



TERMS OF REFERENCE FOR ENVIRONMENTAL IMPACT ASSESSMENT OF INDUSTRIES



TERMS OF REFERENCE FOR ENVIRONMENTAL IMPACT ASSESSMENT OF INDUSTRIES

ACKNOWLEDGEMENT

Development of these Terms of Reference (ToRs) would not have been possible without the commitment of and contributions from different individuals and institutions. A special note of thanks must go to Centre for Science and Environment (CSE), India for the technical support and guidance provided for developing this important tool.

This tool has come at an opportune time, keeping in mind our government's directions with regard to a National Industrial Development Agenda. The Agenda entails establishment of development projects where their sustainability depends on the incorporation of environmental components and on ensuring that there are always mitigation measures to respond to associated environmental challenges. This Agenda would not be sustainable and possible if environmental issues are not considered in the process, which would primarily include a review of Environmental Impact Assessment (EIA) and Environmental Audit (EA) studies for proposed and existing projects.

I and my entire team at NEMC understand, acknowledge and appreciate the need for this tool, and feel privileged to have played a role in developing it. We also appreciate the efforts put in by members of the Tanzania Environmental Expert Association (TEEA) and representatives from other governing institutions for helping us prepare these ToRs.

The support from the Minister of State (Union and Environment) in the Vice President's Office, His Hon Dr Seleman Said Jafo (MP) has been key to the success of this initiative. NEMC is also grateful to the Deputy Minister, His Hon Khamis Hamza Khamis; the Permanent Secretary, Ms Mary N Maganga; and Deputy Permanent Secretaries Dr Switbert Z Mkama and Mr Abdallah Hassan Mitawi for the encouragement extended to us.

We also wish to thank everybody else who, in one way or another, participated and contributed in the development of these ToRs. The developed ToRs serve an important purpose for environmental experts as well as the team involved directly in the review process -- it is our hope that they will be appropriately used.

Thank you

Eng Dr Samuel G Mafwenga
Director General, NEMC

CONTENTS

Abbreviations	6
1. Introduction	7
2. Objective	8
3. Terms of Reference for Industries	9
3.1 General information	9
3.2 Essential maps for EIA of an industrial project	9
3.3 Description of project site and study area	10
3.4 Activities for site preparation	16
3.5 Mitigation and ESMP for socio-economic impacts	21
Annexure: Applicability	22

ABBREVIATIONS

BOD	- Biological Oxygen Demand
COD	- Chemical Oxygen Demand
DM	- Demineralization
EIA	- Environmental Impact Assessment
ESMP	- Environmental and Social Management Plan
NEMC	- National Environmental Management Council
NOC	- No Objection Certificate
PCE	- Pollution Control Equipment
R&R	- Resettlement and Rehabilitation
TDS	- Total Dissolved Solids
TOR	- Terms of Reference
TSS	- Total Suspended Solids
VOC	- Volatile Organic Compounds
ETP	- Effluent Treatment Plant
STP	- Sewage Treatment Plant
BAP	- Biodiversity Action Plan
SAP	- Species Action Plan
HAP	- Habitat Action Plan
IUCN	- International Union for Conservation of Nature

1. INTRODUCTION

In mainland Tanzania, the Environmental Impact Assessment (EIA) process is a planning tool governed by The Environmental Management Act, 2004 which gives National Environment Management Council (NEMC) the mandate to accept applications for environmental clearance, review environmental impact statement(s), recommend projects to the minister for issuance of Environmental Impact Assessment Certificate(s) and undertake monitoring to check compliance with the Environmental and Social Management Plan (ESMP).

Under The recently notified Subsidiary Regulation [Environmental Management (*Environmental Impact Assessment And Audit*) (Amendment) Regulations, 2018] published on 31st August 2018, the NEMC has categorized its projects into four Categories— type ‘A’, type ‘B1’ type ‘B2’ and Special Category.

The projects which fall in type ‘A’ require a mandatory EIA and such projects are likely to have significant adverse environmental impacts. An in-depth study is required to determine the scale, extent and significance of the impacts and identify appropriate mitigation measures. The projects which fall in type ‘B1’ require undergoing a screening process, to decide the requirement of EIA. The projects categorized under ‘B2’ are small scale projects where EIA is not a requirement; an EIA certificate is issued upon submission of an Environmental and Social Management Plan.

For Category A and B1 projects the proponent is required to submit a Terms of Reference (ToR) along with a scoping report to the NEMC, respective line ministries and any other as applicable for scrutiny and approval, as well as to check the sufficiency of mitigation measures.

