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Environmental Impact Assessment (EIA) - India

- **1977/78**: EIA as an administrative requirement based on Central Water Commission Guidelines

- **1994**: EIA legislation with 13 amendments during 1994 – 2006 for 32 numbers (nos.) of development projects

- **1997**: Public hearing mandated for all EIA category projects

- **2006**: EIA Notification in suppression of 1994 notification for 39 numbers (nos.) of development projects. Public consultation in place of public hearing
Stages in Prior Environmental Clearance Process - India

Stage - I  Screening for EIA Requirement

Stage - II  Scoping

Stage - III  Public Consultation based on Draft EIA

Stage - IV  Appraisal based on Final EIA

# GENERIC STRUCTURE OF EIA DOCUMENT

<table>
<thead>
<tr>
<th>S.NO</th>
<th>EIA STRUCTURE</th>
<th>CONTENTS</th>
</tr>
</thead>
</table>
| 1.   | Introduction                           | Purpose of the report                                                                                              Identification of project & project proponent  
Brief description of nature, size, location of the project and its importance to the country, region  
Scope of the study – details of regulatory scoping carried out (As per Terms of Reference) |
| 2.   | Project Description                    | Condensed description of those aspects of the project (based on project feasibility study), likely to cause environmental effects. Details should be provided to give clear picture of the following:  
Type of project  
Need for the project  
Location (maps showing general location, specific location, project boundary & project site layout)  
Size or magnitude of operation (incl. Associated activities required by or for the project  
Proposed schedule for approval and implementation  
Technology and process description  
Project description. Including drawings showing project layout, components of project etc. Schematic representations of the feasibility drawings which give information important for EIA purpose  
Description of mitigation measures incorporated into the project to meet environmental standards, environmental operating conditions, or other EIA requirements (as required by the scope)  
Assessment of New & untested technology for the risk of technological failure |
| 3.   | Description of the Environment         | Study area, period, components & methodology  
Establishment of baseline for valued environmental components, as identified in the scope  
Base maps of all environmental components |
| 4.   | Anticipated Environmental Impacts & Mitigation Measures | Details of Investigated Environmental impacts due to project location, possible accidents, project design, project construction, regular operations, final decommissioning or rehabilitation of a completed project  
Measures for minimizing and / or offsetting adverse impacts identified  
Irreversible and Irretrievable commitments of environmental components  
Assessment of significance of impacts (Criteria for determining significance, Assigning significance)  
Mitigation measures |

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<th>CONTENTS</th>
</tr>
</thead>
</table>
| 5.   | Analysis of Alternatives (Technology & Site) | In case, the scoping exercise results in need for alternatives:  
  - Description of each alternative  
  - Summary of adverse impacts of each alternative  
  - Mitigation measures proposed for each alternative, and  
  - Selection of alternative |
| 6.   | Environmental Monitoring Program | Technical aspects of monitoring the effectiveness of mitigation measures (incl. Measurement methodologies, frequency, location, data analysis, reporting schedules, emergency procedures, detailed budget & procurement schedules) |
| 7.   | Additional Studies |  
  - Public Consultation  
  - Risk assessment  
  - Social Impact Assessment, R&R Action Plans |
| 8.   | Project Benefits |  
  - Improvements in the physical infrastructure  
  - Improvements in the social infrastructure  
  - Employment potential –skilled; semi-skilled and unskilled  
  - Other tangible benefits |
| 9.   | Environmental Cost Benefit Analysis | If recommended at the Scoping stage |
| 10.  | EMP | Description of the administrative aspects of ensuring that mitigative measures are implemented and their effectiveness monitored, after approval of the EIA |
| 11.  | Summary & Conclusion (This will constitute the summary of the EIA Report) | Overall justification for implementation of the project  
  - Explanation of how, adverse effects have been mitigated |
| 12.  | Disclosure of Consultants engaged | The names of the Consultants engaged with their brief resume and nature of Consultancy rendered |

Assessment of Alternatives

150 Scoping documents and the corresponding EIA reports submitted during 2009-2014 to MOEFF&CC, available in public domain are reviewed.

