

## **CHAPTER SIX**

### **MITIGATION, AMELIORATION AND COMPENSATION MEASURES**

#### **6.1 INTRODUCTION**

The measures that IEFCL intend to take to reduce (or eliminate) negative impact and promote positive Environmental and Social impacts of the proposed IEFCL-Train2 Project are presented in this chapter, considering also Health and Safety topics. In these measures, emphases are placed on those negative impacts rated as significant as described below:

These traffic and road safety deterioration are consequences of additional workforce which will use the road to the company daily, increased subsidiary investments like restaurants and hotels, upsurge of people residing in the host communities and additional vendors and heavy duty vehicles that are involved in the movement of the products of the company to either the wharf or to other parts of the country. There is also a concern about social friction among the various ethnic groups living around the host communities. It should be noted that people from other parts of the country also would migrate into Eleme LG area because of booming industrial activities in the area and consequently also contribute to security of the area. The people of the host communities also have concern that their social identities, value and traditional recreational activities may affect due to the influx of persons into their communities. The people further expressed the desire that the coming of new projects in the area will afford the youths some vocational skills and empowerment.

These actions are aimed at reducing these impacts to as low as reasonably possible. The residual impacts that could arise despite these measures were also noted.

#### **MITIGATION MEASURES**

The associated and potential impacts on various components of the biophysical, health and social environments by the proposed IEFCL- Train2 Fertilizer Project is presented in Chapter Five. The negative impacts have been identified and ranked accordingly.

To preserve the environment and ensure sustainability of this project, a number of steps are suggested to be taken to mitigate the significant, medium and high ranking negative

impacts identified as a result of the proposed development, as well as enhance those impacts identified as positive.

The mitigation measures proposed for the predicted impacts took cognizance of the following:

- Performance Standards on Social and Environmental Sustainability;
- World Bank Group (WBG) General EHS Guidelines;
- WBG Industry Sector Guidelines;
- Best Available Technology for sustainable development;
- Feasibility of application of the measures in Nigeria;
- Concerns and views of stakeholders during extensive consultations conducted during the study, and
- The residual effects that arise despite the mitigation measures have also been discussed for effective mitigation to a low level.
- Environmental laws at national, regional and international levels;

Other Factors considered for determining implementation of measures are:

- Avoiding the impacts altogether by not taking a certain action or parts of an action;
- Minimizing impacts by limiting the degree or magnitude of the action and its Implementation;
- Rectifying the impact by repairing, rehabilitating or restoring the affected Environment;
- Compensating for the impact by replacing or providing substitute resources.
- Feasibility;
- Ease of implementation;
- Local suitability;
- Institutional requirements;
- Training requirements;
- Monitoring requirements;
- Cost (capital and operating);
- Cost-effectiveness.

The Required General and Specific measures, includes:

- Pre-construction;
- Site Preparation and Construction;
- Commissioning and Start-up;
- Operation; and
- Decommissioning and Abandonment.

The measures are categorized by relevant impact category, potential impact, interested project phase and related nature (mitigation or compensation measures).

The measures that IEFCL commits to implement for the proposed IEFCL-Train2 Fertilizer project activities likely to determine environmental, socio-economical and/or health impacts are detailed in Table 6.1.

**Table 6.1: Impact mitigation measure**

Project Phase (C, O, D) <sup>1</sup>	Project Activity	Description of Impact	Significance Rating Before Mitigation	Action	Type of measure (MI, CO) <sup>2</sup>	Significance Rating After Mitigation (Residual Impact Rating)
<b>C+O+D</b>	Recruitment for construction, operation and decommissioning phases	Inter and intra communities' conflicts	Medium	<ul style="list-style-type: none"> <li>According to Rivers State Govt. Employment Policies, IEFCL arrangement will ensure that all host communities are represented in the employment of locals during pre-construction, construction and operation activities to avert any conflict that could arise from perceptions of unfairness as per the Hiring Plan, to be ready prior beginning construction</li> <li>IEFCL will ensure the monitoring of host communities development to identify in good time, possible causes of conflict</li> <li>IEFCL will adopt a Social Management System to avoid possible inter and intra communities' conflicts which will consider recruitment aspects</li> </ul>	MI	Low