2. OBJECTIVE

The primary function of scoping also referred to as setting the Terms of Reference of an EIA, is to establish the environmental priorities and to set the boundaries for the study. The objective of the ToR is to make the assessment process concise and focused, and avoid creating a voluminous or data deficient report. The ToR provides the benchmark for data collection and limits the possibility of inefficiency in the EIA process. It also acts as a benchmark to be used by the NEMC to decide whether the Environmental Impact Statement has been compiled after meeting all the requirements or not.

There are various tools that can be used for scoping, such as *questionnaire checklists, network diagrams, comparison with other similar projects, matrix and ad-hoc methods, etc.* The selection of scoping tools largely depends on the size of the project and the existing environmental and social characteristics of the project area.

The ToR given below is a generic one and can be framed as per the relevant project requirements. While framing the ToR, ground realities, background information of the study area (such as population in and around the project site), project-specific peculiarities, applicable laws, rules, guidelines and policies need to be considered to make the ToR relevant and precise. There may be a possibility that some parts of ToR are not applicable for a given project. A site visit is also recommended before framing the ToR; this enhances the scope of the EIA process and makes it more efficient.

3. TERMS OF REFERENCE (TOR) FOR AN INDUSTRIAL PROJECT

The ToR should include the following conditions, details and components:

3.1 GENERAL INFORMATION

1. Executive summary of the project, which summarizes the project characteristics, environmental and social issues, and the proposed mitigation measures.
2. Information about the project proponent and his / her experience with following details
 - Name of the project
 - Name of the applicant
 - Present mailing address including telephone number, fax, and email (if any)
 - Name of the focal person (responsible environmental personnel)
 - Telephone number of the focal person (responsible environmental personnel)
3. The justification for the project
4. Project financial statement, project benefits and the project activity schedule
5. Name of organization / consultant preparing the Environmental Impact Statement, qualifications and experience of experts involved in the Environmental Impact Statement and its preparation
6. List of all regulatory approvals and No Objection Certificate (NOC) required for the project and the status of these approvals
7. A declaration from the consultant stating that the information disclosed in the Environmental Impact Statement is correct

3.2 ESSENTIAL MAPS FOR EIA OF AN INDUSTRIAL PROJECT

1. A map specifying the location of the project
2. A study area map indicating features such as locations of human settlements, locations of other industries or other air and water polluting sources
3. A map indicating number of villages / housing settlements or any other getting affected due to land acquisition, if applicable
4. A map specifying the land use patterns of the project site and study area
5. A map marking the sensitive zones in the study area, such as forests, defence installations, international border (if any), protected area/s, etc.

6. A contour map of the plant site and study area
7. A map clearly delineating the locations of various monitoring stations (ambient air, water, noise and soil)
8. The layout map of the plant showing the production unit, storage of raw materials / products, stacks, wastewater treatment plant, administrative buildings, canteen, proposed green belt, transportation route, roads, parking spaces and infrastructure including all utilities, such as fuel-filling station, power supply, water supply, etc.
9. Diagrammatic sketch and layout of the effluent treatment plant (ETP) and the sewage treatment plant (STP), if any
10. A map indicating the flood ability of the project site and study area, if applicable
11. A map indicating high tide and low tide, if applicable in case project is situated along a river or a coastal belt
12. A layout map showing the solid and hazardous wastes disposal site, if applicable
13. A map showing the wastewater discharge points

Note: Depending upon the type, size and location sensitivity, a competent authority can decide the study area and recommend appropriate scale for Environmental Impact Assessment.

3.3 DESCRIPTION OF PROJECT SITE AND STUDY AREA

A. Information on existing land use pattern of the project area:

1. Describe the total land required for the project including land use pattern of acquired land and the study area (note: study area needs to be defined by the council, it may change from project to project)
2. Description on areas vulnerable to (soil) erosion or areas prone to landslides, wherever applicable
3. If forest land or agricultural lands are likely to be diverted, then provide the information listed in the Table given below. If grazing land is used for setting up a project, information on the cattle pressure on the land needs to be provided.

