











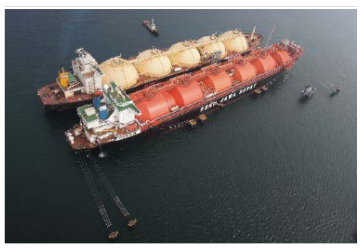



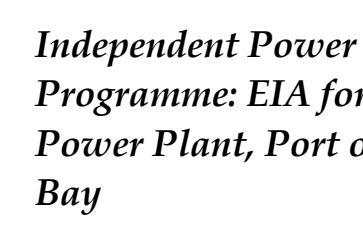
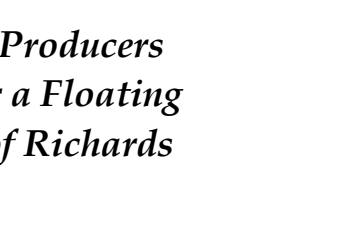

Independent Power Producers Programme: EIA for a Floating Power Plant, Port of Richards Bay

Draft Scoping Report

Department of Energy

November 2015

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Independent Power Producers Programme: EIA for a Floating Power Plant, Port of Richards Bay

Draft Scoping Report
[Draft Report]

Document Code: 0320839

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Client:	Project No:
Department of Energy	0320839
Summary and version history: V1 The scoping phase of the Independent Power Producers Programme: EIA for a Floating Power Plant, Port of Richards Bay is designed to determine the "scope" of the subsequent Environmental Impact Assessment (EIA), conducted in fulfilment of the application for Environmental Authorization. To this end, the Scoping Report includes a Plan of Study for EIA that provides scopes of work for more detail specialist investigations to address key issues of concern, together with the impact assessment methodology and timeframes for the EIA.	Date: 10 November 2015 Approved by: 

1	Draft Scoping Report	SG	DD, SHC	SHC	13/11/15
	Compiled by: Stephanie Gopaul Reviewed by: Debbie Donkin and Nadia Mol	By	Checked	Approved	Date

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Public

Government

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1 INTRODUCTION

1.1 OVERVIEW

The National Development Plan (NDP) identifies the need for South Africa to invest in a strong network of economic infrastructure designed to support the country's medium- and long-term economic and social objectives. This requires the development of 10,000 MW of additional electricity capacity to be established by 2025. To achieve this, the Department of Energy (DoE) has developed a 20-year energy plan for South Africa, the Integrated Resources Plan 2010-2030 (IRP) (DoE, 2011), which encourages the participation of independent power producers (IPPs) in electricity generation in South Africa.

The Independent Power Producers (IPP) Office was established by the DoE, the National Treasury and the Development Bank of Southern Africa (DBSA) to facilitate the involvement of IPPs in the generation of electricity. The IPP Office has to date successfully procured 6,327 megawatts (MW) under the Renewable Energy IPP Procurement Programme. It is currently intended that a further 3,126 MW of new generation capacity will be generated from natural gas.

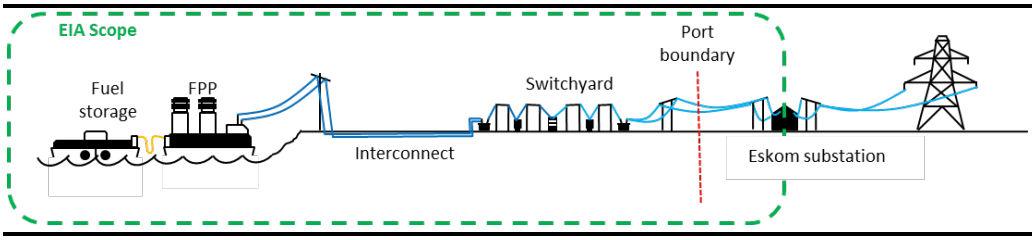
For the Gas IPP Procurement Programme, the DoE through the IPP Office has, in collaboration with Transnet, developed a two-phased approach. The first phase is to introduce Floating Power Plants (FPPs) in three of South Africa's commercial ports – Saldanha, Ngqura and Richards Bay, and/ or, an on-land early power project in Richards Bay IDZ, Saldanha Bay and Coega IDZ. The second phase is to facilitate the import of Liquefied Natural Gas (LNG) in the same three ports, to allow for the development of medium- to long-term gas power plants outside of the port boundaries.