<sup>1</sup>C= Construction

O = Operation

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**D = Decommissioning**

**<sup>2</sup>MI= Mitigation**

**CO= Compensation**

Project Phase (C, O, D) <sup>1</sup>	Project Activity	Description of Impact	Significance Rating Before Mitigation	Action	Type of measure (MI, CO) <sup>2</sup>	Significance Rating After Mitigation (Residual Impact Rating)
C+O+D	Recruitment for construction, operation and decommissioning phases	Socio-cultural conflicts between the construction team and members of the host communities	Medium	<ul style="list-style-type: none"> <li>IEFCL will adopt a Social Management System to avoid possible socio-cultural conflicts between the construction team and members of the host communities.</li> <li>IEFCL will hold regular meetings with the representatives of the host communities as enunciated in the Stakeholder Engagement Plan.</li> </ul>	MI	Low
				<ul style="list-style-type: none"> <li>IEFCL will abide by all:               <ul style="list-style-type: none"> <li>Building renovation of educational/health facilities;</li> <li>Access to micro credit system and merit scholarships to some deserving members of the communities.</li> </ul> </li> </ul> <p>For more details, see the Stakeholders Management Plan in Appendix 7.2.</p>	CO	

<p><b>C+O+D</b></p>	<p>Recruitment for construction, operation and decommissioning phases</p>	<p>Influx of workers into the host communities (including possible increase in diseases/ mortality)</p>	<p>Medium</p>	<ul style="list-style-type: none"> <li>• Health awareness lectures shall be given to workers on the mode of transmission of STIs (including HIV/AIDS)</li> <li>• Provision of regular pest control and insecticide in residential and office area inside the complex</li> <li>• IEFCL will support pre-determined health check-up programme in the communities to, in particular, identify likelihood of outbursts of communicable diseases and determine mitigation/control programs and follow-up their progress as per the Monitoring Program (see Chapter Seven).</li> <li>• Awareness campaign will be carried out to enlighten the communities/field workers on the common communicable diseases and the health implications of drug and alcohol abuse, unprotected sex, prostitution, as well as others such as malaria, tuberculosis etc., and the need to sustain cultural values</li> <li>•</li> </ul>	<p>MI</p>	<p>Low</p>
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Project Phase (C, O, D) <sup>1</sup>	Project Activity	Description of Impact	Significance Rating Before Mitigation	Action	Type of measure (MI, CO) <sup>2</sup>	Significance Rating After Mitigation (Residual Impact Rating)
<b>C+O+D</b>	Recruitment for construction, operation and decommissioning phases	Influx of workers into the host communities (including possible increase in diseases/mortality)	Medium	<ul style="list-style-type: none"> <li>• IEFCL will make adequate accommodation arrangement for expatriates prior to mobilization of workforce to reduce pressure on local housing.</li> <li>• All other personnel employed from communities have their own accommodation. Conveyance fares shall be paid by the contractor for pick up and drop for all workmen from their accommodation.</li> <li>• IEFCL to ensure that good, and sufficient water supply on the plant site will be maintained for workers to avoid Waterborne / water-related and water-based diseases.</li> </ul>	MI	Low

Project Phase (C, O, D) <sup>1</sup>	Project Activity	Description of Impact	Significance Rating Before Mitigation	Action	Type of measure (MI, CO) <sup>2</sup>	Significance Rating After Mitigation (Residual Impact Rating)
C+O+D	Recruitment for construction, operation and decommissioning phases	Influx of workers into the host communities (including possible increase in diseases/mortality)	Medium	<ul style="list-style-type: none"> <li>In accordance to the Monitoring Program, IEFCL will yearly verify the health status of the host communities, to identify possible actions to be taken for their safeguard in relation to the expected influx of workers as stated in the Influx Management Plan</li> </ul>	MI	Low
				<ul style="list-style-type: none"> <li>IEFCL will assist the activities of the state action committee on STIs/HIV/AIDS and other communicable diseases (i.e. malaria, tuberculosis etc.) within the local communities</li> <li>If Authorities will take initiatives for provision of potable water to host communities, IEFCL will support projects for the provision of potable water to host communities</li> </ul>	CO	