Table: Information required if forest or agricultural land is being diverted

Agricultural Land	Total Area, in hectares (ha)	Types of crops grown in a year	Number of crops grown in a year	Crop productivity (TSH./ ha)
Forest Land	Total area required (ha)	Type of forest	Actual area to be diverted (ha)	Types of activities on diverted forest land

4. If land acquisition is involved, the report should give the extent of land to be acquired for a project along with name of affected people with the following information:
 - a. Village-wise or settlement-wise list of the affected persons and properties
 - b. The extent and nature of land and immovable property to be acquired, including list of common and government properties, which are affected or likely to be affected
 - c. A list of persons likely to lose their employment or livelihood or likely to be alienated wholly or substantially from their main sources of trade, business or occupation due to land acquisition, if applicable
 - d. List of persons indirectly dependent on the land and / or its resources, who are likely to be alienated wholly or substantially from their main sources of trade, business or occupation due to land acquisition, if applicable
 - e. Socio-economic importance of the site e.g. recreational, any public beach, public access, any agricultural activity; fishing activity, etc
 - f. Resettlement Action Plan, if applicable
5. Seismic characteristic of project area or proposed site close to volcanic area. If the site is falling in seismic zone, as per the seismic zoning map of Tanzania, the foundation design of a project must consider the seismic factor
6. Demonstrate the risk associated with the project based on geo-technical and hydrology of the project area

B. Information on sensitive areas at project site and in the study area, if any:

1. Distance of the project from key installations such as airports, defence installations, highways, wetlands, national parks and sanctuaries, ecologically sensitive biological corridors, archaeological sites, critical watershed areas or any other important installations
2. Discuss, if the project site or study area supports any unique habitats or any endemic, threatened or declining species or species of high economic and/ or ecological value
3. List of flora and fauna in the project area, duly authenticated by a government approved organization or by an independent body such as a university. The findings should be annexed with the report
4. Presence of nesting, breeding, foraging site for resident and transient bird species or bat or locations favoured by migratory birds either in project area or in immediate neighbourhood, if any
5. If the site preparation requires cutting trees, then provide the following information:
 - a. How many trees are proposed to be cut down?
 - b. Plant species and age of trees
 - c. Are they protected / endangered / endemic species? If yes, provide details

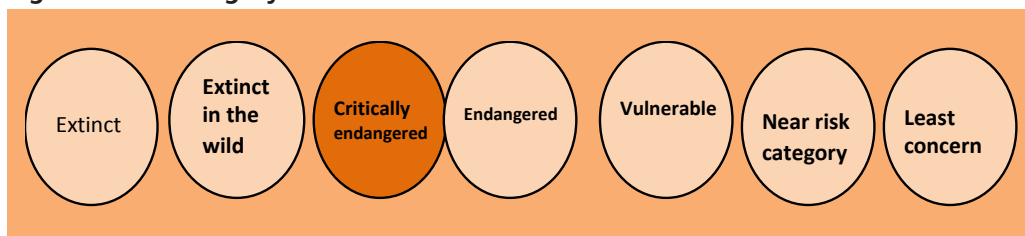
C. Information regarding biodiversity assessment / Risk Category Assessment

While preparing a biodiversity conservation plan, the focus should be on safeguarding biodiversity and the ecosystem as far as practicable. As a general rule, if impacts are irreversible and cannot be compensated by any means, it is better to avoid the site. If impacts are manageable, then minimize the impacts by creating a Biodiversity Action Plan (BAP). Similarly, Conservation Plans incorporate Species Action Plans (SAPs) where the mitigation is targeted for the protection of a specific species and Habitat Action Plans (HAPs), which aim at protection of habitats of rare, critically endangered, endangered and vulnerable species. Some key components that must be provided for reviewing the conservation plan include financial requirements for conservation, responsible authorities and monitoring schedule.

One of the essential components of biodiversity assessment is the identification of the presence of vulnerable, endangered and critically endangered plant and animal species including avian species. The assessment takes place at the project site or in adjoining areas, if either or both are categorized as highest risk category (see Figure: Risk category) as assigned by the International Union for Conservation of Nature (IUCN). There are five quantitative criteria normally used to determine whether a taxon is threatened. They are:

- Populations have declined or will decrease, by greater than 80% over the last 10 years or three generations
- A restricted geographical range
- Small population size of less than 250 individuals and continue to decline at 25% in 3 years or one generation
- Very small or restricted population of less than 50 mature individuals. High probability of extinction in the wild

Figure – Risk category



Source: Zoological Survey of India, Ministry of Environment and Forests, Government of India, 2011

While doing biodiversity assessment—the option for ‘site alternative’ and ‘Preventive Approach’ is the best method to reduce the impact on biodiversity. There are some methods, which can be very useful to assess the likely impact of project at the conceptualization stage. The following table lists these methods.

