

**APPLICATION FOR A CERTIFICATE OF  
ENVIRONMENTAL CLEARANCE (CEC)**

# **Post EIA Review and Assessment Report**

**CEC1033/2005: THE ESTABLISHMENT  
OF AN ALUMINIUM SMELTER  
COMPLEX, UNION INDUSTRIAL  
ESTATE, LA BREA**

**MAY 2006**

# **Post EIA Review and Assessment Report**

## **NEC EIA Report**

### **(CEC 1033/2005)**

This Environmental Impact Assessment (EIA) Review and Assessment Report has been compiled following a review of the EIA document submitted by NEC for the establishment of an aluminium smelter (125,000 tonnes/year) complex at the Union Industrial Estate in La Brea.

This Review and Assessment Report provides an overview of the EIA Report, a statement of deficiencies and general comments gathered from the review process that included various State Agencies<sup>1</sup> and the general public participating through independent review. It should be used as a guide to facilitate any corrections, alterations or additions that may be required to fulfil the EMA's Terms of Reference (ToR) and enable presentation of the EIA Report in accordance with the principles of good EIA practice.

The Report has been subdivided into the following sections:

- 1. Overview**
- 2. Assessment**
- 3. General comments**

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<sup>1</sup> A list of participating agency reviewers is provided in Annex I.

# **1 Overview**

The overall quality of the EIA Report was fair, with some of the requirements of the ToR not being adequately addressed. These areas will be expanded in the following sections.

## **2 Assessment**

This section outlines aspects that were partially addressed within the submitted EIA Report. These aspects are considered to be critical for the assessment and the decision-making process of the EMA, and are regarded as deficiencies within the EIA report. NEC or its designated representative(s) must address these concerns in writing to the satisfaction of the EMA. This is necessary to facilitate the EMA's ability to make informed decisions on the relevant impacts of the proposed project on the human and natural environment.

**The decision to grant or refuse a Certificate of Environmental Clearance (CEC) will be dependent on the satisfactory resolution of the issues outlined for the items below.**

### **EXECUTIVE SUMMARY**

The information in Table I, page ES-11, is unclear as to whether the values are modelled, regulatory limits or maximum ground-level concentrations. Please clarify whether by 'residual emissions' it is meant that these are the values after scrubbing and if these are the values at the site boundary.

The document indicated the proposed expansion of the smelter's capacity from 125, 000 tonnes to 250, 000 tonnes. The application for a CEC, and this EIA submitted in its support, addresses the proposed establishment of an aluminium smelter with a capacity of 125, 000 tonnes. The proposed expansion will be subject to a separate application for a CEC as would the decommissioning of the 125, 000 tonne plant.

### **CHAPTER 3.0 PROJECT DESCRIPTION**

- Maps of an appropriate scale, which clearly place and depict the location and appearance of the proposed development with respect to the surrounding community and other areas of importance, are required.

- An aerial photograph of the wider study area depicting the location and density of the settlements in relation to the proposed project is required.
- Regarding the existing buffer zone, please provide the status of such.
- Please confirm that the approximate amount of water consumption is 2444 m<sup>3</sup>/day and identify the source of such in the event WASA is unable to provide it.
- Expansion of project description to include details on quantities of wastes and emissions and detailed plans for disposing of these wastes is required.

#### **CHAPTER 4.0 ANALYSIS OF ALTERNATIVES**

- Possible alternatives for the various plant operations should be explored.

#### **CHAPTER 5.0 DESCRIPTION OF THE ENVIRONMENT**

- It should be noted that the Union Estate is located on the Petrotrin Vessigny oilfield. The area is characterized by surface seepages or 'oilsand' outcrops. The impact, if any, of these outcrops on the proposed plant should be addressed in Chapter 8.
- Chapter 8, Table 8.9 indicates that the probability of potential impact from the compounds listed is classified as high. As such, an analysis of the soil composition with respect to the levels of total petroleum hydrocarbons, heavy metals, polycyclic aromatic hydrocarbons, and petrofluorocarbons must be conducted.

#### **CHAPTER 6.0 PUBLIC CONSULTATIONS**

- Although the Ministry of Labour is cited as being responsible for approvals in respect of worker health and safety (p. 2-24), this ministry

is not included in Table 6.1: Key Regulatory and Government Stakeholders Consulted (pp. 6-3 to 6-5). Such consultation is required to be conducted and documented, and must take into account all stages of the project, that is, from pre-construction to operational phases.

- At the EMA's public consultation, residents of surrounding communities indicated that the EIA public consultation conducted by the applicant did not provide a forum for the EIA team to answer their questions and address their concerns fully. Provide a reason/response to this.

## **CHAPTER 7.0 RISK ASSESSMENT**

- The risk assessment did not address the long-term risk to human and ecological health due to exposure of air emissions, such as Hydrogen Fluoride (HF), Polycyclic Aromatic Hydrocarbons (PAH) or particulate matter (PM<sub>10</sub> and PM<sub>2.5</sub>) directly from the process. A human health risk assessment is required in light of the predicted exceedance of the ambient ground-level HF standard.
- Provide a detailed plan to address the event of plant breakdown resulting from interruption of electricity service or as a result of hurricane or other catastrophic event.
- Please provide documented proposed response plans, in the event of accidents that may occur during construction and operation failure, for persons affected by such, for example the Vessigny High School.
- In Section 7.3.3, in the analysis of the hazard scenario #1 the document states proposed measures to manage such risk. Detailed information on the measures is required.