Project Phase (C, O, D) <sup>1</sup>	Project Activity	Description of Impact	Significance Rating Before Mitigation	Action	Type of measure (MI, CO) <sup>2</sup>	Significance Rating After Mitigation (Residual Impact Rating)
		Increased cash flow and stimulation of local economies within the host communities	Medium	<ul style="list-style-type: none"> <li>IEFCL will carry out enlightenment campaigns to encourage positive influences on cultural values and healthy lifestyles (e.g. breast feeding habits, alcohol and drug use, exercise, high moral values with regard to sexuality, etc.) and discourage adverse influences (e.g. prostitution, drug abuse, alcoholism etc.)</li> </ul>	CO	Medium/High <sup>3</sup>
<b>C+O+D</b>	Recruitment for construction, operation and decommissioning phases	Localized economic benefits from material supplies by local contractors (C+D) and Induced secondary industrial development (O)	Medium	<ul style="list-style-type: none"> <li>IEFCL will established Assisted Programs and in accordance to the Monitoring Program, it will verify yearly the status of Assisted Projects in order to verify their effectiveness and to identify possible actions to be taken aimed at obtaining an enduring improvement in the existing living conditions inside the host communities</li> </ul>	MI	Medium/High <sup>3</sup>

<sup>3</sup> Positive Impact

Project Phase (C, O, D) <sup>1</sup>	Project Activity	Description of Impact	Significance Rating Before Mitigation	Action	Type of measure (MI, CO) <sup>2</sup>	Significance Rating After Mitigation (Residual Impact Rating)
			Medium	<ul style="list-style-type: none"> <li>• IEFCL will support skill development programs</li> <li>• IEFCL will support cooperatives and micro-credit schemes (directed in particular to women)</li> </ul>	CO	

<p><b>C+O+D</b></p>	<p>All construction, operation and decommissioning phases</p>	<p>Increase in solid/liquid waste production, dust, noise and vibration effects</p>	<p>Medium</p>	<ul style="list-style-type: none"> <li>• IEFCL will train its personnel by an Environmental Capacity Building Program for minimizing the environmental impact and risks</li> <li>• IEFCL will install appropriate air pollution control devices as indicated in Section 3.3.5.1 &amp; 3.3.5.2 of Chapter 3.0 and in accordance to the Monitoring Program, it will periodically check the initiative in compliance with air quality/noise standards in order to implement dedicated actions if necessary</li> <li>• IEFCL will implement effective waste management practices as indicated in Section 4.9 and in accordance to the Monitoring Program, it will compile annual report on waste production in order to implement dedicated actions if necessary</li> <li>• IEFCL will adequately treat its wastewater as per agreed requirements and indicated in Section 3.3.3.6.1 and in accordance to the Monitoring Program, it will verify the characteristics of water discharges</li> </ul>	<p>MI</p>	<p>Low</p>
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<b>Project Phase (C, O, D)<sup>1</sup></b>	<b>Project Activity</b>	<b>Description of Impact</b>	<b>Significance Rating Before Mitigation</b>	<b>Action</b>	<b>Type of measure (MI, CO)<sup>2</sup></b>	<b>Significance Rating After Mitigation (Residual Impact Rating)</b>
				and the quality of receiving water body (water and hydrobiology/ sediment quality) in order to implement dedicated actions if necessary		

