PLAN OF STUDY FOR SCOPING

for the

Environmental Impact Assessment of a Proposed Aluminium Smelter at Coega

APRIL 2002 TO JULY 2002

Submitted in terms of the EIA Regulations published in Government Notice No. R1183 of 5 September 1997 under Section 26 of the Environment Conservation Act (No. 73 of 1989)

This updated summary of the Plan of Study for Scoping has been prepared for inclusion on the CSIR website for the Pechiney Aluminium Smelter EIA (smelter.csir.co.za)

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## APPENDIX 1

Overview of Screening Process undertaken by Aluminium Pechiney in the identification of Coega as a possible site for the location of an aluminium smelter
1. INTRODUCTION

1.1 Applicant (name and address)

Aluminium Pechiney
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1.2 Nature of the proposed activity

Aluminium Pechiney, a French company listed on the French Commercial Register, is proposing to construct and operate an aluminium smelter in the Coega Industrial Development Zone (IDZ), in the area identified in the IDZ planning as the metallurgical cluster. Aluminium Pechiney (AP) is one company within The Pechiney Group, focussed on the production of primary aluminium and aluminium products. Other core business of The Pechiney Group includes the production of packaging materials, production of ferroalloys and international trade. The Pechiney Group has been in operation since 1898.

Aluminium Pechiney is the fourth largest primary aluminium producer in the world, and the world leader in design and supply of aluminium production technology. The company conducts bauxite mining, alumina refining and aluminium smelting operations in a total of five countries.

In an international site selection study, Aluminium Pechiney identified 11 potential sites for an aluminium smelter. This analysis led to more detailed investigations of three of the preferred sites, these being Coega in South Africa, and sites in Australia and Argentina. Due to recent economic instability in Argentina, the more detailed studies for this site were stopped. At present, engineering, planning and environmental feasibility studies are underway at the South African and Australian sites, with the intention of reaching a decision on the preferred site as soon as strategic agreements are reached. (Further information on the site screening process is contained in Appendix 1).

The feasibility study will provide information on which the investment decision will be taken by AP and will include financial, technical and environmental feasibility. In investigating the environmental feasibility of the proposed smelter, AP has commissioned an Environmental Impact Assessment (EIA) that will be conducted by the CSIR (Environmentek) together with Sandy & Mazizi Consulting.
(who will carry out the public participation process) and a team of specialists. CSIR is the independent consultant for the Scoping and EIA process.

This document forms the Plan of Study for Scoping which is a requirement in terms of the EIA regulations (Sections 21, 22 and 26 of the Environmental Conservation Act, Act No. 73 of 1989).

2. DESCRIPTION OF THE PROPOSED ACTIVITY

2.1 Introduction

The aluminium smelter will be operated with new generation smelting technology (AP50) developed by AP. The recently developed AP50 smelting technology represents significant capital and operating cost advantages, and high standards of environmental performance. The provision of commercially available electricity supplies and port facilities were key factors in short-listing Coega as a preferred site.

The smelter project will comprise a single potline of 336 electrolysis cells together with associated facilities for carbon anode production, aluminium casting, materials handling and storage, and port loading and unloading.

There is a potential for a second potline, construction of which has to be assessed at a later stage.

2.2 Pechiney Project Schedule

Aluminium Pechiney proposes to begin feasibility studies and the approvals process in early 2002, commencing construction by early 2003 and operation in early 2005, as is detailed in the proposed project schedule below (Table 1).

<table>
<thead>
<tr>
<th>Activity</th>
<th>Schedule</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preferred site confirmed</td>
<td>2002</td>
</tr>
<tr>
<td>Environmental Impact Assessment and Approvals</td>
<td>2002</td>
</tr>
<tr>
<td>Construction</td>
<td>2003 / 2004</td>
</tr>
<tr>
<td>First metal</td>
<td>Early 2005</td>
</tr>
<tr>
<td>Full metal capacity reached</td>
<td>End 2005</td>
</tr>
</tbody>
</table>

It is planned that construction will take 26 months leading to the first metal production early 2005 and full capacity production 8 months after first metal. The duration of the project from beginning of the construction to operation at full capacity is expected to be 34 months. The life of the project is expected to be 30 to 40 years.
2.3 Description of Proposed Development