Approach to Assess the Potential Impact at the Initial Stage

Issues	Significance and method of preliminary assessment
Proximity to park / sanctuary / forest	Closeness to the project site and high abundance of fauna means high impact is anticipated and thus project proponent must do preliminary site investigation to ensure significance of impact
Encroachment of park / sanctuary / forest	Decision can be either ‘Yes’ or ‘No’ based on species richness, species-specific impact, threat to inhabitants and economic value offered by the forest

Issues	Significance and method of preliminary assessment
Location of the project affects the foraging / breeding / nesting / migration routes of animals	Anticipated impact would be high, and preliminary flora and fauna assessment is a prerequisite for site feasibility and thus decision can be taken either 'YES' or 'NO'. Method—Interaction with forest officials, local villagers and reconnaissance survey
Presence of vulnerable, endangered and critically endangered plant and animals species including avian species at the project site or in adjoining areas	Anticipated impact would be high and preliminary assessment is a prerequisite for site feasibility, and thus decision can be either 'Yes' or 'No' Note: Local stakeholders and the forest officials can provide valuable information on species' inventory and provide sound information on environmental and economic importance of species
Proposed project is close to waterholes or to wetlands or / and fish breeding grounds	Set back distance should be maintained to reduce impact due to human interference
Proposed project activities would increase siltation that would affect surrounding biodiversity	Method—By studying the rainfall, site elevation and flow pattern If runoff originates from the site following the direction of biodiversity area, then the impact would be high
Does the project likely affect the fauna of an area, which has economic / medicinal value?	Detailed assessment of flora by a taxonomist is the best method. Moreover, inputs by local stakeholders are vital in identifying the medicinal value of plant species

Source: Centre for Science and Environment, 2013

Guiding parameters for effective assessment

There are some key guiding parameters, which need to be carefully examined while dealing with a sensitive project or when project is proposed in a park / sanctuary / forest. These parameters are as follows:

- In case of a very sensitive area, biodiversity assessment must be comprehensive
- Option for a 'site alternative' in case of areas which have a unique habitat or are populated with endemic, threatened or declining species, or species of high economic and cultural value to society or an ecosystem
- Type of forest and area of forestland diverted for non-forest use
- Biodiversity should be assessed on the basis of parameters mentioned below:
 - **Composition:** What biological units are present and how abundant are they?
 - **Structure (or pattern):** How biological units are organized in time and space?
 - **Function:** The role different biological units play in maintaining natural processes and dynamics
 - Number of trees to be cut down with age and name (both scientific and local)
- Details of flora, fauna and avian fauna present in the area, their abundance and the season in which abundance is high. Also, for fauna assessment the following details should be furnished:
 - Types of animals, birds and bird activities across the project and surrounding areas
 - Identify animal species listed as threatened or migratory or any specific species coming in a specific season
 - Record the location and extent of animals and bird habitat with reference to significance to conservation
 - Identification of resident and transient animal and bird species
 - Animals and birds utilization status—determine all the species present across different seasons and how they utilize the site

D. In case the site is in close proximity to the coastline then the following need to be considered

1. Wherever applicable, description of the shore types (sandy, muddy, rocky, cliffs, mixed, calcareous lime stone shore), length of the shoreline, beach frontage and their characteristics, landform, topography, elevation, magnitude of slope, slope stability, erosion, escarpments and landslide risks supplemented by interval contour map;
2. Wherever applicable, description of the hydrographic conditions to include wave regime (patterns, height, frequency and direction), distance from project site, currents direction and speed, tidal water levels including the probability of extreme conditions and potential for waves and surges;
3. Vulnerability of the site to natural hazard, sea surges or climate change impacts like sea level rise, inundation or flooding, if applicable.

E. The manufacturing process and resource consumption

1. Details of the manufacturing process with flow charts, the technology to be used, installed capacity, and the products to be manufactured and details of generation of by-products, if any. The Environmental Impact Statement should justify the selection of the technology with reference to resource conservation (energy and water) and pollution potential. The project proponent should provide certification of existing technologies, wherever applicable
2. List of raw materials to be used in the manufacturing process, their daily consumption, sourcing, and methods of storage

Table: Raw materials

List of construction materials	Quantity (tones / month)		Source of material	Mode of transportation and storage site
	Peak	Average		
Cement				
Stone				
Steel				
Sand				
Water				
Bitumen				
Fuel				
Others (Please specify)				

3. Provide a schedule for each phase of construction and operation for the entire project and ancillary facilities. Include the environmental issues associated with each ancillary activity, wherever possible:
 - a) Mobilization
 - b) Land clearing
 - c) Construction of road
 - d) Blasting, if applicable