Reports segregated on the basis of prescription of alternatives assessment during scoping stage.

Both sets of reports reviewed for quality of Alternatives Assessment.

Reports Reviewed and Sectors

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Sector</th>
<th>No. of Projects</th>
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<tbody>
<tr>
<td>1</td>
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<tr>
<td>2</td>
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### Scoping Documents Prescribing Assessment of Alternatives

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### EIA Reports with Assessment of Alternatives Chapter

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## Type of Alternatives Discussed in EIA Reports

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<th>Sector</th>
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*Others denote no description of alternatives despite keeping the heading of alternatives*
Alternatives - Discussion

INDUSTRY SECTOR

This Industry decided to undertake an “Alternative Analysis (AA)” for this project. The various alternatives are:

1. Raw materials
2. Technology
3. Engineering and Hardware
4. Site
5. ‘No-Project’

IRRIGATION SECTOR

The third alternative has been selected for establishment of reservoir due to low submergence area and moreover no complete rehabilitations are involved. Only a minimum of village forest, single crop area are coming in submergence area.

HIGHWAYS SECTOR

Analysis of alternatives & improvement proposals

OIL & GAS EXPLORATION

Analysis of Alternatives has been carried out considering the technical and operational feasibility.

1. Alternative locations
2. No Project Scenario
3. Safety Considerations
4. Options for use of Drilling Mud
The location of project is best suited for the start of Bulk Drugs Manufacturing activities. So no alternative for site is analysed.

Already best proven technology is proposed to be used in this project located in the Government demarked industrial area.

Analysis of Alternative Technologies

Already best proven technology is proposed to be used in this project. Hence the analysis of alternative technology does not arise.

ALTERNATIVE TECHNOLOGIES

Limestone mining, Cement manufacturing and Power generation technologies are well proven ones all over the world. Hence no technological failures are anticipated.

The manufacturing of Asbestos cement sheets & Accessories is a well proven technology all over the world. Hence no technological failures are anticipated. Hence no alternative technologies are considered.

Scoping exercise, (i.e. ToR issued by MoEFCC) does not specify any need for alternatives. Hence this exercise has not been done.
Reasons

Mandate: Conditional in SO 1533

Predominant Views
- Consultant: I do not know
- Proponent: I do not want/care
- Regulator: I do not want to – No statutory requirement

Way Forward

Mandate: Change in Statute
- Consultant: Awareness – guidance document/Mentoring
- Proponent: Positive Feedback
- Regulator: Refine TOR/Scoping Document
Thank You
Category - A projects

START

Checklist information as part of pre-feasibility report

Total = 210 days (With certainty)

Technical Review by MoEF

Specifications of TORs for EIA by Expert Committee (EC)

Draft EIA/EMP preparation

PH by SPCB

45 days By SPCB

Review by MoEF as per ToR

Appraisal by Independent Expert Committee

Communicate Inadequacies (if any)

60 days

(EC meets at least once every month on a fixed date)

Has decision been made by MoEF within 30 days

Decision by MoEF

Issue / Reject EC in terms of Expert Committee recommendation

END
### Environmental Clearance Process - Category - B projects

#### Category – B 1 projects

- **START**
- Checklist information (Form I & IA) and Conceptual plan
  
  Total = 10 months (With certainty)
  
  Technical Review by SEAC

- Specifications of TORs for EIA by SEAC

- EIA/EMP preparation

- Technical review by SEIAA as per ToR

- Appraisal by SEAC

- Communicate Inadequacies (if any)