2.3.1 General Details

<table>
<thead>
<tr>
<th>Description</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plant Area</td>
<td>80 hectares</td>
</tr>
<tr>
<td>Number Potlines</td>
<td>1</td>
</tr>
<tr>
<td>Number Potrooms</td>
<td>2</td>
</tr>
<tr>
<td>Length of Potrooms</td>
<td>1200 meters</td>
</tr>
<tr>
<td>Number electrolysis cells</td>
<td>336</td>
</tr>
<tr>
<td>Production Capacity</td>
<td>approximately 485,000 tons/year</td>
</tr>
<tr>
<td>Alumina consumption</td>
<td>approximately 931,000 tons/year</td>
</tr>
<tr>
<td>Petroleum Coke consumption</td>
<td>approximately 180,000 tons/year</td>
</tr>
<tr>
<td>Liquid Pitch consumption</td>
<td>approximately 38,000 tons/year</td>
</tr>
<tr>
<td>Electricity demand</td>
<td>approximately 860 MVA</td>
</tr>
<tr>
<td>Electricity supply</td>
<td>3 x 132 kV lines</td>
</tr>
<tr>
<td>Water usage</td>
<td>approximately 600,000 m³/year</td>
</tr>
<tr>
<td>Fuel Oil usage</td>
<td>approximately 31,780 tons/year</td>
</tr>
</tbody>
</table>

The proposed development of the AP50 smelter is detailed below.

2.3.2 Construction

Construction is anticipated to commence in early 2003 and last for a period of 26 months. The proposed site is currently uncleared and undeveloped, so initial construction will require the development of a suitable site upon which to build the smelter and an access road to the site. Site and earthworks are scheduled to commence in late 2002.

Dedicated port facilities for unloading raw materials and loading finished products will be constructed in conjunction with development of the adjacent Port of Ngqura.

2.3.3 Operation Summary

The AP50 smelter is a continuously operating facility producing approximately 485,000 tpa of aluminium metal. Aluminium ingots will be the primary product that will be produced for shipment, from the proposed port facility, to international markets.

Aluminium metal is produced by electrolytic reduction of alumina. Raw alumina (the white powdery oxide of aluminium produced through refining of bauxite) is first passed through a dry scrubber where it is used to adsorb fluoride emissions from the electrolysis cells or "pots". Fluoride enriched alumina is then fed into the potlines, made up of multiple reduction cells connected electrically in series. Aluminium oxide dissociates to aluminium and carbon dioxide by the reduction of carbon:

\[ 2\text{Al}_2\text{O}_3 + 3\text{C} \rightarrow 4\text{Al} + 3\text{CO}_2 \]
The smelter consists of 3 major process components:

- 1 potline with 336 pots (electrolytic cells);
- 1 Carbon Plant and Rodding Shop for production of anodes; and
- 1 Casthouse for pouring ingots.

### 2.3.3.1. Potline and Pots

The potline will consist of two elongate potrooms measuring 1200m x 30m. Each room will house 168 pots aligned sequentially in two groups of 84 pots, electrically connected. There will be 336 pots in total in the AP50 potline.

Each pot represents one large electrolytic cell (based on prebaked anode cell technology) lined with conducting carbon blocks and insulating bricks (cathodes). A steel-reinforced structure supports the overall pot including the anode system, cathode shell, a hooding system and alumina supply hopper.

The cathode assembly will be contained within a rigid shell, containing carbon blocks and sealed steel bars to conduct current. Layers of refractory and insulating bricks will provide thermal insulation. The impregnated cathode has to be rebuilt about every 7/8 years.

There are 24 anode assemblies on each pot described below (12 on each side of the pot).

An electric current will be passed sequentially through the line of electrically connected pots (along the potline). Inside the pot the alumina will be automatically fed at several points on the axis of the pot and dissolved in a molten bath of sodium aluminium fluoride (cryolite). The direct current will cause the alumina to separate into aluminium and oxygen through the electrolytic process while the heat generated will maintain the molten bath at about 950°C. The aluminium will be tapped periodically by vacuum suction.

Associated with the potline will be two Gas Treatment Centres (GTC’s) that will be positioned between the potrooms to receive emissions from the pots. In addition to CO₂, emissions will consist primarily of fluoride, sulphur dioxide and dust. The GTC’s are dry scrubbing units, having the primary role of recycling near the total of fluoride and dust captured from the pots. The emissions are treated in the GTC, to extract the fluoride using alumina as a scrubbing agent. The ‘fluorinated alumina’ is then directed into the pots. The dry scrubbing system is not efficient at SO₂ abatement.

### 2.3.3.2. Anode Manufacture

Anodes are used to conduct electricity into the smelting pots where they are gradually consumed during the process. The expected life of an anode is approximately 640 to 770 hours, so they are replaced on a rotating schedule. Due to a high demand for anodes, they will be manufactured on site in a carbon plant by a 3-stage process:

- **Paste plant** - Green (unbaked) anodes will be produced by crushing petroleum coke and recycled anode butts (the remainder of the mostly consumed anode) then mixing it with liquid pitch to form an anode paste and compacting the paste into anode blocks;
- **Anode-baking furnace** - The anodes are baked at about 1100°C in an oil-fired furnace for
Pechiney EIA: Plan of Study for Scoping

several weeks in order to give them mechanical and conductivity properties; and
B Rodding house - Anodes are then attached to rods by mean of cast iron in the rodding house and transported to the potline.