- e) Borrow and spoil disposal
 - f) Excavation and sub-grade preparation
 - g) Foundation preparation
 - h) Concrete work
 - i) Construction and installation of each project facility
 - j) Stabilization of disturbed areas
4. List of hazardous chemicals, toxic or inflammable substances (including carcinogenic materials) to be used in the process, their quantities and storage methods. The material safety data sheet of each individual hazardous chemical / solvent should be annexed with Environmental Impact Statement. Justification for use of any known carcinogenic or toxic chemicals /solvents in the process. If substitution / alternatives are not possible, then the detailed mitigation plans to reduce exposure risks
 5. Mass balance to be provided, along with the quantitative details of inputs and potential wastes (liquid, solid and gaseous) to be generated, and their characteristics and quantities, if applicable
 6. Description of utilities and services, their capacities, raw material requirement and pollution potential
 7. Steam balance, including the quantity and type of fuel used, if applicable
 8. Details of energy sourcing and requirement: If a captive power plant is proposed, the Environmental Impact Statement should provide the following details: Installed capacity, daily or annual fuel consumption, pollution potential and its management plan
 9. If a Demineralization (DM) plant is used, then details of quantity of DM water produced, the chemical requirement, its handling and management, quantity and characteristics of DM plant wastewater and the treatment method for the same, if applicable
 10. Details of water balance of the entire plant: This will include sourcing of water, quantities sourced, and daily water consumption in kilolitres per day (including a break-up under heads such as process, domestic, cooling and others), quantity of effluents generated, and quantity of wastewater recycled/reused and discharged.

Table: Water requirement (m³/day)

Purpose	Average demand	Peak demand
A. PROJECT SITE 1. Cooling Towers 2. Boilers 3. Steam Generation 4. Dust suppression 5. Drinking 6. Green Belt 7. Fire Service 8. Community supply 9. Others (specify)		
B. TOWNSHIP (if applicable) 1. Green Belt 2. Domestic 3. Other (specify)		
TOTAL		

- Details of the workforce (administrative, production and environment and safety) to be employed in the project and the factory operating hours

Table: Workers employed by the project

	Numbers	Nationality
Project construction period		
Project operation stage		

- Fuel, oil and electricity requirements

3.4 ACTIVITIES FOR SITE PREPARATION

A. Information on existing land use patterns in the study area

- Area acquired for the proposed project and the land use patterns at the project site and study area, with explanatory notes
- Justification for the site selection, with explanatory notes
- Land ownership patterns of the acquired land
- Details of the topography of the study area
- Details of water bodies such as lakes, streams, natural drains and rivers in the study area and their distances from the project site
- The boundaries of the nearest human settlement and its distance from the project site
- The flood plain boundary and flood ability of the area: The project proponents should prepare flood hazard zonation mapping (scale 1:5000 to 1:10,000) scale indicating the peak and lean river discharge as well as flood occurrence frequency, if applicable

B. Information on sensitive receptors at project site and in the study area, if any:

1. Distance of forest areas, wildlife sanctuaries, national wildlife corridor, biological corridors, archaeological sites, critical water-shed areas, settlements, important installations and sites of religious importance and others from the site
2. Discuss if the project site or adjoining areas (such as the buffer zone) support any unique habitat, endemic, threatened or declining species or species of high economic / ecological value
3. List of flora and fauna in the project area, duly authenticated by a government approved organization or independent body such as a university. The findings should be annexed with the report
4. Presence of any wildlife corridors or locations favored by migratory birds, animals at the project site or in the buffer zone, if any

C. Baseline data

1. Data on ambient air quality: This should include parameters such as PM10 and gaseous pollutants, and site-specific information on existing meteorological conditions such as temperature, humidity, rainfall and wind speed and direction
2. Details of forest land to be diverted (if applicable)
3. Detailed information on existing natural drainage / run-off patterns at the project site, wherever applicable
4. Ambient noise data at the project site, including the processes / operations that are likely to generate noise including potential areas likely to be affected by noise as this is crucial from the occupational health point of view
5. Information on estimated quantity and quality of effluents to be generated – quality of both treated and untreated effluents: The data should include information for parameters like Biological Oxygen Demand (BOD), Chemical Oxygen Demand (COD), Total Suspended Solids (TSS), Total Dissolved Solids (TDS), heavy metals and toxic chemicals (if applicable)
6. In case treated effluents are disposed off in water bodies such as rivers or natural drains, then the water characteristics of the receiving water bodies, including the lean period flows - details of downstream competitive users (including quantity) should also be provided, if applicable
7. If treated effluent is discharged in the river, the lists of aquatic flora and fauna present in the river
8. Information on probable sources of stack emissions (including power plant, if applicable) – the number of stacks, their diameter, exit temperature and flow rates, and the proposed pollutant concentration from the stacks