Separate applications and studies are being undertaken by private parties for the medium- to long-term gas power plants and related infrastructure near the respective ports. Following a competitive bidding process to be conducted by the DoE through the IPP Office, the DoE plans to select only one of these parties to develop a gas power plant outside the ports' boundaries. The competing bidders need to conduct EIAs for their respective project proposals.

This EIA focusses on Phase 1 of the DoE's Gas to Power Programme i.e. the Floating Power Plant solution in the Port of Richards Bay. In order to meet the immediate demand for power, the DoE proposes to establish a Floating Power Plant (FPP- which will either be a barge or ship), which would produce up to 820 MW, in the Port of Richards Bay. The power precinct may be made up of a number of FPP units and there may be a phased build-up of FPP units (more than one FPP) as they become available and until the full capacity of 820 MW is reached. Power will either be evacuated to the Bayside substation approximately 2.5 km away or the Impala substation. The Eskom grid currently has the capacity to accept the proposed additional 820 MW of

power. Refer to *Figure 1.1* for an indicative illustration of the FPP and the components falling within the scope of this EIA.

Figure 1.1 ***An illustration of the proposed FPP and the associated infrastructure required to supply power into the national grid***



Transnet SOC Ltd together with the Transnet National Port Authority (TNPA) (the operating division responsible for management of the Port of Richards Bay), support this initiative and facilitated the site selection process within the Port.

In addition to the proposed FPP within the Port of Richards Bay, the development is also proposed in the Ports of Saldanha and Ngqura; for which separate EIA processes are underway. Environmental Resources Management Southern Africa (ERM) has been appointed by the DoE to conduct the Environmental Impact Assessment (EIA) process in terms of the National Environmental Management Act (Act No. 107 of 1998, as amended) for the project within the Port of Richards Bay.

1.2 PURPOSE OF THIS REPORT

This Scoping Report has been compiled as part of the EIA process in accordance with the regulatory requirements stipulated in the EIA Government Notice Regulations (GNR 982) promulgated in terms of Section 24(5) of the National Environmental Management Act (NEMA) (Act No. 107 of 1998), as amended.

A typical EIA is usually undertaken in three phases namely Scoping Phase, Specialist Study Phase and Impact Assessment. This Scoping Report was completed after the first phase of the study and documents the findings of the Scoping Phase. Objectives of the Scoping Study are to identify the potentially significant environmental and social issues relating to the establishment/ construction, operation and decommissioning of the proposed development that will need to be addressed as part of the EIA. This was done through desktop review of available project and baseline information, initial engagement with key stakeholders (and other public consultation initiatives) as well as a site reconnaissance.

Copies of the draft Scoping Report will be made available for public comment for a period of 30 days. The comments will be addressed in a Comments and Responses Report which will be included in the final Scoping Report submitted to the National Department of Environmental Affairs (DEA) for review.

The Scoping Report includes a description of the proposed project infrastructure and activities, alternatives considered, and the EIA methodology. A description of the stakeholder engagement process and the key issues raised by stakeholders through the consultation activities are also presented. These issues have informed the development of the Plan of Study for EIA which includes the detailed studies to be undertaken as part of the specialist studies phase.

2 PROJECT MOTIVATION

The aim of the Floating Power Plant project is to assist with meeting South Africa's immediate electricity demands with minimal new infrastructure build.

In terms of the EIA Regulations, when considering an application, the relevant competent authority must take a number of factors into consideration, including the need for, and desirability of, the activity. The need and desirability of this project is discussed below including strategic plans, frameworks and policies applicable to the area and project.

2.1.1 Need and Desirability

South Africa's Energy Crisis

Economic growth and electricity consumption have outpaced power system capacity building in South Africa over the last 20 years (IPP Projects, n.d.). As a result the country has been experiencing severe electricity supply constraints since 2008. To maintain system stability, a schedule of rolling black outs have been instituted, but with dire implications for the stressed economy (IPP Projects, n.d.).