- Reject EIA/EMP

- **END**

- **Recommended by SEAC**

- Yes

  **END**

- **NO**

SEIAA: State Level Environment Impact Assessment Authority

SEAC: State Expert Appraisal Committee

**ToR:** Terms of reference

#### Category – B 2 projects

- **START**

- **Total = 4 months (with certainty)**

- Checklist (Form I & IA) and Conceptual plan

- Technical review by SEIAA

- Appraisal by SEAC

- **Recommended?**

  **YES**

  **END**

  **NO**

SEIAA: State Level Environment Impact Assessment Authority

SEAC: State Expert Appraisal Committee
EAC and SEAC shall meet at least once in every month
Approval of TOR – 60 days (otherwise deemed for approval)
Public Hearing – 45 days (otherwise Central/State Government shall engage other agency/authority to complete the process)
The final EIA report and other documents shall be scrutinized in the office of the regulatory authority within 30 days
Appraisal by EAC or SEAC – 60 days (on receipt of the final EIA report and other documents)
Placing recommendations of EAC or SEAC before the competent authority for the final decision – within next 15 days
The applicant shall be informed at least 15 days prior to the schedule date of EAC/SEAC meeting
The minutes of the EAC/SEAC – within 5 working days & shall be displayed on the regulatory authority website

- All new projects/activities listed in Schedule
- Expansion and/or modernization of existing projects/activities with addition of capacities beyond the limits specified for the concerned sector
- Change in product mix
LIST OF PROJECT CATEGORIES REQUIRED TO OBTAIN EC

I. Mining extraction of natural resources and power generation (for a specified production capacity)
1(a) Mining of minerals
1(b) Offshore and onshore oil and gas exploration, development & production
1(c) River valley projects
1(d) Thermal Power plants
1(e) Nuclear power projects and processing of nuclear fuel

II. Primary Processing
2(a) Coal Washeries
2(b) Mineral beneficiation

III. Materials Production
3(a) Metallurgical industries (ferrous & non ferrous)
3(b) Cement plants
LIST OF PROJECT CATEGORIES REQUIRED TO OBTAIN EC

IV. Materials Processing

4(a) Petroleum refining industry
4(b) Coke oven plants
4(c) Asbestos milling and asbestos based products
4(d) Chlor-alkali industry
4(e) Soda ash industry
4(f) Leather/skin/hide processing industry

V. Manufacturing/Fabrication

5(a) Chemical fertilizers
5(b) Pesticides industry and pesticide specific intermediates (excluding formulations)
5(c) Petro-chemical complexes (industries based on processing of petroleum fractions & natural gas and/or reforming to aromatics)
5(d) Manmade fibres manufacturing
5(e) Petrochemical based complexes (processing other than cracking & reformation and not covered under the complexes)

5(f) Synthetic organic chemicals industry (dyes & dye intermediates; bulk drugs and intermediates excluding drug formulations; synthetic rubbers; basic organic chemicals, other synthetic organic chemicals and chemical intermediates)

5(g) Distilleries

5(h) Integrated paint industry

5(i) Pulp & paper industry excluding manufacturing of paper from waste paper and manufacture of paper from ready pulp with out bleaching

5(j) Sugar industry

5(k) Induction/arc furnaces/cupola furnaces 5TPH or more

VI. Service Sectors

6(a) Oil & gas transportation pipeline (crude and refinery/petrochemical products), passing through national parks/sanctuaries/coral reefs/ecologically sensitive areas including LNG Terminal

6(b) Isolated storage & handling of hazardous chemicals (as per threshold planning quantity indicated in column 3 of schedule 2 & 3 of MSIHC Rules 1989 amended 2000)
LIST OF PROJECT CATEGORIES REQUIRED TO OBTAIN EC

VII. Physical Infrastructure including Environmental Services

7(a) Air ports
7(b) All ship breaking yards including ship breaking units
7(c) Industrial estates/parks/complexes/areas, export processing zones (EPZs), Special Economic Zones (SEZs), Biotech parks, leather complexes
7(d) Common hazardous waste treatment, storage and disposal facilities (TSDFs)
7(e) Ports, Harbors
7(f) Highways
7(g) Aerial ropeways
7(h) Common Effluent Treatment Plants (CETPs)
7(i) Common Municipal Solid Waste Management Facility (CMSWMF)

VIII. Building/Construction projects/Area Development projects and Townships

8(a) Building and construction projects
8(b) Townships and Area Development projects