

2 PROPOSED TERMS OF REFERENCE

Proposed Terms of Reference (TOR) are prepared based on Chapter 4, 4(d), 4(e), Chapter 1, Section 1(d) of "Standard Terms of Reference for EIA/EMP Report for projects / activities requiring Environment Clearance under EIA Notification, 2006" as published by Ministry of Environment, Forest & Climate Change, April, 2015.

Summarized Terms of Reference for this project is as tabulated below:

Table 1: Proposed Terms of Reference

S. No.	Proposed Terms of Reference
1.	Executive Summary
2.	Introduction
3.	Details of the EIA Consultant including NABET accreditation
4.	Information about the project proponent
5.	Importance and benefits of the project
6.	Project Description
7.	Cost of project and time of completion
8.	Products with capacities for the proposed project.
9.	If expansion project, details of existing products with capacities and whether adequate land is available for expansion, reference of earlier EC if any.
10.	List of raw materials required and their source along with mode of transportation.
11.	Other chemicals and materials required with quantities and storage capacities.
12.	Details of Emission, effluents, hazardous waste generation and their management.
13.	Requirement of water, power, with source of supply, status of approval, water balance diagram, man-power requirement (regular and contract).
14.	Process description along with major equipment and machineries, process flow sheet (quantitative) from raw material to products to be provided.
15.	Hazard identification and details of proposed safety systems.
	Expansion/modernization proposals
16.	Copy of all the Environmental Clearance(s) including Amendments thereto obtained for the project from MOEF/SEIAA shall be attached as an Annexure. A certified copy of the latest Monitoring Report of the Regional Office of the Ministry of Environment and Forests as per circular dated 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 shall be attached with the EIA-EMP report
17.	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
	Site Details
18.	Location of the project site covering village, Taluka/Tehsil, District and State, Justification for selecting the site,

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	whether other sites were considered.
19.	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)
20.	Details w.r.t. option analysis for selection of site.
21.	Co-ordinates (lat-long) of all four corners of the site.
22.	Google map-Earth downloaded of the project site.
23.	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.
24.	Photographs of the proposed and existing (if applicable) plant site. If existing, show photographs of plantation/greenbelt, in particular.
25.	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).
26.	A list of major industries with name and type within study area (10km radius) shall be incorporated. Land use details of the study area.
27.	Geological features and Geo-hydrological status of the study area shall be included.
28.	Details of Drainage of the project upto 5km radius of study area. If the site is within 1 km radius of any major river, peak and lean season river discharge as well as flood occurrence frequency based on peak rainfall data of the past 30 years. Details of Flood Level of the project site and maximum Flood Level of the river shall also be provided. (mega green field projects).
29.	Status of acquisition of land. If acquisition is not complete, stage of the acquisition process and expected time of complete possession of the land.
30.	R&R details in respect of land in line with state Government policy.
	Environmental Status
31.	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.
32.	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,
33.	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.
34.	Surface water quality of nearby River (100m upstream and downstream of discharge point) and other surface drains at eight locations as per CPCB/MoEF&CC guidelines.
35.	Whether the site falls near to polluted stretch of river identified by the CPCB/MoEF&CC, if yes give details.
36.	Ground water monitoring at minimum at 8 locations shall be included.
37.	Noise levels monitoring at 8 locations within the study area.
38.	Soil Characteristic as per CPCB guidelines.
39.	Traffic study of the area, type of vehicles, frequency of vehicles for transportation of materials, additional traffic due to proposed project, parking arrangement etc.

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40.	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.
41.	Socio-economic status of the study area
Impact and Environment Management Plan	
42.	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 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.
43.	Water Quality modelling - in case of discharge in water body.
44.	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.
45.	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.
46.	Details of stack emission and action plan for control of emissions to meet standards.
47.	Measures for fugitive emission control
48.	Budget allocation of resources and responsibilities for plan implementation.
49.	Details of the emergency preparedness plan for Hazardous material storage, handling and transportation and on-site and off-site disaster management plan.
50.	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.
Occupational health	
51.	Plan and fund allocation to ensure the occupational health & safety of all contract and casual workers
52.	Details of exposure specific health status evaluation of worker. If the workers' health is being evaluated by pre designed format, chest x rays, Audiometry, Spirometer, Vision testing (Far & Near vision, color vision and any other ocular defect) ECG, during pre-placement and periodical examinations give the details of the same. Details regarding last month analyzed data of above mentioned parameters as per age, sex, duration of exposure and department wise.
53.	Details of existing Occupational & Safety Hazards. What are the exposure levels of 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,
54.	Annual report of health status of workers with special reference to Occupational Health and Safety
Corporate Environment Policy	
55.	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
56.	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.