The Department of Energy is looking at various options to alleviate the crisis, including through increasing and accelerating the participation of Independent Power Producers (IPPs) in the energy sector. It is envisaged that the Independent Power Producers Procurement Programme (IPPPP) will be used as a tool for the Department of Energy to address urgent power infrastructure development needs of the country (IPP Projects, n.d.). The objectives of the programme include the following key aspects:

- Early power generation using technology fuelled initially by liquid fuel but which can convert to gas utilisation;
- Timely, reliable and affordable power and gas;
- Delivery and funding through the private sector;
- Minimising the burden on the National balance sheet;
- Ensuring that actions facilitate the longer term development of the power and gas industry in South Africa – providing an anchor demand for gas and stimulating economic growth; and
- Having appropriate involvement and participation of South Africa State.

Notwithstanding the broader long term objectives, given the current energy shortage, the Department of Energy recognises the need to fast-track the early power projects from all economically viable generation sources and this should be done on a "least regrets" basis, that is, to avoid foreclosing on longer term power generation options.

Electricity Supply vs Demand

The National Development Plan (NDP) is a long term development plan (2030) which aims to to eliminate poverty and reduce inequality by growing an inclusive economy, building capabilities, enhancing the capacity of the state, and promoting leadership and partnerships throughout society (RSA, 2012). The NDP requires the development of 10,000 MW additional electricity capacity to be established by 2025 against the 2013 baseline of 44,000 MW (IPP Projects, n.d.). This plan presents the overall national specific power generation plan.

In addition to the NDP, an Integrated Resource Plan (IRP) has been developed. This plan outlines the preferred energy mix with which to meet the electricity needs over a 20 year planning horizon to 2030 (IPP Projects, n.d.). In terms of gas power the IRP (2010) highlights the necessity of commissioning 2,370 MW with Combined Cycle Gas Turbines (CCGT) technology and 3,910 MW with Peak-Open Cycle Gas Turbine (OCGT) technology by the end of 2030.

In May 2011, the DoE gazetted the Electricity Regulations on New Generation Capacity (New Generation Regulations) under the Electricity Regulation Act (ERA, Act No 4 of 2006). The ERA and Regulations enable the Minister of Energy (in consultation with the National Energy Regulator of South Africa (NERSA)) to determine what new capacity is required. Ministerial determinations give effect to components of the planning framework of the IRP (IPP Projects, n.d.).

On 19 December 2012, the Minister of Energy issued three determinations in terms of Section 34 of the Electricity Regulation Act:

- IPP Procurement Programme (IPPPP) (2012) published in Government Notice (GN) 1074 in Government Gazette No. 36005;

- Baseload IPP Procurement Programme (2012) published in GN 1075 in Government Gazette No. 36005; and

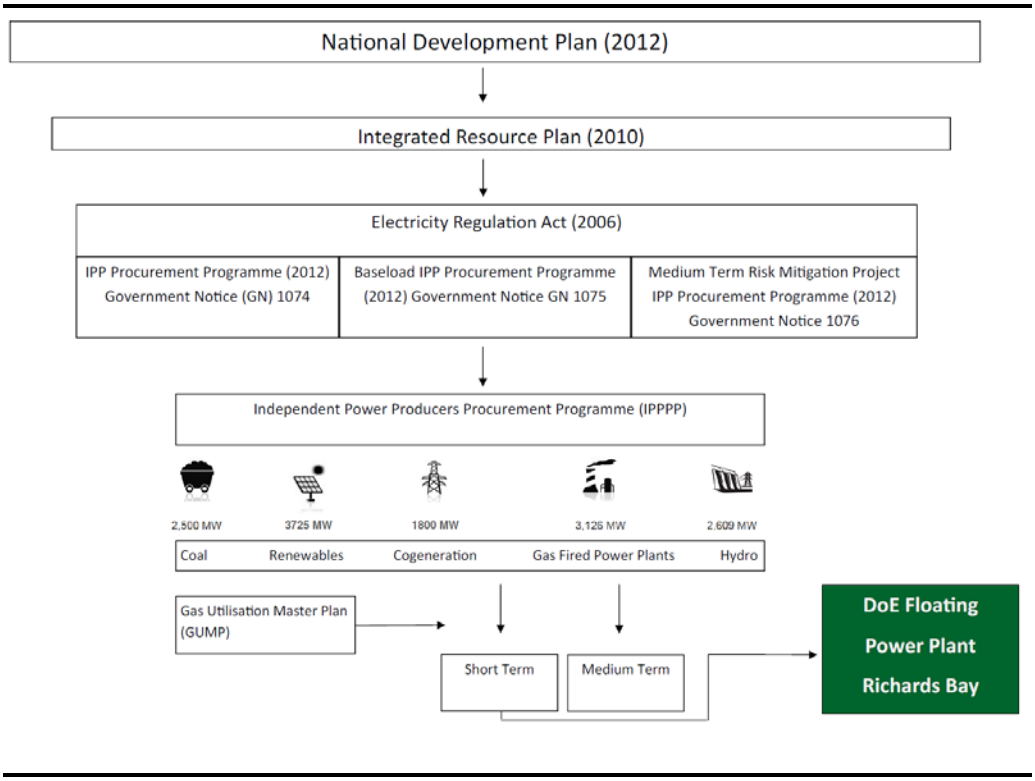
- Medium Term Risk Mitigation Project IPP Procurement Programme (2012) published in Government Notice 1076 in Government Gazette No. 36005.