9. Information on potential sources of air pollution, including fugitive emissions from processes, storage sites and other sources that may generate fugitive dust
10. Details of the quantity of solid / hazardous wastes likely to be generated from utilities, processes and pollution control facilities - in case of hazardous wastes, information is needed on waste characterization
11. Details of the total length of the conveyor belt, if applicable, including the number of transfer points and dust suppression measures at the transfer points
12. Characteristics of topsoil, its thickness and estimates of total quantity of topsoil to be produced during land clearing; the Environmental Impact Statement should discuss the management plan for topsoil conservation and utilization in the ESMP.
13. A detailed survey report and list of biodiversity (flora and fauna) in the study area, including at the project site, if applicable
14. Surface and sub-surface water characteristics in the study area
15. Baseline data on the health status of local communities and common diseases prevailing in the area, applicable when a project is proposed in an air-polluted area, if applicable
16. Studies on amount of CO₂ emissions per tonne of product and future plans to reduce the emissions, applicable for CO₂ generating industries
17. Traffic: Mode of transportation of raw materials and products
18. Details of existing socio-economic status of the study area such as population density, human population close to the plant, economic profiles, literacy rates, common diseases, and infrastructure facilities available in the study area (such as conditions of roads, hospitals, educational institutes, water supply and sanitation) including displacement due land acquisition, if applicable

D. Impact assessment

1. Impacts of the construction phase of the project on ambient air, water, existing infrastructure and social structure
2. Impacts of point source and fugitive emissions on the ambient air quality, workers and local community
3. Impacts of the project on water availability and quality of ground and surface water resources – if the project discharges its effluents into surface water bodies such as rivers, then the impact of this discharge on the quality of the receiving medium and its aquatic life
4. Impacts of noise on workers and the local community
5. Impact of solid and hazardous wastes on land and water
6. Impact of mode of transportation of raw materials and products on existing traffic scenario and infrastructure

7. Impact of project on biodiversity: terrestrial and aquatic ecology
8. Socio-economic impacts of the project

E. Risk assessment

1. Identification of risk-prone areas based on potential risks and mitigation measures for the same
2. Identification of processes / operations that have the potential to impact onsite / offsite emergency, if applicable
3. A plan for emergency preparedness and a budget for ensuring safety and occupational health of workers and local community

F. Mitigation and Environment and Social Management Plan (ESMP)

The ESMP should discuss the mitigation measures to be taken against each impact, the timeline for completion, the responsible departments for implementation, the budget, post-monitoring provisions and the process of reporting to the concerned regulatory authority.

G. Pollution Control

1. Proposals for environmental management during initial stage of project construction, e.g. erosion and sediment control systems, noise and dust mitigation strategies, etc.
2. Details of water pollution control, including justification of selection of treatment schemes, design criteria, size of treatment units and final discharge characteristics; tentative costs of the treatment plant, recurring expenditures and details of reuse of treated wastewater and efficiency of the wastewater treatment plant (the treated wastewater should conform to prescribed national standards). Project proponent should also explore the possibility of zero discharge
3. Information on air pollution control technology for reducing point source emissions, including justification of the selection of pollution control equipment (PCE), technical specifications of the PCE, its efficiency, tentative costs, recurring expenditures including the height of the stacks with justification. Information on air pollution control technology for reducing point source emissions including height of the stacks. Also indicate the measures adopted for controlling fugitive emissions (Volatile Organic Compounds-VOCs). The report should also discuss how efficient these measures are and the budget set aside
4. Monitoring and establishment of lab facility for air, water, and noise study

H. Storage and transportation of raw materials and products

1. Detailed management plan to reduce fugitive emissions during raw material and product handling, loading / unloading operations, transportation and storage - this should be provided along with proper timelines and budgets. The project should also discuss the levels of mechanization incorporated in raw material and product handling, to ensure fugitive emissions remain well within the permissible limit

2. Provisions for covered storage yards for raw materials and products
3. Provisions for covered conveyor, bucket elevators or pneumatic transportation, wherever applicable
4. At the layout stage, care should be taken to minimize the number of transfer points, if applicable. The ESMP should also discuss the provision for dust suppression at the transfer points
5. Detailed management plans to improve the road network or existing roads to meet the projected traffic densities
6. Road safety measures planned to reduce road accidents

I. Waste disposal and utilization

1. Detailed management plan for solid and hazardous wastes from the process, from wastewater treatment plant, including budgets and schedules of completion; information on design, including leachate collection and treatment systems, in case a hazardous waste disposal facility is proposed at the project site, if applicable
2. Technical description of the incinerator, characteristics of wastes to be incinerated, type of pollution control equipment and disposal methods of the ash residue, if applicable
3. Illustration of the solvent recovery mechanism (if applicable), including recovery efficiency with respect to solvent consumption