Associated with the anode-baking furnace is a fume treatment centre (FTC) to extract and recycle fluoride, PAH containing tar and dust from emissions created by the anode baking process. This is a dry scrubbing unit, also utilising raw alumina as the scrubbing agent with the resultant ‘enriched alumina’ being recycled into the pots resulting in PAH destruction.

There is also a pitch fume treatment centre (PFTC) associated with the paste plant. This is a dry scrubbing unit that treats PAH containing tar and dust emissions from the paste plant, using particulate coke as the scrubbing agent. This ‘enriched coke’ is recycled into the paste plant.

2.3.3.3. Casting

Molten aluminium metal is extracted from the pots by a vacuum and siphoned into large ladles. Specific vehicles will transport ladles to the casthouse. Metal will be siphoned from the ladles into holding furnaces in preparation for casting. Various alloying elements can be added to the metal to attain specific qualities and strengths (for differing customer requirements). The metal is then cast into ingots and bundled for shipping. Aluminium dross or skimmings is a by-product of the casting step due to some re-oxidation of aluminium.

2.3.3.4. Material Handling and Storage

Major raw materials required for the smelting process are:

- fresh alumina;
- calcined petroleum coke;
- aluminium fluoride; and
- liquid coal tar pitch.

All of these materials will be transported by ship to dedicated port facilities within the proposed Port of Ngqura.

Fresh alumina and coke will be transported by dedicated vessels, which carry loose, dry-bulk material then unloaded by vacuum onto an enclosed conveyor system. The material will be transported to the smelter site for storage in sealed vessels (possibly silos or domes) for alumina, while coke will be stored in an A-frame shed. Initially the alumina will be delivered in Panamax class vessels (i.e. a maximum size of vessel that is able to pass through the Panama canal) approximately every three weeks. The coke will be transported and stored in the same way and by the same conveyor system.

Aluminium fluoride will probably be imported in one tonne bulker bags or 25kg layer bags and transported by truck to the site for storage and use.

Liquid pitch will be shipped in a dedicated, heated vessel and transported by truck from the port to the smelter site unless a heated pipe is practical.
The final product will be aluminium in the form of ingots. The ingots will be stacked and trucked to the port from the smelter, loaded onto ships and exported.

### 2.3.3.5 Port Facilities

Dedicated port facilities will be established for vacuum unloading of alumina and petroleum coke. Liquid pitch will be unloaded at a dedicated unloading station and stored at the port prior to transfer to the smelter site.

A metal storage site (for the finished product) will be established adjacent to the port for interim storage prior to ship loading.

### 2.3.4 Workforce

#### 2.3.4.1 Construction

The number of construction workers is still to be assessed according to the typical South African standard of construction. The workforce will peak at approximately 6,000 people for a period of 12 months during the construction phase. The workforce will be sourced locally where possible. It has been proposed that a temporary workers camp be established at the site for the duration of construction.

#### 2.3.4.2 Operation

Operation of the smelter will require approximately 750 full-time, permanent employees. About 550 of these positions will be waged employees, most of which will be organised in shift-work. There will be about 200 technical and management positions required for operation of the smelter. An additional 200 to 300 subcontractors will be employed for smelter operations.

### 2.3.5 Location of the proposed activity

The aluminium smelter is proposed to be located in Zone 5 of the Industrial Development Zone, within the area identified as the metallurgical cluster. The area under consideration for the location of the aluminium smelter lies on the farm Swartekoppen 302. The particular portions involved are:

- 302/12
- 302/13
- 302/14
- 302/15
- 302/33
- 302/36
- 302/47.

The location of the site is shown in Figure 1.
2.4 Alternatives

Aluminium Pechiney has identified 11 possible international sites for the proposed smelter, of which the Coega and Australian sites are currently considered the preferred sites and being subjected to feasibility studies covering technical, financial and environmental aspects (refer to Appendix 1).

Environmental, planning and technical studies undertaken for the Coega IDZ have informed the designation of a “metallurgical cluster” within the IDZ. The proposed smelter is located within this cluster and has been accepted by the Coega Development Corporation as a suitable industrial activity for this area.

The main alternatives that will be included in the EIA are:

- Comparison of impacts against the “no go” option, which provides a baseline for assessment;
Alternative routes for vehicle transport between the Port of Ngqura and the smelter;
Possible alternatives for transport of raw materials between the Port of Ngqura and the smelter (eg. transport of liquid pitch by truck or pipeline).