The above determinations specify that new generation capacity should be procured from hydro, coal and gas sources to support South Africa's baseload energy mix and generation from gas and cogeneration as part of the medium-

term risk mitigation project programme. The Gas to Power Programme (amongst other initiatives) gives effect to the IRP 2010 and the development of the gas sector. In addition, and in order to support this objective of the IRP 2010, the DoE is in the process of finalising the Gas Utilisation Master Plan (GUMP), which is a roadmap for the development of a gas economy.

The IPPPP states that 3,126 MW of baseload energy generation capacity is needed from gas-fired power generation to contribute towards energy security (*Figure 2.1*). The Gas to Power Request for Information (RFI) was released in May 2015 and responses to the RFI will be used to design the Gas to Power programme. The Gas to Power RFQ (initial qualification round) for the medium term option is expected in late 2015 and the RFP in mid-2016.

Figure 2.1 Breakdown of the Gas to Power Programme and Legislative Basis



Current Spatial Development Frameworks (SDFs)

According to the uMhlathuze Municipality SDF review (2013/2014)[1], a key component of the uMhlathuze SDF is the Port Development Framework, as developed by the Transnet National Ports Authority (TNPA). The Municipality is therefore aligning its spatial planning to the Port Development Framework and, has an extended planning horizon applicable to its SDF.

Richards Bay is classified as a Primary Node and is regarded as the fastest developing industrial centre in South Africa due to the following:

- Centres of employment, industrial, residential, mining, offices, eco-tourism, nature reserve and commercial activity;
- It is well positioned to take full advantage of the export of manufactured goods and raw materials & minerals to Africa and the rest of the World;
- It functions as a major link to the world economy through the Richards Bay Harbour;
- It plays a dominant role in KwaZulu-Natal, especially within the commercial and industrial Sector;
- It plays a major role in the regional economy as a service centre (industrial, retail, commercial, business, transportation, administrative and office core, etc.).

The proposed FPP is in accordance with the current district and local municipal plans for development and is in alignment with TNPA's port development plans.

2.2 *THE PROPONENT*

The DoE was established shortly after the Minister of Energy was appointed on 10 May 2009. According to the Department's Strategic Plan[2], the DoE is mandated to ensure secure and sustainable provision of energy for socio-economic development, by developing an Integrated Resource Plan (IRP) for the entire energy sector and promoting investment in accordance with the IRP which focuses on energy.

The energy sector is regulated by the following primary Acts (but not limited to) and reflects the legislative measures that the DoE has instituted:

[1] uMhlathuze Local Municipality: (Draft) SDF Review 2013/2014

[2] Department of Energy. Strategic Plan, 2015-2020. Accessed via: http://www.energy.gov.za/files/au_frame.html; 16.09.2015.