J. Other

1. Details of mitigation measures for noise control, including noise abatement from equipments, operations and traffic
2. Details of the plan for green belt development, including a diagrammatic sketch of the layout of the plant showing the proposed green belt with the tree density (i.e. number of trees / hectare)
3. Details of energy and water conservation measures, including budgets and schedules of completion
4. A detailed mitigation plan for biodiversity protection and conservation (if the project is likely to impact biodiversity)
5. Mitigation measures to prevent land and water contamination from the chemical storage site
6. Details of the plant storm water collection and treatment system - mitigation measures for storm water is crucial, especially if there is a river, agricultural land or a sensitive area adjoining the manufacturing plant
7. Details of the parking spaces, and provision for canteen and rest rooms for workers and drivers

8. The organizational set-up and requirement of manpower for environmental, health and safety management, including clear responsibilities

K. Risk

1. A flood management plan to protect the plant and surrounding areas, if applicable
2. Best practices such as colour coding and labeling cleanliness to ensure safety and environmental compliance
3. If any known carcinogenic chemicals / solvents are used and their substitution is not possible, then a detailed mitigation plans to minimize exposure risks
4. Documentation of impacts that cannot be mitigated, with proper reasons
5. Frequency of training and awareness programmes on environment and safety, and the annual budgets allocated for them

3.5 MITIGATION AND ESMP FOR SOCIO-ECONOMIC IMPACTS

1. Preparation of a resettlement and rehabilitation plan (R&R), if displacement is involved: The plan should include details of the compensation provided, including land-for-land compensation, employment or money; provisions at the resettlement colony (such as basic amenities including housing, educational facilities, infrastructure and alternate livelihood potential); a clear timeline for implementation; responsibility; budgets; grievance mechanism, etc.
2. Public consultation issues raised and commitments made by the project proponent on the same should be included separately in Environmental Impact Statement in the form of tabular charts
3. The R&R plan should assess and take into consideration the impact of displacement on women and vulnerable communities such as landless labourers, tribal, etc., and prepare a detailed management plan to improve their status
4. A detailed compensation package for the community that is likely to lose its livelihood
5. Detailed ESMP for improving and enhancing socio-economic conditions in and around the project site and the budgetary provision
6. A water assistance plan for the local community, in case it is affected by pollution or scarcity of water resources due to the plant's operations, if applicable

ANNEXURE

APPLICABILITY

The subsidiary regulations, The Environmental Management (Environmental Impact Assessment and Audit) (Amendment) Regulations, 2018 have provided categories 'A' and 'BI', under which it is mandatory for project proponents to submit a Scoping report and ToR. These ToR are applicable for projects as mentioned in table below. [Note - the following table does not list all projects categorized under 'A' and 'BI' as given in the Regulations. Please refer the First Schedule of the Regulations for a complete list of projects under the aforesaid categories]

Categorization of project	Item number of the First Schedule of 2018 Regulations	Type of projects
'A' (EIA is mandatory)	ITEM NO. 7. ENERGY	(a) transmission of Electricity; (b) production of Natural Gas; (c) thermal Power development; capacity \geq 50 MW; (d) hydro-electric power development; capacity \geq 50 MW; (e) nuclear power development; and (f) development of other large scale renewable sources of energy (i) off-shore wind projects; (ii) geothermal projects
	ITEM NO. 8. PETROLEUM	(a) oil & gas field exploration and development; (b) construction of offshore and onshore pipelines; (c) construction of oil and gas separation, processing, handling and storage facilities; (d) construction of oil refineries; and (e) Transportation of petroleum products through pipelines
	ITEM NO. 9. TRANSPORT AND INFRASTRUCTURE	(a) construction and/or expansion of trunk roads; (b) construction and/or expansion of airports and airstrips and their ancillary facilities; (c) construction and/or expansion of existing railway lines; and (d) construction and/or expansion of ports and harbors
	ITEM NO. 10. FOOD & BEVERAGE INDUSTRIES	(a) breweries and distilleries (molasses based distilleries); (b) tobacco processing; and (c) sugar factories

