

Proposed Terms of Reference for EIA studies

The terms of reference are developed on consideration of following factors.

- Environmental setting of the project site
- Project Activities
- Statutory Requirements, Environmental Standards, Guidelines & code of conduct laid down by the Govt. of India.

Each of above factors are described below in brief –

1.0 Environmental Setting of Project –

1.1 General Climate:

The climate of this region may be considered as tropical, being moderately cold in winter, high humidities nearly all the year round and intensely warm in summer. The coldest month is January and the hottest being the month of May. The rainfall is mostly distributed between June to September.

1.2 Location of Environmentally Sensitive Zones within 10KM Radius from Proposed Site:

Project is not close to any environmentally sensitive zone like National Park, Bio-reserve, Tourist spots, historical monuments etc. There is no National Park or Bio-sphere within 10 km radius from the proposed site. Proposed expansion is coming within the plant premises.

1.3 Forest Land:

No forest land involved.

2.0 Project Activities Affecting Environmental Attributes – Some of the project activities are likely to have some impact on the environment. In order to identify the impact, prediction of qualitative and quantitative environmental impact shall be carried out based on the projection of additional emission due to construction / operation on various environmental attributes including social impacts if any.

3.0 Statutory Requirements – The environmental planning of the project will be done in a way that it satisfies all legal requirements and complies with environmental standards laid down by the regulators.

4.0 Components of EIA Study

The EIA study will have following components:

Introduction
Project Description
Description of the Environment
Anticipated Environmental Impacts & Mitigation Measures
Environmental Monitoring Programme (EMP)

Social Impact Assessment
Risk Assessment
Public hearing
Project Benefits
Organisational set up and Implementation Arrangement
Summary & Conclusion
Disclosure of Consultant

The EIA report will be prepared as per EIA notification, 14th September, 2006.

Each of above components is described below:

4.1 Project Description

This gives an outline of project and allied activities that are likely to affect environmental attributes.

4.2 Description of the Environment

Environmental attributes and baseline monitoring under EIA studies will be Included here.

Considering the environmental setting of the project, project activities and their interaction, environmental regulations and Standards, following environmental attributes, baseline data monitoring and duration of monitoring will be included in EIA studies.

Duration of EIA Study

Data generation and data collection will be conducted for one complete season i.e. three months in a season other than monsoon.

(a) Site Specific Micro Meteorological Data:

Micro Meteorological data (wind velocity, wind direction, temperature, humidity, rain fall and cloud cover) will be generated continuously at one hour intervals at one station throughout the monitoring period. Climatological data and Upper air data will be collected from the nearest Indian Meteorological Centre.

(b) Ambient Air Quality

Ambient air quality stations will be established as per the norms to determine the existing air quality status of the area.

Maximum of 08 Ambient Air Quality (AAQ) stations around the proposed plant site will be set up and will spread over 10 km radius with project site at centre. The locations of AAQ stations will be finalized based on predominant wind direction, land use & pattern of the study area and also taking into consideration the height of emissions release from the proposed plant.

The pollutants monitored shall be Suspended Particulate Matter (SPM), Respirable particulate matter (RPM), Oxides of Nitrogen (NO_x), Sulphur dioxide (SO₂) and Carbon Monoxide (CO).

Monitoring shall be done twice a week at all stations. Samples of 24 hourly duration shall be taken on each monitoring day.

Dust fall at each AAQ station shall be measured as monthly averages during the monitoring period.

(c) Water Quality

Eight samples of surface water and ground water will be collected and tested in lab to determine the water quality of the area. Location of sampling will be considered for the water bodies where proposed plant may discharge its treated effluent, and raw water. Raw water will be analyzed as per CPCB norms.

Ground water monitoring locations will be selected based on ground water movement with respect to the proposed plant.

The groundwater will be monitored as per parameters given in BIS 10500.

(d) Soil Quality

4 nos. of soil samples will be collected from the study area around the proposed plant site. Following parameters will be analyzed:

- Textural & Physio-chemical Parameters
- Nutrient

(e) Ecological Studies

Flora & Fauna study will be carried out within the study area. Floral survey will comprise of agricultural crops, trees, shrubs & plantation. The Survey will be based on:

- Personal observation
- Enquiry with local population
- Records available with Forest Department.