- The National Energy Act, 2008 (Act No. 34 of 2008);
- The Petroleum Products Act, 1977 (Act No. 120 of 1977), as amended; and
- The Electricity Regulation Act, 2006 (Act No. 4 of 2006), as amended.

The contact details for the applicant are presented below:

Box 2.1 ***Contact Details of the Applicant***

Department of Energy

Contact:
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It should be noted that while the DoE is the applicant for the EIA, this Environmental Authorisation will need to be transferred into the preferred bidder(s) name.

2.3 THE EIA TEAM

ERM was appointed by the DoE to undertake the EIA process for this project as well as the EIA for the following Gas to Power Programme components:

- On land early power plant in Richards Bay;
- LNG Import Terminal in the Port of Richards Bay;
- Floating Power Plant in the Port of Saldanha; and
- LNG Import Terminal in the Port of Saldanha.

ERM is a global environmental consulting organisation employing over 5,000 specialists in over 150 offices in more than 40 countries. In South Africa, ERM Southern Africa employs over 150 environmental consultants out of offices in Johannesburg, Durban and Cape Town.

The requirement for environmental consultants to act independently and objectively is a well-established principle in South African law and elsewhere. The EIA regulations (GN R.543), specifically state:

"that an EAP (environmental assessment practitioner) (must have) no business, financial, personal or other interest in the activity, application or appeal in respect of which that EAP is appointed in terms of these Regulations other than fair remuneration for work performed in connection with that activity; or that there are no

circumstances that may compromise the objectivity of that EAP in performing such work."

ERM have no financial ties to, nor are they a subsidiary, legally or financially, of the DoE. Remuneration for the services by the DoE in relation to this EIA is not linked to an approval by the decision-making authority. Furthermore, ERM has no secondary or downstream interest in the development.

The role of the environmental consultants is to provide credible, objective and accessible information to government and other stakeholders, so that an informed decision can be made about whether the project should proceed or not.

The ERM team selected for this Project possess all the relevant expertise and experience to undertake this EIA. As such, ERM has signed the legally required declaration of independence to function as an objective Environmental Assessment Practitioner (EAP). The relevant CVs and details of the Independent Environmental Practitioner are presented in *Annex A*.

The contact details of the EAP for the application are presented in *Box 2.1*.

Box 2.2 ***Contact Details of the EAP***

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The core EIA team members involved in this EIA are listed in *Table 2.1*.

Table 2.1 ***The EIA Core Team***

Name	Role	Qualifications, Experience
Stuart Heather-Clark	Partner in Charge	BSc., Mphil. >20 years
Debbie Donkin	Project Manager	BSc.(Hons), MSc., 15 years

2.4 *UNDERTAKING BY EAP*

Based on the preliminary project description and outcomes of the scoping phase, no fatal flaws have been identified thus far. ERM is of the opinion that

the proposed project should proceed to the EIA phase where the potential impacts identified in the Scoping Report will be assessed in sufficient detail and the significances thereof will be determined.

ERM believes that the information provided in this Scoping Report is the most recent detail provided by the proponent and specialists thus far. Due to certain information gaps and investigations into project design detail, the Rochdale Envelope approach was used (as described in Section 8).

ERM affirms that the stakeholder engagement process followed to date has been transparent and comments and inputs received from the I&AP, public and Government spheres will be included in the Comments and Responses Report and addressed as part of the EIA if necessary.

2.4.1 *Declaration of independence*

We declare that ERM have no financial or personal interest in the proposed development, nor its developers or any of its subsidiaries, apart from in the provision of environmental management consulting services.

2.5 *SCOPING REQUIREMENTS AS PER EIA REGULATIONS 2014*

Table 2.2 illustrates the legislated content of the Scoping Report.

