
<ul style="list-style-type: none"> <li>Type of vehicles</li> <li>Frequency of vehicles for transportation of materials</li> <li>Additional traffic due to proposed project</li> <li>Parking arrangement</li> </ul>	-		
<b>E. Land Environment</b>			
<b>Soil</b> <ul style="list-style-type: none"> <li>Particle size distribution</li> <li>Texture</li> <li>pH</li> <li>Electrical conductivity</li> <li>Cation exchange capacity</li> <li>Alkali metals</li> <li>Sodium Absorption Ratio (SAR)</li> <li>Permeability</li> <li>Water holding capacity</li> <li>Porosity</li> </ul>	Soil samples be collected as per BIS specifications		
<b>Land use/Landscape</b> <ul style="list-style-type: none"> <li>Location code</li> <li>Total project area</li> <li>Topography</li> <li>Drainage (natural)</li> <li>Cultivated, forest, plantations, water bodies, roads and settlements</li> </ul>	-		
<b>E. Biological Environment</b>			
<b>Aquatic</b> <ul style="list-style-type: none"> <li>Primary productivity</li> <li>Aquatic weeds</li> <li>Enumeration of phyto plankton, zoo plankton and benthos</li> <li>Fisheries</li> <li>Diversity indices</li> <li>Trophic levels</li> </ul>	<ul style="list-style-type: none"> <li>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. Indicator species which indicate ecological and environment degradation should be identified and included to clearly state whether the proposed project would result in to any adverse effect on any species.</li> </ul>		

Attributes	Sampling		Remarks
	Network	Frequency	
<ul style="list-style-type: none"> <li>Rare and endangered species</li> <li>Marine Parks/ Sanctuaries/ closed areas /coastal regulation zone (CRZ)</li> </ul> <p><b>Terrestrial</b></p> <ul style="list-style-type: none"> <li>Vegetation-species list, economic importance, forest produce, medicinal value</li> <li>Importance value index (IVI) of trees</li> <li>Fauna</li> <li>Avi fauna</li> <li>Rare and endangered species</li> <li>Sanctuaries / National park / Biosphere reserve</li> <li>Migratory routes</li> </ul>			<ul style="list-style-type: none"> <li>Samples to collect from upstream and downstream of discharge point, nearby tributaries at downstream, and also from dug wells close to activity site.</li> <li>For forest studies, direction of wind should be considered while selecting forests.</li> <li>Secondary data to collect from Government offices, NGOs, published literature.</li> </ul>
<b>F. Socio-economic</b>			
<ul style="list-style-type: none"> <li>Demographic structure</li> <li>Infrastructure resource base</li> <li>Economic resource base</li> <li>Health status: Morbidity pattern</li> <li>Cultural and aesthetic attributes</li> <li>Education</li> </ul>			<ul style="list-style-type: none"> <li>Socio-economic survey is based on proportionate, stratified and random sampling method.</li> <li>Primary data collection through questionnaire</li> <li>Secondary data from census records, statistical hard books, topo sheets, health records and relevant official records available with Govt. agencies</li> </ul>

iii. Interpretation of each environment attribute shall be enumerated and summarized as given below:

- Ambient air quality
- Ambient Noise quality
- Surface water quality
- Ground water quality
- Soil quality
- Biological Environment

- Land use
- Socio-economic environment

**4. Anticipated Environment Impacts and mitigation measures (In case of expansion, cumulative impact assessment shall be carried out)**

- i. Identification of potential impacts in the form of a **matrix** for the construction and operation phase for all the environment components

Activity	Environment	Ecological	Socio-economic
Construction phase			
Operation phase			

- ii. Impact on ambient air quality (Sources; Embedded control measures; Assessment; Mitigation measures; Residual impact)

- Construction phase
- Operation phase

- Details of stack emissions from the existing as well as proposed activity.
- Assessment of ground level concentration of pollutants from the stack emission based on AQIP Modelling The air quality contours shall be plotted on a location map showing the location of project site, habitation nearby, sensitive receptors, if any along with wind rose map for respective period
- Impact on ground level concentration, under normal, abnormal and emergency conditions. Measures to handle emergency situations in the event of uncontrolled release of emissions.

- iii. Impact on ambient noise quality (Sources; Embedded control measures; Assessment; Mitigation measures; Residual impact)

- Construction phase
- Operation phase

- iv. Impact on traffic (Sources; Embedded control measures; Assessment; Mitigation measures; Residual impact)

- Construction phase
- Operation phase

- v. Impact on soil quality (Sources; Embedded control measures; Assessment; Mitigation measures; Residual impact)

- Construction phase
- Operation phase

- vi. Impact on land use (Sources; Embedded control measures; Assessment; Mitigation measures; Residual impact)

- Construction phase
- Operation phase

- vii. Impact on surface water resource and quality (Sources; Embedded control measures; Assessment; Mitigation measures; Residual impact)

- Construction phase
- Operation phase

- viii. Impact on ground water resource and quality (Sources; Embedded control measures; Assessment; Mitigation measures; Residual impact)
  - a. Construction phase
  - b. Operation phase
- ix. Impact on terrestrial and aquatic habitat (Sources; Embedded control measures; Assessment; Mitigation measures; Residual impact)
  - a. Construction phase
  - b. Operation phase
- x. Impact on socio-economic environment (Sources; Embedded control measures; Assessment; Mitigation measures; Residual impact)
  - a. Construction phase
  - b. Operation phase
- xi. Impact on occupational health and safety (Sources; Embedded control measures; Assessment; Mitigation measures; Residual impact)
  - a. Construction phase
  - b. Operation phase