3. **PRINCIPLES AND OBJECTIVES OF SCOPING**

3.1 **Principles for Scoping**

As public involvement is an integral part of IEM, IEM principles apply. The Department of Environmental Affairs and Tourism (DEAT) has listed those most relevant to public involvement as follows:

- Meaningful and timeous participation of I&APs.
- Focus on important issues.
- Due consideration of alternatives.
- Accountability for information used for decision-making.
- Inclusivity (the needs, interests and values of I&APs must be considered in the decision-making process).
- Encouragement of co-regulation, shared responsibility and a sense of ownership.
- Dispute resolution.

To the above, one can add universally recognised public participation principles:

- Inclusive consultation that enables all sectors of society to participate in the consultation and assessment processes.
- Information is easily accessible (physically, in a language that I&APs can understand and non-technical) and sufficient to enable meaningful participation.
- Grassroots people are actively empowered and capacitated to understand concepts and information with a view to active and meaningful participation.
- Information accessibility is achieved by the use of a variety of dissemination vehicles, for example, by way of discussion documents, meetings, workshops, focus group discussions, and the printed and broadcast media.
- Information is accurate and I&APs are afforded sufficient time to study material, to exchange information, and to make contributions at various stages during the assessment process.
- I&APs are afforded the opportunity to input via a range of methods, for example, during briefing sessions, during public meetings or at public open days, written submissions and direct contact with members of the EIA Team.

Public participation is a process and vehicle to provide sufficient and accessible information to I&APs in an objective manner to assist I&APs to identify issues of concern, to identify alternatives, to suggest opportunities to reduce potentially negative or enhance potentially positive impacts, and to verify that issues and/or inputs have been captured and addressed during the assessment process. Arising from the above, it is clear that public involvement is not a public relations exercise or part of a development proponents corporate social responsibility/community neighbour relations programmes.
At the outset it is important to highlight two key aspects of public participation:

- There are practical and financial limitations to the involvement of all individuals within a public participation programme (PPP). Hence, public participation aims to generate issues that are representative of societal sectors, not each individual. The PPP will therefore be designed to be inclusive of the broadest possible range of sectors.
- The PPP will aim to raise a diversity of perspectives and will not be designed to force consensus amongst I&APs. Indeed, diversity of opinion rather than consensus, is likely to enrich ultimate decision making. Therefore, where possible, the public involvement process will aim to obtain an indication of trade-offs that all stakeholders (I&APs, technical specialists, the authorities and the development proponent) are willing to accept with regard to economic growth, social equity and ecological sustainability.

3.2 Objectives of the Scoping Phase

The objectives of the Scoping Phase of an EIA are to:

- Identify the issues of concern that should be addressed in the EIA Specialist Studies
- Design the required work to understand and evaluate these issues, and to address shortcomings in existing information
- Define the scope of the project and the studies to be done in a way which would result in a thorough and scientifically defensible Environmental Impact Report (EIR) at the end of the EIA to ensure that the proposed development will be executed in an environmentally sound manner.

Sub-objectives of Scoping, which are directed at laying the foundation for the EIA, are as follows:

- Identify and inform a broad range of stakeholders about the proposed development, to empower them with sufficient information to be able to make meaningful contributions to the project, and to provide ample opportunity to all parties to exchange information, and express their views and concerns;
- Obtain the buy-in of the stakeholders for the EIA process per se, so that they will accept the ultimate findings of the EIA;
- Understand and fully document the issues underlying the concerns and questions raised by stakeholders, for the purpose of avoiding misunderstandings and controversy during later phases of the EIA, and to focus the study on reasonable alternatives and relevant issues.

The public participation process for the Scoping process is described in the following section.

4. DESCRIPTION OF TASKS TO BE PERFORMED

4.1 Scoping and Public Participation

Scoping will be driven by public participation as well as technical inputs from the EIA team and the proponent. The primary function of public involvement is to provide a process of improved decision making whereby I&APs, technical specialists, the authorities and the development proponent work together to produce better decisions than if they had worked independently. This section contains a detailed description of the public participation activities during Scoping.
The eleven key steps in the Scoping process are described below and shown in Figure 2.