Table 2.2 Legislated Content of Scoping Report (GNR 982) and Corresponding Sections in this Report

Legislated Content- Appendix 2 Section 2	Section in this Report
(a) details of-	
(i) the EAP who prepared the report	*Chapter 1*
(ii) the expertise of the EAP, including a curriculum vitae	*Chapter 1 and Annex A*
(b) the location of the activity (i) the 21 digit Surveyor General code of each cadastral land parcel; (ii) where available, the physical address and farm name; (iii) where the required information in items (i) and (ii) is not available, the coordinates of the boundary of the property or properties;	*Section 2.2*
(c) a plan which locates the proposed activity or activities applied for at an appropriate scale (including coordinates) (i) a linear activity, a description and coordinates of the corridor in which the proposed activity or activities is to be undertaken; or (ii) on land where the property has not been defined, the coordinates within which the activity is to be undertaken;	*Section 2.2*
(d) a description of the scope of the proposed activity, including-	
(i) all listed and specified activities triggered;	*Section 3.2*
(ii) a description of the activities to be undertaken, including associated structures and infrastructure	*Section 2.3*

Legislated Content- Appendix 2 Section 2	Section in this Report
(e) a description of the policy and legislative context within which the development is proposed including an identification of all legislation, policies, plans, guidelines, spatial tools, municipal development planning frameworks and instruments that are applicable to this activity and are to be considered in the assessment process	*Chapter 3*
(f) a motivation for the need and desirability for the proposed development including the need and desirability of the activity in the context of the preferred location;	*Section 2.2.1*
(h) a full description of the process followed to reach the proposed preferred activity, site and location within the site, including	
(i) details of all the alternatives considered;	*Section 3.8*
(ii) details of the public participation process undertaken in terms of regulation 41 of the Regulations, including copies of the supporting documents and inputs;	*Section 5.2.3 and Annex B*
(iii) a summary of the issues raised by interested and affected parties, and an indication of the manner in which the issues were incorporated, or the reasons for not including them;	*Chapter 5 and CRR*
(iv) the environmental attributes associated with the alternatives focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects;	*Chapter 4*
(v) the impacts and risks identified for each alternative, including the nature, significance, consequence, extent, duration and probability of the impacts, including the degree to which these impacts- (aa) can be reversed; (bb) may cause irreplaceable loss of resources; and (cc) can be avoided, managed or mitigated.	*Chapter 2*
(vi) the methodology used in determining and ranking the nature, significance, consequences, extent, duration and probability of potential environmental impacts and risks associated with the alternatives	*Chapter 2*
(vii) positive and negative impacts that the proposed activity and alternatives will have on the environment and on the community that may be affected focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects	*Chapter 2*
(viii) the possible mitigation measures that could be applied and level of residual risk	*Chapter 2*
(ix) the outcome of the site selection matrix	*Chapter 2*
(x) if no alternatives, including alternative locations for the activity were investigated, the motivation for not considering such	*Chapter 2*
(xi) a concluding statement indicating the preferred alternatives, including preferred location of the activity	*Chapter 2*
(i) a plan of study for undertaking the environmental impact assessment process to be undertaken, including-	
(i) a description of the alternatives to be considered and assessed within the preferred site, including the option of not proceeding with the activity	*Chapter 7*
(ii) a description of the aspects to be assessed as part of the environmental impact assessment process;	*Chapter 7*
(iii) aspects to be assessed by specialists;	*Chapter 7*
(iv) a description of the proposed method of assessing the environmental aspects, including a description of the proposed method of assessing the environmental aspects including aspects to be assessed by specialists	*Chapter 7*
(v) a description of the proposed method of assessing duration and significance	*Chapter 7*

Legislated Content- Appendix 2 Section 2	Section in this Report
(vi) an indication of the stages at which the competent authority will be consulted;	*Chapter 7*
(vii) particulars of the public participation process that will be conducted during the environmental impact assessment process;	*Chapter 7*
(viii) a description of the tasks that will be undertaken as part of the environmental impact assessment process;	*Chapter 7*
(ix) identify suitable measures to avoid, reverse, mitigate or manage identified impacts and to determine the extent of the residual risks that need to be managed and monitored.	*Chapter 7*
(j) an undertaking under oath or affirmation by the EAP in relation to	
(i) the correctness of the information provided in the report	*Chapter 2.4*
(ii) the inclusion of comments and inputs from stakeholders and interested and affected parties	*Chapter 2.4*
(iii) any information provided by the EAP to interested and affected parties and any responses by the EAP to comments or inputs made by interested or affected parties	*Chapter 2.4*
(k) an undertaking under oath or affirmation by the EAP in relation to the level of agreement between the EAP and interested and affected parties on the plan of study for undertaking the environmental impact assessment;	*Chapter 2.4*
(l) where applicable, any specific information required by the competent authority	
(m) any other matter required in terms of section 24(4) (a) and (b) of the Act.	