This survey will include identification of endangered & rare species as per red book.

(f) Noise Level Measurement

The ambient Noise levels, in dB(A) will be monitored at 5 locations in the study area and will be monitored for 24hrs in a day for one day during monitoring period,

(g) Socio-Economic Profile

The Socio-economic profile of the population living in study area will be prepared based on 2011 census Report.

Survey will be conducted through structured questionnaire in the study area. This survey will be based on following parameters.

- Gender distribution
- SC/ST profile
- Literacy Level
- Occupational Structure
- Land use pattern.

4.3 Anticipated Environmental Impacts & Mitigation Measures

Environmental impacts during construction and operational stages of the project on air, water, land, ecology and social economic pattern of the study area will be studied using quantitative or qualitative way. The mitigation measures to limit the impact to prescribed level in terms of air quality, effluent quality, noise level etc. will be suggested on the basis of impact determined.

(i) Air Quality

The impact on air quality covers emissions of PM, SO₂ and NO_x. The parameters will be monitored and corresponding predictions will be done to estimate the impacts after commencement of plant.

The impact will be assessed using USEPA model.

(ii) Water Quality

The impact on water quality will be determined by comparing the quality of effluent to be discharged with the standards prescribed by MOEF/ CPCB.

(iii) Flora & Fauna

Impact on flora & fauna will be determined by studying the area acquired by plant, species residing therein and emissions from the plant.

Mitigation Measures

Mitigation measures will be suggested in respect of following environmental attributes.

- Air Pollution.
- Water Pollution
- Noise Pollution
- Ash Utilisation

4.4 Social Impact Assessment

The proposed project will introduce a set of new activities, which will have significant impact on improving the socio-economic condition of the people of the

surrounding area. Such impacts may be marginal or non-marginal depending on the extent of change caused by the project to alter the existing equilibrium of the socio-economic system. The project is likely to bring long-term benefits for the local people. However, possibility of some obvious hardships having certain social cost cannot be ruled out. Various social impacts will be assessed in this chapter due to the proposed project.

4.5 Risk Assessment & Disaster Management Plan

Industrial activities, which produce, heat, store and handle hazardous substances, have a high hazard potential endangering the safety of man and environment at work place and outside. Recognizing the need to control and minimize the risks posed by such activities, the Ministry of Environment, Forests & Climate Change have notified the “Manufacture Storage & Import of Hazardous Chemicals Rules ”in the year 1989 and subsequently modified, inserted and added different clauses in the said rule to make it more stringent. For effective implementation of the rule, Ministry of Environment, Forests & Climate Change has provided a set of guidelines. The guidelines, in addition to other aspects, set out the duties required to be performed by the occupier along with the procedure. The rule also lists out the industrial activities and chemicals, which are required to be considered as hazardous. In this chapter risk assessment will be studied and included in this chapter. Disaster Management Plan will be prepared to take care of any disaster in the proposed plant and surrounding areas and is detailed as under:

4.6 Environmental Monitoring Programme (EMP)

The monitoring and evaluation of the management measures envisaged are critical activities in implementation of the Project. Monitoring involves periodic checking to ascertain whether activities are going according to the plans. It provides the necessary feedback for project management to keep the program on schedule. The purpose of the environmental monitoring plan is to ensure that the envisaged purpose of the project is achieved and results in desired benefits. In this chapter project specific detailed environmental monitoring programme to be implemented will be included.

4.7 EMP: Organizational Set Up and Implementation Arrangement

After commencing the project, regular monitoring of the various environmental parameters will be done to ensure effectiveness of the control measures. An environmental protection cell will be developed for this purpose under the charge of Manager (Environment) who will be responsible for making a monitoring schedule and ensuring the implementation of the same. The cell will look after the efficiency of the control measures adopted to keep pollution in check and will also keep on finding new control measures to further reducing the pollution. The laboratory and monitoring equipment required will also be recommended.

4.8 Summary & Conclusion

In this chapter the brief summary and conclusion of the study is being highlighted.