**Figure 2: Detailed Scoping process showing key roles and interactions between the proponent, the consultant, the authority and I&APs.**

<table>
<thead>
<tr>
<th>Step</th>
<th>PROPOSENENT: Aluminium Pechiney</th>
<th>CONSULTANTS: CSIR, Sandy &amp; Mazizi Consulting</th>
<th>INTERESTED AND AFFECTED PARTIES (I&amp;APs)</th>
<th>AUTHORITIES: DEAE&amp;T* Others</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Provide background information (project description and site screening)</td>
<td>B. Pre-application consultation</td>
<td>B. Attend pre-application consultation</td>
<td>B. Attend pre-application consultation</td>
</tr>
<tr>
<td>2</td>
<td>Inputs on international stakeholders</td>
<td>B. Submit application &amp; Plan of Study for Scoping</td>
<td>B. Review &amp; accept Plan of Study for Scoping</td>
<td>B. Review &amp; accept Plan of Study for Scoping</td>
</tr>
<tr>
<td>3</td>
<td>Review draft documents</td>
<td>I&amp;AP identification &amp; registration</td>
<td>Initial consultations with authorities and interest groups</td>
<td>Initial consultations with authorities and interest groups</td>
</tr>
<tr>
<td>4</td>
<td>Attend public meeting</td>
<td>Project announcement</td>
<td>Comment on EIA process and identify issues to be addressed in EIA</td>
<td>Comment on EIA process and identify issues to be addressed in EIA</td>
</tr>
<tr>
<td>5</td>
<td></td>
<td>Consultation with I&amp;APs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Provide technical inputs &amp; review draft report</td>
<td>Prepare &amp; distribute Draft Scoping Report</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Attend public meetings / open days</td>
<td>Comments period</td>
<td>Attend meetings &amp; comment on Draft Scoping Report</td>
<td>Attend meetings &amp; comment on Draft Scoping Report</td>
</tr>
<tr>
<td>8</td>
<td></td>
<td></td>
<td>Updated Issues Trail</td>
<td>Updated Issues Trail</td>
</tr>
<tr>
<td>9</td>
<td>Provide technical inputs &amp; review draft document</td>
<td>Prepare &amp; distribute Final Scoping Report</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Attend authority meeting (if necessary)</td>
<td>Meeting with authorities</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td></td>
<td>Finalise Terms of Reference for Specialist Studies</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Dept. of Economic Affairs, Environment & Tourism
Step 1
Pre-application consultation and submit Plan of Study for Scoping

A pre-application consultation was held with Mr Leon Els and Mr Andries Struwig of the Department of Economic Affairs, Environment and Tourism (DEAE&T) on 7 March 2002, where it was established that DEAE&T is the relevant authority for this EIA process. This informed the preparation and submission of this Plan of Study for Scoping.

Step 2
I&AP identification, registration and the creation of an electronic database

The identification and registration of I&APs will be based on the existing Coega database (which currently includes 1184 I&APs) and will be ongoing for the duration of the study. Stakeholders from a variety of sectors, geographical locations (local, provincial, national, international) and/or interest groups can be expected to show an interest in the development proposal, for example:

- National, Provincial and Local Government.
- Local interest groups, for example, rate payers associations and health groups
- Agriculture (formal and informal)
- Industry and mining
- Commerce
- Tourism
- Labour
- Environment
- Grassroots communities
- Non Government and Community Based Organisations
- International organisations such as key Aluminium Pechiney stakeholders and environmental and developmental Non Government Organisations.

Although the list of potential I&APs appears inexhaustive, the establishment of an electronic database and the customization of existing information to suit the needs of this project will assist in conducting the Public Participation Programme (PPP). Some time and energy will need to be expended, in close consultation and co-operation with Aluminium Pechiney personnel, in capturing international stakeholders.

The key stakeholders for this EIA will be identified. These include the authorities, I&APs who act as sectoral representatives, I&APs with whom Aluminium Pechiney may have ongoing contact, and individuals who have previously expressed sentiments (positive or negative) regarding the IDZ, AP or its activities. An easy way to identify key stakeholders is to ask other stakeholders during the course of networking and referral in the compilation of the database. Key stakeholders will receive all project documentation (whether they request it or not) and special efforts will be made to encourage their attendance of meetings and public open days.

Step 3
Project announcement

The development proposal and associated environmental assessment process will be widely announced, with an invitation to the general public to register as I&APs and to
actively participate in the PPP. This will be achieved via the following:

- A letter of invitation to all I&APs captured on the database.
- Print media advertisements in local and regional newspapers.
- The dissemination of a Briefing Paper (with letters of invitation, to key stakeholders and also to I&APs who register as a result of advertising) covering:
  - A simplified rationale for and description of the development proposal.
  - A description of the environmental assessment process, including public involvement and, importantly, milestones where stakeholder input is critical.
  - An invitation to I&APs to participate, especially to attend public open days.
- Provision of information on the website for the Aluminium Pechiney EIA, which is to be hosted by CSIR.
- A “Question and Answer Booklet” will be prepared to ensure that I&APs have responses to their queries available when required. This will be placed on the website.