Project Phase (C, O, D) <sup>1</sup>	Project Activity	Description of Impact	Significance Rating Before Mitigation	Action	Type of measure (MI, CO) <sup>2</sup>	Significance Rating After Mitigation (Residual Impact Rating)
C+O+D	All construction, operation and decommissioning phases	Increase in solid/liquid waste production, dust, noise and vibration effects	Medium	<ul style="list-style-type: none"> <li>In the event that either construction or decommission site activity run into dry season, water will be sprayed on onsite to reduce dust level.</li> <li>IEFCL will alert communities in advance of such activities that are likely to increase noise in the very nearby residential houses</li> <li>IEFCL will ensure that demobilization activities are according to international best practice.</li> </ul>	MI	Low

Project Phase (C, O, D) <sup>1</sup>	Project Activity	Description of Impact	Significance Rating Before Mitigation	Action	Type of measure (MI, CO) <sup>2</sup>	Significance Rating After Mitigation (Residual Impact Rating)
<b>C+O+D</b>	All construction, operation and decommissioning phases	Risk of spills of hazardous materials	Medium	<ul style="list-style-type: none"> <li>IEFCL will ensure that a controlled fuelling, maintenance and servicing protocol presented in Section/Appendix xxxxx for construction machinery at worksite is established and followed to minimise leaks and spills</li> <li>IEFCL will ensure that all maintenance and repair of equipment and vehicles are done in a secure location with clean-up materials (e.g. drip pans, containers, absorbent materials etc.) readily available</li> <li>IEFCL will ensure integrating prevention and control measures set in a General Hazardous Materials Management program (Appendix xxxx)</li> <li>In case of environmental contamination IEFCL will ensure that a planned risk management approach will be followed</li> </ul>	MI	Low

Project Phase (C, O, D) <sup>1</sup>	Project Activity	Description of Impact	Significance Rating Before Mitigation	Action	Type of measure (MI, CO) <sup>2</sup>	Significance Rating After Mitigation (Residual Impact Rating)
<b>C+O+D</b>	All construction, operation and decommissioning phases	Risk of spills of hazardous materials	Medium	<ul style="list-style-type: none"> <li>IEFCL will ensure a thorough characterization of soil after site cleaning, to detect potential historical releases of hazardous material<sup>4</sup></li> <li>IEFCL will train its personnel by an Environmental Capacity Building Program for minimizing the environmental impact and risks</li> <li>In accordance to the Monitoring Program IEFCL will verify the status of ground water quality in order to adopt, if necessary, dedicated actions aimed at minimizing the risk of contamination of ground water from spills of hazardous materials</li> </ul>	MI	Low

<sup>4</sup>For decommissioning phase only

Project Phase (C, O, D) <sup>1</sup>	Project Activity	Description of Impact	Significance Rating Before Mitigation	Action	Type of measure (MI, CO) <sup>2</sup>	Significance Rating After Mitigation (Residual Impact Rating)
<b>C+O+D</b>	All construction, operation and decommissioning phases	Risk of spills of hazardous materials	Medium	<ul style="list-style-type: none"> <li>IEFCL will implement a Risk management Plan (Appendix xxxxx) for Contaminated lands in order to identify, if necessary, dedicated actions aimed at minimizing the risk of land contamination caused by accidental spills of hazardous materials</li> <li>IEFCL will implement a Hazardous Materials Management Plan to minimize the risk derived from spills of hazardous materials</li> </ul>	MI	Low

Project Phase (C, O, D) <sup>1</sup>	Project Activity	Description of Impact	Significance Rating Before Mitigation	Action	Type of measure (MI, CO) <sup>2</sup>	Significance Rating After Mitigation (Residual Impact Rating)
C+O+D	All construction, operation and decommissioning phases	Potential increase of workplace accidents/diseases	High	<ul style="list-style-type: none"> <li>IEFCL will ensure there are adequately trained numbers of first aiders at each site;</li> <li>IEFCL will ensure that safety workshops to identify, evaluate and recommend contingency plans for all security risks are regularly organized</li> <li>IEFCL will implement an Occupational Health and Safety Management Plan (including Hazardous Materials Risks Management Plan) to minimize the risk of potential increase of workplace accidents/diseases</li> </ul>	MI	Medium