**5. Analysis of Alternatives (Technology & Site)**

- i. No project scenario
- ii. Site alternative
- iii. Technical and social concerns
- iv. Conclusion

**6. Environmental Monitoring Program**

- i. Details of the Environment Management Cell
- ii. Performance monitoring schedule for all pollution control devices shall be furnished.
- iii. Corporate Environment Policy
  - a. 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.
  - b. Does the Environment Policy prescribe for standard operating process / procedures to bring into focus any infringement / deviation / violation of the environment or forest norms / conditions? If so, it may be detailed in the EIA.
  - c. What is the hierarchical system or Administrative order of the company to deal with the environment issues and for ensuring compliance with the environment clearance conditions? Details of this system may be given.
  - d. Does the company have system of reporting of non compliances / violations of environment 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
- iv. Action plan for **post-project environment monitoring matrix:**

Activity	Aspect	Monitoring Parameter	Location	Frequency	Responsibility
Construction phase					
Operation phase					

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## 7. Additional Studies

- i. Project proponent shall submit a study report on Decarbonisation program, which would essentially consist of company's carbon emissions, carbon budgeting/ balancing, carbon sequestration activities and carbon capture, use and storage after offsetting strategies. Further, the report shall also contain time bound action plan to reduce its carbon intensity of its operations and supply chains, energy transition pathway from fossil fuels to Renewable energy etc. All these activities/ assessments should be measurable and monitorable with defined time frames.
- ii. Details of adoption/ implementation status/plan to achieve the goal of Glasgow COP26 Climate Submit with regard to enhance the non-fossil energy, use of renewable energy, minimization of net carbon emission and carbon intensity with long-term target of "net Zero" emission.
- iii. Implementation status/measures adopted for avoiding the generation of single used plastic waste.
- iv. In cases the project is located in Critically and Severely Polluted Areas, additional mitigation measures adopted and detailed action plan to be submitted in the EIA/EMP Report as per MoEF&CC O.M. No. 22-23/2028-IA.III dated 31/10/2019 and MoEF&CC O.M. No. 22-23/2028-IA.III dated 5/07/2022 has to be submitted.
- v. Public consultation details (Entire proceedings as separate annexure along with authenticated English Translation of Public Consultation proceedings).
- vi. As part of Corporate Environment Responsibility (CER) activity, company shall adopt nearby villages based on the socio-economic survey and undertake community developmental activities in consultation with the village Panchayat and the District Administration. In this regard, time bound action plan as per the MoEF&CC Office Memorandum dated 30/09/2020 shall be submitted.
- vii. Summary of issues raised during public consultation along with action plan to address the same as per MoEF&CC O.M. dated 30/09/2020

S No	Physical activity and action plan		Year of implementation (Budget in INR)			Total Expenditure (Rs. in Crores)
	Name of the Activity	Physical Targets	1 <sup>st</sup>	2 <sup>nd</sup>	3 <sup>rd</sup>	

### viii. Risk assessment

- Methodology
- Hazard identification
- Frequency analysis
- Consequence analysis
- Risk assessment outcome

### ix. Emergency response and preparedness plan

## 8. Project Benefits

- i. Environment benefits
- ii. Social infrastructure

- iii. Employment and business opportunity
- iv. Other tangible benefits

## **9. Environment Cost Benefit Analysis**

- i. Net present value
- ii. Internal rate of return
- iii. Benefit cost ratio
- iv. Cost effectiveness analysis

## **10. Environment Management Plan (Construction and Operation phase)**

- i. Air quality management plan
- ii. Noise quality management plan
- iii. Action plan for hazardous waste management
- iv. Action plan for solid waste management
- v. Action plan for e-waste management.
- vi. Action plan for plastic waste management.
- vii. Action plan for construction and demolition waste management.
- viii. Effluent management plan
- ix. Storm water management plan
- x. Rain water harvesting plan
- xi. Plan for maximum usage of waste water/treated water in the Unit
- xii. Occupational health and safety management plan
- xiii. Green belt development plan: An action plan for Green Belt development consisting of 3 tiers of plantations of native species all along the periphery of the project of adequate width shall be raised in 33% of total area with a tree density shall not less than 2500 per ha within a time frame of one year shall be submitted. Survival rate of green belt shall be monitored on periodic basis to ensure that survival rate not be less than 80 %.
- xiv. Socio-economic management plan
- xv. Wildlife conservation plan (In case of presence of schedule I species)
- xvi. Total capital cost and recurring cost/annum for environment pollution control measures shall be included.

## **11. Conclusion of the EIA study**

- 12. In addition to the above, 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.

**Additional ToRs****Standard ToRs FOR CEMENT INDUSTRY [3(b)]**

1. Limestone and coal linkage documents along with the status of environment 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 Corporate Responsibility for Environmental Protection (CREP) guidelines shall 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. Provision of Alternate fuels.
10. Details of Implementation of Fly Ash Management Rules
11. Emission/Effluent norms as per GSR 496 (E) dated 9/5/2016 [EPA Rules 1986].
12. Action plan for the stock piles with impervious floor, provision of garland drains and catch pits to trap run off material shall be submitted.
13. Action plan to limit the particulate matter emission from all the stacks below 30 mg/Nm<sup>3</sup> shall be furnished.
14. PP shall explore the possibility of plastic waste utilization in the Plant/Unit process.
15. Action plan for 100 % solid waste utilization shall be submitted.
16. PM (PM<sub>10</sub> and P<sub>2.5</sub>) present in the ambient air must be analysed for source analysis – natural dust/RSPM generated from plant operations (trace elements) of PM<sub>10</sub> to be carried over.

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