**Step 4**
**Consultation with I&APs (including authorities)**

Focus group meetings will be held with authorities and key stakeholders. These meetings will focus on the clear elucidation of issues and the process to be followed in the EIA. A public meeting is scheduled for 24 April in Port Elizabeth, where I&APs will have the opportunity to find out more about the EIA process and the proposed project, and raise issues and concerns. It is planned that a representative of Aluminium Pechiney will be present at this meeting.

Meetings will be arranged by the CSIR (as the independent consultant) with the authorities at local, regional and national level throughout the environmental assessment process, particularly when milestones are reached. It should be noted that all public involvement documents will also reach the authorities in their capacity as I&APs.

**Step 5**
**Compile issues trail**

The public participation consultant will compile an issues trail that will include all comments provided at meetings or submitted via fax, email or telephone. The issues trail will be updated regularly during the Scoping process and will allow all registered I&APs to gain an appreciation of the issues and concerns raised by other stakeholders.

**Step 6**
**Prepare and distribute Draft Scoping Report**

The Draft Scoping Report will be prepared based on issues identified during the Scoping phase. The CSIR will obtain inputs from the EIA specialist team when evaluating and responding to issues raised through Scoping. These technical inputs are important to understanding the nature and scope of issues to be addressed either through the Scoping Report or in the EIA.

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1 The involvement of the authorities is not in a decision making capacity. Rather, the authorities will be invited to participate and contribute issues/provide guidance in relation to Scoping and the EIA.
We envisage that the Draft Scoping Report will contain, as a minimum the following chapters:

- Introduction
- Description of the proposed project
- Description of the affected environment
- Synthesis of issues raised by I&APs and an associated response on how this will be addressed in the Environmental Impact Assessment (EIA)
- Terms of Reference for the specialist studies for the EIA.

In addition, the Public Participation Programme will be written up as a chapter in the Scoping Report and will include:

- The identification and listing of I&APs.
- The establishment and record of the procedure by which I&APs were afforded an opportunity to participate in the Scoping process.
- An updated Issues Trail that lists issues that were identified as being of concern to I&APs (as an Appendix).
- A record of all correspondence from I&APs received during Environmental Scoping (as an Appendix).

A Summary of the Draft Scoping Report will be prepared and produced and circulated to all I&APs on the database. The Draft Scoping Report will be made available to the public through:

- Announcing the availability of a Draft Scoping Report via letters to all I&APs on the database, as well as advertisements in local and regional newspapers.
- The distribution of the Draft Scoping Report by mailing or direct delivery to key stakeholders; providing copies at public libraries in the Port Elizabeth/Uitenhage area, Cape Town and Johannesburg; and placement on the EIA website.

**Step 7**

**Obtaining comments on the Draft Scoping Report**

Public meetings and Open Days will be held, with the primary purpose being to discuss the report and obtain detailed comments from the general public. I&APs will be invited to participate in Community-based Capacity Building Sessions, Open Days and Public Meetings.

The public meetings will be advertised in the local and regional press and are open for all members of the public to attend. They will be audio-recorded, with summary notes provided on the proceedings. These notes will be available to I&APs on request, as well as being hosted on the EIA website and included as an Appendix to the Final Scoping Report.

The terms of reference for the specialist studies or later stages of the EIA may be revised based on comments on the Draft Scoping Report.

**Step 8**

**Updated Issues Trail**

The Issues Trail will be updated by the Public Participation consultant, based on the feedback received during the comments period. This will form part of the Final Scoping Report.
Step 9  
Final Scoping Report

A Comments Report will be prepared as an appendix to the Scoping Report. This will be cross-referenced with the Response Report to be produced at the completion of the EIA, in order to enable I&APs to check how their issues have been addressed in the EIA. The Final Scoping Report will be placed in public libraries, hosted on the EIA website and submitted to key stakeholders and authorities. All I&APs on the database will be informed via a newsletter of the availability of the report.

Step 10  
Authority review of Final Scoping Report

The Final Scoping Report is submitted to the authority for review and decision-making. A meeting is proposed where the EIA team presents the results of the Scoping process to the authority.

Step 11  
Finalise Terms of Reference for specialist studies

Once the key issues requiring investigation have been identified and all comments from I&AP’s received, the EIA team will review whether any additional issues need to be added to the specialist’s Terms of Reference, or whether any additional specialist studies are required. The finalized list of specialist studies and Terms of Reference will be compiled into the Plan of Study for the EIA.