## CHAPTER 8.0 ENVIRONMENTAL IMPACT ANALYSIS

- The cumulative impact of the purpose-built facilities for receiving and transporting imported raw materials at the Brighton Port facility, including the proposed plants for the Union Estate and the proposed Industrial Estate at Cap-de-Ville, must be assessed. This includes air emissions, increased vessels at the Brighton Port, land transit routes and the use of potable water supply.
- The generation of an electromagnetic field is consistent with the operation of an aluminium smelter; predictions of expected electromagnetic field outside the proposed smelter plant is required.
- In the event that the treated effluent exceeds existing water discharge standards, provide the contingency plan to ensure that the untreated discharge does not enter the environment.
- Provide details on the measures to be implemented to protect groundwater quality from run-off.
- Section 8.5.2.3.3 provides the options regarding the management of Spent Pot Lining (SPL). The option for the crushing of the SPL and either mixing with cement and buried, or buried in cement lined chambers for future removal and disposal at an engineered landfill site for hazardous waste is unrealistic, as no such facility exists at present at Union Estate. Provide a definitive and viable proposal for the disposal of the SPL.
- Regarding stack emissions, the following is required:
  1. A discussion of any consideration of the Best Available Technology (BAT).
  2. A comparison of stack emissions with the World Health Organization (WHO) and United States Environmental Protection Agency (USEPA) Discharge Standards (**not Ambient**) specific to aluminium smelters.
  3. A comparison of stack emissions with Trinidad and Tobago Draft Air Pollution Rules (Third Schedule).

4. Emissions should be presented in  $\mu\text{g}/\text{m}^3$ .
5. Information regarding the expected quantities of emissions.

## **CHAPTER 9.0 MITIGATION MEASURES**

- The mitigation and impact summary tables in this chapter were not well organized and difficult to read. Please present this information in a manner which addresses these issues.
- Mitigation and monitoring for the air emissions, such as HF, requires more detailed attention in impact assessment and mitigation. Specifically, mitigation measures to address fugitive emissions must be clearly stated.
- Noise-abatement measures, particularly in the pot rooms, should be clearly stated.
- The mitigation measures should be presented in a manner to clearly state the impact to be mitigated, the proposed action and responsibility for the implementation of the proposed mitigation measures.

## **AIR DISPERSION MODELLING REPORT**

- The description and delineations of the property line, off site and Buffer Zone are not clear. While the Buffer Zone boundary is mentioned in the footnote to Table 4.3, there is no depiction of its specific location.
- It is not readily apparent from the Report whether the input meteorological data for the model was collected around the site. There is no wind rose presented, nor is there any mention of a local weather station. Please clarify.
- The dispersion modelling figures are of poor quality and not easy to read. In some cases, for example Figures 4-7, 4-10, 4-12, 4-20 and 4-21, it is difficult to read the predicted values of the concentration contours. Please present this information in a manner which addresses these issues.

- It was unclear whether the model predictions included the planned mitigation measures described in Volume 1 of 3 of the EIA. Please clarify.
- It is clear that the predicted ambient HF levels are not within the relevant standard, the Draft Air Pollution Rules, 2005, which states a limit value for HF of 1.0  $\mu\text{g}/\text{m}^3$ , including outside the Buffer Zone. There was little discussion of these exceedances, especially regarding the HF at the Vessigny High School located immediately downwind, considering the prevailing winds. Given the exceedance of HF outside the site limits, further measures (design or other mitigation measures) to reduce the HF emissions are required. Please state how this matter is to be addressed.
- The document states that the standards of the USEPA, World Bank and World Health Organisation will be met. While a comparison is provided in the document for the California Environmental Protection Agency and the Office of Environmental Health Hazard Assessment, a comparison of the predicted performance with the other jurisdictions is required.

## **SOCIAL IMPACT ASSESSMENT REPORT**

- Details of labour requirements, including the expected phasing of foreign labour and accommodation arrangements, as well as increased demands on existing amenities to support such, the management of wastes generated, and social impacts related to the presence of such foreign labour are required.
- Provision of visuals to clearly illustrate existing land-use patterns including locations of settlements and population densities, existing land and sea transportation networks, location of current recreational areas including beaches, rivers, dams, community sport and recreation grounds are required.
- Expansion of baseline socio-economic description to include information on culture/heritage sites, complete information on existing education and

training facilities, details on income statistics for the study area, details on baseline health statistics, description of existing solid waste disposal facilities, and a discussion of the types and quantities of community organisations in operation within the study area is required.

- Impacts identification and assessment should be enhanced by the use of an Impacts Matrix and shared with stakeholders and appropriate community representatives for corroboration. Significant impacts should be highlighted.
- Mitigation measures should be presented in such a way as to make it clear what action is proposed, who is responsible for this action (ALUTRINT, NEC, or the State) and what impact is being mitigated.

### **3 General Comments**

The quality of the mapping is poor throughout the document. In some cases, key graphics (e.g. Figures II, 1, 1.1 and 8-1) are particularly illegible. The Social Impact Assessment was not clearly integrated into the main EIA report. Mitigation and monitoring for the potential impacts required more detailed analysis. Tables do not appear in numerical sequence in the EIA document.

## **ANNEX I: LIST OF PARTICIPATING AGENCIES**

- Water Resources Agency
- Town and Country Planning Division
- Trinidad and Tobago Fire Services
- Ministry of Labour
- Environmental Management Authority