Project Phase (C, O, D) <sup>1</sup>	Project Activity	Description of Impact	Significance Rating Before Mitigation	Action	Type of measure (MI, CO) <sup>2</sup>	Significance Rating After Mitigation (Residual Impact Rating)
C+O+D	All construction, operation and decommissioning phases	Fire & Explosion during construction	High	<ul style="list-style-type: none"> <li>A dedicated site emergency response plan shall be prepared by the contractor to mitigate such scenarios. PI refer Section 4.5 of Appendix 7.6, Occupational HSE Plan</li> <li>A QRA shall be prepared to address the design safety features during the construction. This QRA shall take into account of existing operational IEPL and IEFCL Train-1 plants and factor in the IEFCL Train-2 risk scenarios. Existing QRA has been attached as Annexure 15 to ESIA document in Safety Case (Part of Annexure 4).</li> <li>The current operational Onsite Emergency Plan (ONSEMP) for IEPL &amp; IEFCL addresses risk scenarios for operational aspects. This is attached as Annexure 18 as part of Safety Case (Annexure 4 attachment).</li> </ul>	MI	Low

<p><b>C+O+D</b></p>	<p>All construction, operation and decommissioning phases</p>	<p>Potential increase of workplace accidents/ diseases</p>	<p>Medium</p>	<ul style="list-style-type: none"> <li>• This ONSEMP shall be updated to include the risk scenarios for IEFCL-Train-2 after project completion.</li> <li>• Alcohol and drug policy shall be implemented to encourage healthy lifestyle for workers</li> <li>• IEFCL will ensure site clinic is provided to take care of minor illnesses for all construction workers</li> <li>• IEFCL will conduct enlightenment campaign and health education for the abatement of abuse of drugs, alcohol among workers throughout the life of the project</li> <li>• IEFCL will ensure that contractor enforces the alcohol and drug policy for staff</li> <li>• IEFCL will ensure that contractor implements social and health awareness programs for all workers at induction and on a continuous basis throughout the life of the project</li> </ul>	<p>MI</p>	<p>Low</p>
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Project Phase (C, O, D) <sup>1</sup>	Project Activity	Description of Impact	Significance Rating Before Mitigation	Action	Type of measure (MI, CO) <sup>2</sup>	Significance Rating After Mitigation (Residual Impact Rating)
<b>C+O+D</b>	All construction, operation and decommissioning phases	Loss of biodiversity- Hydrobiological conditions	Low	<ul style="list-style-type: none"> <li>IEFCL will ensure that contractor implements social and health awareness programs for all workers at induction and on a continuous basis throughout the life of the project</li> <li>In accordance with the Monitoring Program IEFCL will carry out yearly assessment of Hydrobiology parameters in the receiving water body interested by the project. If necessary, dedicated actions aimed at minimizing any potential risk in loss of biodiversity will be implemented.</li> </ul>	MI	Very Low
<b>C+O+D</b>		Potential increase of traffic accidents	Medium	<ul style="list-style-type: none"> <li>Ensure maintenance of roads of any damaged parts caused by project activities</li> </ul>	CO	Low

Project Phase (C, O, D) <sup>1</sup>	Project Activity	Description of Impact	Significance Rating Before Mitigation	Action	Type of measure (MI, CO) <sup>2</sup>	Significance Rating After Mitigation (Residual Impact Rating)
	Mobilization, Transportation of personnel, materials and equipment from/to site by road			<ul style="list-style-type: none"> <li>IEFCL will adopt a dedicated traffic management plan (Appendix 7.1) for the mobilization of vehicles during the construction, operation and decommissioning phases to minimize the risk of traffic accidents</li> </ul>	MI	
		Increase in noise levels	Medium	<ul style="list-style-type: none"> <li>Transportation activities during night hours will be minimized up to extent possible</li> <li>IEFCL will verify that all vehicles and equipment conform to regulation for noise standard.</li> </ul>	MI	Low