4.2 General Recording and Reporting

4.2.1 Record keeping

The public involvement consultant will keep meticulous records of public involvement activities, comments received and responses to comments. Furthermore, proceedings of meetings are recorded, all of which enable the compilation of a comprehensive I&AP issues trail.

4.2.2 Translations

The public involvement process will be undertaken in English and Xhosa, with selected documents, summaries and advertisements translated into Xhosa. I&APs will be welcome to use the language of their choice during meetings, with translations into Afrikaans, Xhosa or English being undertaken by the public participation team.

4.2.3 Information Posters

A set of information posters will be produced for use at the strategic communications workshops, public meetings and information desks. Aluminium Pechiney is encouraged to provide posters that clearly and simply explain the proposed project.
4.3 **Initiation of Specialist Studies in Parallel with Scoping**

A set of specialist studies considered necessary for this EIA has been identified. This was considered reasonable on the basis of Pechiney’s world-wide aluminum industry experience, CSIR’s experience in undertaking EIAs for aluminium smelters in southern Africa, baseline information provided by existing studies for the Coega IDZ, and the CSIR’s experience from the Strategic Environmental Assessment for the Coega IDZ. The specialist studies will be initiated in parallel with the Scoping process. This process will enable the specialists to analyse baseline information and set-up model studies that will assist the EIA team in understanding the issues raised during the Scoping phase.

The findings of the Scoping process will inform the specialist studies, which will only be completed after the Scoping process is finalised.

The specialist studies identified at the outset of the EIA are listed in the table below, together with the specialist(s) for each study. Several of the specialists have direct experience in undertaking technical studies for aluminium smelters.

<table>
<thead>
<tr>
<th>Specialist study</th>
<th>Specialist(s) and their affiliation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) Air quality</td>
<td>Dr Mark Zunkel, CSIR</td>
</tr>
<tr>
<td></td>
<td>Yvonne Hong, CSIR</td>
</tr>
<tr>
<td></td>
<td>Riëtha Oosthuizen, CSIR</td>
</tr>
<tr>
<td>2) Water quality (storm water and liquid waste)</td>
<td>Grant Mackintosh, CSIR</td>
</tr>
<tr>
<td></td>
<td>Philip de Souza, CSIR</td>
</tr>
<tr>
<td>3) Materials handling and waste management</td>
<td>Sanjeev Raghubir, CSIR</td>
</tr>
<tr>
<td>(solid waste)</td>
<td>Dr Sibbele Hietkamp, CSIR</td>
</tr>
<tr>
<td>4) Water discharges to the marine environment</td>
<td>Stephen Luger, CSIR</td>
</tr>
<tr>
<td></td>
<td>Dr Pedro Monteiro, CSIR</td>
</tr>
<tr>
<td></td>
<td>Dr Allan Connell, CSIR</td>
</tr>
<tr>
<td></td>
<td>Roy van Ballegooyen, CSIR</td>
</tr>
<tr>
<td></td>
<td>Susan Taljaard, CSIR</td>
</tr>
<tr>
<td>5) Socio-economics</td>
<td>Johan van der Walt, ACER Africa</td>
</tr>
<tr>
<td></td>
<td>Xolisa Ngwadla, ACER Africa</td>
</tr>
<tr>
<td></td>
<td>Dr Dieter Heinsohn, ACER Africa</td>
</tr>
<tr>
<td>6) Traffic and transportation</td>
<td>Dave Jones, CSIR</td>
</tr>
<tr>
<td></td>
<td>Theuns Lamprecht, CSIR</td>
</tr>
<tr>
<td>7) Macro-economics</td>
<td>Dr Martin de Wit, CSIR</td>
</tr>
<tr>
<td></td>
<td>Prof James Blignaut, University of Pretoria</td>
</tr>
<tr>
<td>8) Noise</td>
<td>Klaus Weber, Vibracoust</td>
</tr>
<tr>
<td>9) Visual impacts</td>
<td>Bernie Oberholzer, Bernard Oberholzer Landscape Architects</td>
</tr>
<tr>
<td></td>
<td>Quinton Lawson, Meirelles Lawson Architects</td>
</tr>
</tbody>
</table>
APPENDIX 1

OVERVIEW OF SCREENING PROCESS UNDERTAKEN BY ALUMINIUM PECHINEY IN THE IDENTIFICATION OF COEGA AS A POSSIBLE SITE FOR THE LOCATION OF AN ALUMINIUM SMELTER
1. Introduction

A screening process is being undertaken by Aluminium Pechiney (AP) to identify suitable international locations for constructing and operating an aluminium smelter. This document provides a brief overview of this process, and has been prepared to inform the Environmental Impact Assessment (EIA) being followed for the proposed smelter site at Coega, South Africa.