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57.	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
58.	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
59.	Details regarding infrastructure facilities such as sanitation, fuel, restroom etc. to be provided to the labor force during construction as well as to the casual workers including truck drivers during operation phase
Enterprise Social Commitment (ESC)	
60.	Adequate funds (at least 2.5 % of the project cost) shall be earmarked towards the Enterprise Social Commitment based on Public Hearing issues and item-wise details along with time bound action plan shall be included. Socio-economic development activities need to be elaborated upon.
61.	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.
62.	A tabular chart with index for point wise compliance of above TOR
SPECIFIC TERMS OF REFERENCE FOR CHLOR ALKALI INDUSTRIES AND SODA ASH	
63.	Details on demand of the product- chlorine and its associated products
64.	Details on raw materials (sodium chloride, potassium chloride, sea water, lime stone, coke, ammonia, additives etc.), its storage and handling
65.	Details of proposed source - specific pollution control schemes (salt washing, filtration, cell ventilating as, chlorine handling and safety, etc.) and equipment to meet the national standards
66.	Details on products to be made and handling-chlorine, caustic soda, etc
67.	Details on tail gas treatment
68.	Details on requirement of energy and water along with its source and authorization from the concerned department
69.	Details on ground water quality and surface water quality of nearby water sources and other surfaced rains. The parameters of water quality may include Residual chlorine*, TDS*, alkalinity*, pH* & Mercury* (in water & sediment), etc. (*- As applicable)
70.	Details on existing ambient air quality and expected, emissions for PM ₁₀ , PM _{2.5} , SO ₂ , NO _x , NH ₃ , CO, Chlorine, acid mist etc., and evaluation of the adequacy of the proposed pollution control devices to meet standards for point sources and to meet AAQ standards.
71.	Specific program to monitor safety and health protection of workers
72.	Risk assessment should also include leakages and location near to caustic soda plant & proposed measures for risk reduction
73.	Details of the emergency preparedness plan for chlorine/ Hydrogen storage, handling and transportation and on-site and off- site disaster management plan
74.	Details of handling ammonia and risk assessment.
75.	Details on water balance including water use, quantity of effluent generated, recycled and reused and its impact of discharge to receiving water body.
76.	Detail so effluent treatment plant, inlet and treated water quality with specific efficiency of each treatment unit in reduction in respect of all concerned/ regulated environmental parameters.

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77.	Details of CO ₂ emissions including its quantum per ton of soda ash
78.	Management plan for solid waste generation (fines of lime stone, grits, brine sludge etc.), storage, utilization and disposal modes
79.	In case of coast at plants details on extraction of seawater and effluent disposal, development of solar salt works based on sea water evaporation, etc
80.	Details on ground water quality and surface water quality of nearby waters ounces and other surfaced rains. The parameters of water quality may include Cl ⁻ *, Ca ²⁺ *, Na ⁺ *, SO ₄ ²⁻ *, NH ₄ ⁺ , Suspended solids* etc. (*- As applicable)
SPECIFIC TERMS OF REFERENCE FOR THERMAL POWER PLANT	
81.	Harnessing solar power within the premises of the plant particularly at available roof tops and other available areas shall be formulated and for expansion projects, status of implementation shall also be submitted
82.	Details of fly ash utilization plan as per the latest fly ash Utilization Notification of GOI along with firm agreements / MoU with contracting parties including other usages etc. shall be submitted. The plan shall also include disposal method / mechanism of bottom ash.
83.	The water requirement shall be optimized (by adopting measures such as dry fly ash and dry bottom ash disposal system, air cooled condenser, concept of zero discharge) and in any case not more than that stipulated by CEA from time to time, to be submitted along with details of source of water and water balance diagram. Details of water balance calculated shall take into account reuse and re-circulation of effluents.
84.	It shall also be ensured that a minimum of 500 m distance of plant boundary is kept from the HFL of river system / streams etc. and the boundary of site should also be located 500 m away from railway track and National Highways.
85.	Detailed plan for rainwater harvesting and its proposed utilization in the plant shall be furnished.
86.	Feasibility of near zero discharge concept shall be critically examined and its details submitted.
87.	Optimization of Cycles of Concentration (COC) along with other water conservation measures in the project shall be specified.
88.	Plan for recirculation of ash pond water and its implementation shall be submitted
89.	Radio activity and heavy metal contents of coal to be sourced shall be examined and submitted along with laboratory reports.
90.	Fuel analysis shall be provided. Details of auxiliary fuel, if any, including its quantity, quality, storage etc should also be furnished.
91.	Quantity of fuel required, its source and characteristics and documentary evidence to substantiate confirmed fuel linkage shall be furnished. The Ministry's Notification dated 02.01.2014 regarding ash content in coal shall be complied. For the expansion projects, the compliance of the existing units to the said Notification shall also be submitted
92.	For proposals based on imported coal, inland transportation and port handling and rail movement shall be examined and details furnished. The approval of the Port and Rail Authorities shall be submitted.