Project Phase (C, O, D) <sup>1</sup>	Project Activity	Description of Impact	Significance Rating Before Mitigation	Action	Type of measure (MI, CO) <sup>2</sup>	Significance Rating After Mitigation (Residual Impact Rating)
C+O+D	Mobilization, Transportation of personnel, materials and equipment from/to site by road	Increase in noise levels	Medium	<ul style="list-style-type: none"> <li>IEFCL will establish actions aimed at reducing any potential effect associated to increased traffic such as noise. In accordance to the Monitoring Program it will conduct periodic monitoring.</li> <li>IEFCL will implement a Traffic Management Plan to minimize potential effects on noise levels associated to the additional vehicular movements generated by the initiative</li> </ul>	MI	Low
		Increase in air pollution (dust, exhaust fumes)	Medium	<ul style="list-style-type: none"> <li>IEFCL will permit that only vehicles with pre-mobilization certificates to operate in and outside the Project area as to reduce emissions from vehicle exhaust</li> <li>IEFCL will implement a Traffic Management Plan to minimize potential effects on air quality associated to the additional vehicular movements generated by the project</li> </ul>	MI	Low

Project Phase (C, O, D) <sup>1</sup>	Project Activity	Description of Impact	Significance Rating Before Mitigation	Action	Type of measure (MI, CO) <sup>2</sup>	Significance Rating After Mitigation (Residual Impact Rating)
<b>C+O+D</b>	All construction, operation and decommissioning phases	Contamination of groundwater/ surfaces water	Medium	<ul style="list-style-type: none"> <li>• IEFCL shall organize training on safe practices for personnel involved in handling, storage and disposal of materials and wastes</li> <li>• Use of approved storage facility during construction and operation</li> <li>• Adoption of reuse of the waste water in process operation;</li> <li>• Storage containers should be certified prior to use and periodically checked for leaks during project implementation;</li> </ul>	M1	Low

<p><b>C+D</b></p>	<p>All construction and decommissioning phases</p>	<p>Stress on existing security structures</p>	<p>Medium</p>	<ul style="list-style-type: none"> <li>• IEFCL will ensure that both contractor and IEFCL personnel develops a high level of security consciousness both within and outside the work area.</li> <li>• If required, additional security arrangements will be made to enable the existing federal security forces to cope with such situation. PI refer Appendix 7.7 Security management Plan that has addressed these details.</li> <li>• Community engagement shall be done for all aspects as explained section 10.0 of Appendix 7.7, Security Management Plan</li> </ul>	<p>MI</p>	<p>Low</p>
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Project Phase (C, O, D) <sup>1</sup>	Project Activity	Description of Impact	Significance Rating Before Mitigation	Action	Type of measure (MI, CO) <sup>2</sup>	Significance Rating After Mitigation (Residual Impact Rating)
				<ul style="list-style-type: none"> <li>• IEFCL may consider contacting government authorities to further improving the security of the project and providing assistance with equipment, as appropriate. This will be done in accordance to the IFC Performance Standards as has been explained in Appendix 7.7, Security Management Plan</li> <li>• Performance Standards as will be detailed in the Security Management Plan (pl refer Appendix 7.7 of Chapter ESIA document)</li> <li>• IEFCL will ensure there are adequately trained and sufficient numbers of first aiders at each site</li> </ul>		

Project Phase (C, O, D) <sup>1</sup>	Project Activity	Description of Impact	Significance Rating Before Mitigation	Action	Type of measure (MI, CO) <sup>2</sup>	Significance Rating After Mitigation (Residual Impact Rating)
C	Site Preparation	Threat to health of workers (snake, bites, insect stings, injuries, etc.) as potential increase of workplace accidents/diseases	Medium	<ul style="list-style-type: none"> <li>IEFCL will ensure that anti-venom/anti-histamine is available on site to mitigate snake bites and insect stings</li> <li>IEFCL will implement quarterly fumigation/treatment against snakes along perimeter fence of the Project.</li> </ul>	MI	Low