Categorization of project	Item number of the First Schedule of 2018 Regulations	Type of projects
	ITEM NO. 11. TEXTILE INDUSTRY	Cotton and synthetic fibers; integrated textile mills (knitting, weaving, dyeing and fabric production)
	ITEM NO. 12. LEATHER INDUSTRY	Tanneries; all integrated plants
	ITEM NO. 13. WOOD, PULP & PAPER INDUSTRY	Pulp and paper manufacturing (except waste paper)
	ITEM NO. 14. BUILDING & CIVIL ENGINEERING INDUSTRY	(a) industrial parks and housing estate; and (b) developments on beach fronts
	ITEM NO. 15. CHEMICAL INDUSTRIES	(a) manufacture and storage of pesticide or other hazardous and / or toxic chemicals; (b) manufacture of pharmaceutical products (Technical); (c) production of paints varnishes; (d) soap and detergent plants; and (e) manufacture of fertilizers
	ITEM NO. 16. EXTRACTIVE INDUSTRY	(a) extraction and purification of natural gas (if this is being done within the refinery along with primary and secondary products); and (b) mining (Large and medium scale mines)
	ITEM NO. 17. NON-METALLIC INDUSTRY (PRODUCTS)	Cement Manufacturing
	ITEM NO. 18. METAL AND ENGINEERING INDUSTRY	(a) manufacture of non - ferrous products (b) manufacturing of iron and steel
	ITEM NO. 19. ELECTRICAL AND ELECTRONICS INDUSTRIES	Battery manufacturing and recycling
	ITEM NO. 20. WASTE TREATMENT AND DISPOSAL	(a) Toxic and Hazardous waste: (i) construction of Incineration plants; (ii) construction of recovery plant; (iii) construction of waste water treatment plant; (iv) construction of secure landfills facility; and (v) construction of storage (temporary) facility (b) municipal solid waste: (i) construction of Municipal Solid Waste landfill facility (c) municipal sewage: (i) construction of sewage sewer system

Categorization of project	Item number of the First Schedule of 2018 Regulations	Type of projects
'B1' (Screening to decide requirement of EIA)	ITEM NO. 6. ENERGY	(a) distribution of Electricity projects; (b) storage of natural gas facilities; (c) thermal Power development (Capacity < 50 MW); (d) hydro-electric power development (Capacity <50 MW); (e) development of other large scale renewable sources of energy: (i) solar projects; (ii) on – shore wind projects; (f) biomass projects
	ITEM NO. 7. PETROLEUM	(a) construction or expansion of product depots for the storage of petrol, gas, diesel, tar and other products within commercial, industrial or residential areas; and (b) construction of filling stations or service stations
	ITEM NO. 9. FOOD AND BEVERAGE INDUSTRIES	(a) manufacture of vegetable and animal oils and fats; (b) oil refinery and ginneries; (c) manufacture of dairy products; (d) breweries and distilleries (grain based distilleries and breweries); (e) fish meal factories; (f) slaughter houses / abattoirs (when number of animals slaughtered are >10 per day; (g) tobacco curing; and (i) other agro-processing industries
	ITEM NO. 10. TEXTILE INDUSTRY	(a) cotton & Synthetic fibers (dyeing production units); and (b) ginneries
	ITEM NO. 11. LEATHER INDUSTRY	(a) tanneries (tanning and other activities); (b) bark for tanning purposes (commercial); and (c) dressing and cloth factories
	ITEM NO. 12. WOOD, PULP & PAPER INDUSTRY	Manufacture of veneer, plywood, fiber board, particle-board, sand board cellulose and waste paper
	ITEM NO. 14. EXTRACTIVE INDUSTRY	(a) other deep drilling - bore-holes and wells; and (b) mining (small scale mines)
	ITEM NO. 15. NON-METALLIC INDUSTRY (PRODUCTS)	Manufacturing of: (a) glass, Glass-fiber, Glass-wool; (b) plastics materials; (c) tiles and ceramics; and (d) lime manufacturing

Categorization of project	Item number of the First Schedule of 2018 Regulations	Type of projects
	ITEM NO. 16. METAL AND ENGINEERING INDUSTRY	(a) manufacture and assembly of motorized and non-motorized transport facilities such as body building; (b) boiler - making and manufacture of reservoirs, tanks and other sheet containers; (c) foundry and Forging; (d) manufacture of non - ferrous products (All secondary processing industry); and (e) electroplating
	ITEM NO. 17. ELECTRICAL AND ELECTRONICS INDUSTRIES	Electrical and electronic equipment manufacturing and assembly
	ITEM NO. 18. WASTE TREATMENT AND DISPOSAL	(a) municipal solid waste (i) construction of incineration plant; and (ii) construction of recovery/re-cycling plant (b) municipal sewage

Source: *The Environmental Management (Environmental Impact Assessment and Audit) (Amendment) Regulations, 2018*