2. International site identification

AP has identified 11 potential sites located in:
- Southern Africa
- Australia
- North America
- Central America
- South America
- Arabian gulf.

Each of these sites has been subjected to an initial screening process, based on available information and informed assumptions.

3. Initial site screening

The 11 potential sites were assessed using the following criteria:

**Main criterion: energy supply** (energy represents 1/3 of the operating cost).
- source (hydraulic, gas, other)
- size of the energy resources
- commercially available power (including aspects such as availability, security of supply and length of supply contract).

**Site**
- topography, ground quality, climate
- port and road infrastructure.

**Environment**
- flora and fauna impact
- existing situation (other industry in the area)
- impact on employment
- social impact.

**Tax conditions**
- corporate tax, metal sale tax
- depreciation rules, exemptions.

**Raw materials and metal logistics**
- transportation cost
- market location, finished product grade and shape.

**Risks inherent to the country**
- political stability
- safety of people and goods.
4. Incorporation of environmental factors into the screening process

AP uses a model whereby they convert the above factors into costs, which are then used as a basis for comparing the sites. The model was designed with reference to European standards and has been customised for each of the 11 sites.

Four potential site-specific costs are considered in this model:
- Estimated local unit costs (construction, operation)
- Land, utilities access
- Port equipment
- Environment.

The economic assessment is a live matrix. It is updated regularly with the results of site engineering studies, signed contracts, and negotiations with authorities, service providers and other key players.

**Economic Assessment Matrix: Potential Environmental Costs**

<table>
<thead>
<tr>
<th>COST REFERENCE</th>
<th>POTENTIAL SITE-SPECIFIC COSTS RELATED TO THE ENVIRONMENT (noting how the Coega site compared to other sites)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct investment cost adapted to the site</td>
<td>– Not applicable, as this only applies to “Estimated local unit costs” for construction and operation.</td>
</tr>
<tr>
<td>Additional investment cost specific to each site</td>
<td>– Land expropriation: The Coega site compared favourably because the Coega Development Corporation (CDC) has already completed a Rezoning EIA and will be responsible for the expropriations required to establish the Industrial Development Zone (IDZ). – Relocation of flora and fauna: At Coega the risks to AP are reduced as the CDC will provide AP with a cleared site and be responsible for managing flora and fauna relocations from this site.</td>
</tr>
<tr>
<td>Operating cost adapted to the site</td>
<td>– Not applicable, as this only applies to “Estimated local unit costs” for construction and operation.</td>
</tr>
<tr>
<td>Additional operating cost specific to each site</td>
<td>– Specific raw materials: The type and quality of raw materials used lead to different emissions levels, eg for SO₂. At Coega, there is currently no competition from other heavy industry for SO₂ emissions. If AP needed to purchase raw materials with lower sulphur content, then this would add additional costs to the Coega site. If a new tenant arrived who needed a significant SO₂ emission allocation, then AP may need to enter into an agreement with the tenant/CDC on how to share costs. – Special surveys and monitoring: The types of additional monitoring studies and the costs involved will be quantified during the EIA and EMP for the Coega site. For example, this is expected to include requirements for monitoring of atmospheric emissions.</td>
</tr>
<tr>
<td>Raw material and finished goods logistics cost</td>
<td>– Not applicable, as this only applies to “Port Equipment”.</td>
</tr>
<tr>
<td>Additional construction time specific to each site</td>
<td>– EIA lead time: This risk is reduced for AP by the signing of the EIA contract with CSIR, which quantifies EIA costs and presents a nine month timeframe for the completion of the EIA. Agreement from the relevant authority on aspects such as the Plan of Study for Scoping will further reduce this risk. – Specific difficulties with local Interested and Affected Parties (I&amp;APs). The public participation process for the Coega EIA includes activities designed to manage this risk.</td>
</tr>
</tbody>
</table>
5. Status of site selection process to date (March 2002)

At present, all 11 sites are still considered as potential sites. Ongoing negotiations and investigations are underway to source additional information to enable AP to select their preferred site.

The above analysis led to more detailed investigations of three of the preferred sites. These are:

- Coega, South Africa
- Australia
- Argentina.

For these three sites, AP commenced with site engineering studies to obtain accurate figures that can be used in their economic model, in order to check the assumptions.

Due to recent economic instability in Argentina, the more detailed studies for this site were stopped. At present, engineering, planning and environmental studies are underway at the South African and Australian sites, with the intention of reaching a decision on the preferred site as soon as strategic agreements are reached.

As mentioned above, the main criterion in site selection is the energy supply and pricing agreement. For the Coega site, significant progress was made when an agreement of this nature was been reached between AP and Eskom in March 2002.