Project Phase (C, O, D) <sup>1</sup>	Project Activity	Description of Impact	Significance Rating Before Mitigation	Action	Type of measure (MI, CO) <sup>2</sup>	Significance Rating After Mitigation (Residual Impact Rating)
O	Routine Operation and Maintenance of the Fertilizer plants	Degradation of ambient air quality by emissions of air pollutants	Low	<ul style="list-style-type: none"> <li>IEFCL will train its personnel by an Environmental Capacity Building Program for minimizing the environmental impact and risks. It will ensure periodic preventive maintenance and in accordance to the Monitoring Program IEFCL will quarterly verify stack emissions and air quality levels. On the basis of monitored data, dedicated actions for the safeguard of ambient air quality will be implemented if necessary</li> <li>IEFCL will implement a Leak Detection and Repair (LDAR) Program that controls fugitive emissions by regularly monitoring. On the basis of monitoring activities, dedicated actions for the safeguard of ambient air quality will be implemented.</li> </ul>	MI	Very Low

Project Phase (C, O, D) <sup>1</sup>	Project Activity	Description of Impact	Significance Rating Before Mitigation	Action	Type of measure (MI, CO) <sup>2</sup>	Significance Rating After Mitigation (Residual Impact Rating)
O	Routine Operation and Maintenance of the Fertilizer plants	Odour annoyance concerns by host communities	High	<ul style="list-style-type: none"> <li>IEFCL will hold yearly environmental awareness /education programs for the stakeholders to educate more about environmental management systems and practices.</li> <li>IEFCL will implement operational strategy and actions to reduce leakages and fugitive emissions (LDAR Program)</li> <li>IEFCL will train its personnel by an Environmental Capacity Building Program for minimizing the environmental impact and risks</li> </ul>	MI	Low
				<ul style="list-style-type: none"> <li>IEFCL will adopt operational/ technical measures to avoid possible emissions within the facility</li> </ul>	CO	

Project Phase (C, O, D) <sup>1</sup>	Project Activity	Description of Impact	Significance Rating Before Mitigation	Action	Type of measure (MI, CO) <sup>2</sup>	Significance Rating After Mitigation (Residual Impact Rating)
C+O+D	Vehicular Traffic	Noise pollution; Gaseous emissions that contaminate/pollute air, land, plants at roadsides, water; Traffic incidences and accidents;	Medium	<ul style="list-style-type: none"> <li>All vehicles will be made to observe the speed limits and long/large vehicles have warning lights to alert other road users; all the vehicles will be maintained at optimal conditions &amp; ensured that all the drivers are certified</li> </ul>	MI	Low
O	Routine Operation and Maintenance of the Fertilizer plants	Spent catalysts and sludge	Medium	<ul style="list-style-type: none"> <li>Segregate by type and store in water-proof metal skips/containers for transportation to approved contractor for low thermal desorption</li> </ul>	MI	Low

Project Phase (C, O, D) <sup>1</sup>	Project Activity	Description of Impact	Significance Rating Before Mitigation	Action	Type of measure (MI, CO) <sup>2</sup>	Significance Rating After Mitigation (Residual Impact Rating)
O+D	All construction and decommissioning phases	Base camp site for workers: Influx of migrant workers, Contamination and spread of HIV/AIDS and STDs	Medium	<ul style="list-style-type: none"> <li>Workers awareness on HIV/AIDS and STDs shall be motivated through posters and oral enlightenment by nurse-in-charge at the Community Health Centre.</li> </ul>	MI	Low
O	During Operation	Emission of Oxides of Sulphur and Nitrogen, and particulates	Medium	<ul style="list-style-type: none"> <li>The Process heaters and boilers will be designed to achieve emissions to atmosphere as per FMEEnv and IFC Guidelines.</li> </ul>	MI	Low
C+O+D	All construction and decommissioning phases	Excessive noise and vibrations from generators, pumps and compressors	Medium	<ul style="list-style-type: none"> <li>Installation of noise reducing devices to exhausts &amp; ensuring the use of earmuffs/plugs by personnel as established in Section 7.6 Occupational HSE Plan</li> </ul>	MI	Low