2.6 *REPORT STRUCTURE*

The structure of the remainder of this Report is as follows:

- Chapter 2: Project Motivation
- Chapter 3: Project Description
- Chapter 4: Legal and Policy Framework
- Chapter 5: Environmental and Social Baseline
- Chapter 6: EIA Process
- Chapter 7: Identification of Potential Impacts
- Chapter 8: Plan of Study for EIA
- Chapter 8: Conclusion and Way Forward

The Report is supported by the following annexes:

- Annex A: Details of Environmental Assessment Practitioner (including CVs)

- Annex B: Stakeholder Engagement
  - B1 - I&AP Database

  - B2 - Initial Notification Material
    - B2.1 - Notification
    - B2.2 - Adverts
    - B2.3 - Background Information Document

- B3 - Open House meeting
    - B3.1 - Attendance register
    - B3.2 - Presentation

- B4 – Comments and Response Report

- B5 – Initial Key Informant Meetings
    - B5.1 - Richards Bay IDZ
    - B5.2 - Transnet Ports Authority
    - B5.3 - uMhlathuze Local Municipality
    - B5.4 - Ezemvelo KZN Wildlife

- B5 – Initial Key Informant Meetings

3 PROJECT DESCRIPTION

The project description is based on a generic project and not on a specific developer's technology choice as outlined in Chapter 1. Due to the uncertainty associated with the competitive bidding process, the approach to the EIA process will be to consider the "most probable worst case" scenarios for each issue identified during the Scoping Phase and then carry this through to the EIA Phase. The mitigation measures will therefore be structured to be broad enough to accommodate all the various technologies that may be included in the IPP bidding process.

3.1 PROJECT INFRASTRUCTURE

Floating Power Plants are special purpose marine vessels which incorporate power generation equipment and only require a land-based switchyard to distribute power to a substation. The proposed Floating Power Plant Project has both land-based (terrestrial) and marine-based components, including the following:

- Floating Power Plant which may be a power barge or a self-propelled power ship (marine);
- Mooring infrastructure in the form of anchors, dolphin structures and a piled temporary access jetty;
- Floating fuel storage facilities (marine);
- Connection of the fuel storage facility to the Floating Power Plant for the transfer of liquid fuel/gas on board (marine);
- Underground or aboveground power lines connecting the Floating Power Plant to a terrestrial switchyard ;
- Transmission line from the switchyard to a substation for distribution into the national power grid (terrestrial).

Several Floating Power Plants could be moored within the port of Richards Bay depending on the power generation capacity, the capacity of the relevant substation to distribute this power and space available at the identified mooring location. There is currently 820 MW capacity available at the Bayside substation.

The Floating Power Plant will be powered by liquid fuel and may be converted to a gas powered facility at a later date. Fuel is typically supplied from a bunker barge or tanker vessel moored close to the Floating Power

Plant. Refuelling the fuel storage vessel typically takes place once a week via a fuel supply vessel. The Floating Power Plant will operate 24 hours per day for 365 days per year.

Power would be evacuated via a switchyard and a 132 kV transmission line (approximately 2.5 km) to the Bayside or Impala substation, both of which are managed by Eskom.

3.2 PROJECT LOCATION

The FPP is to be moored opposite the 600 berth series within the Port of Richards Bay (*Figure 3.1*). The majority of the transmission line (depicted by the yellow line in *Figure 3.1)* will be routed within the port boundary (depicted by the red dashed line) before crossing onto the South 32 site to connect with the Bayside substation (depicted by the blue block). (The Richards Bay Industrial Development Zone (IDZ) is currently in negotiations with South 32 to acquire the site for incorporation into the IDZ.)

Figure 3.2 illustrates the potential configuration of the FPP units, the associated refuelling barges and the interconnect lines leading from the units to the switchyard.

Figure 3.1 Location of the proposed FPPP within the Port of Richards Bay

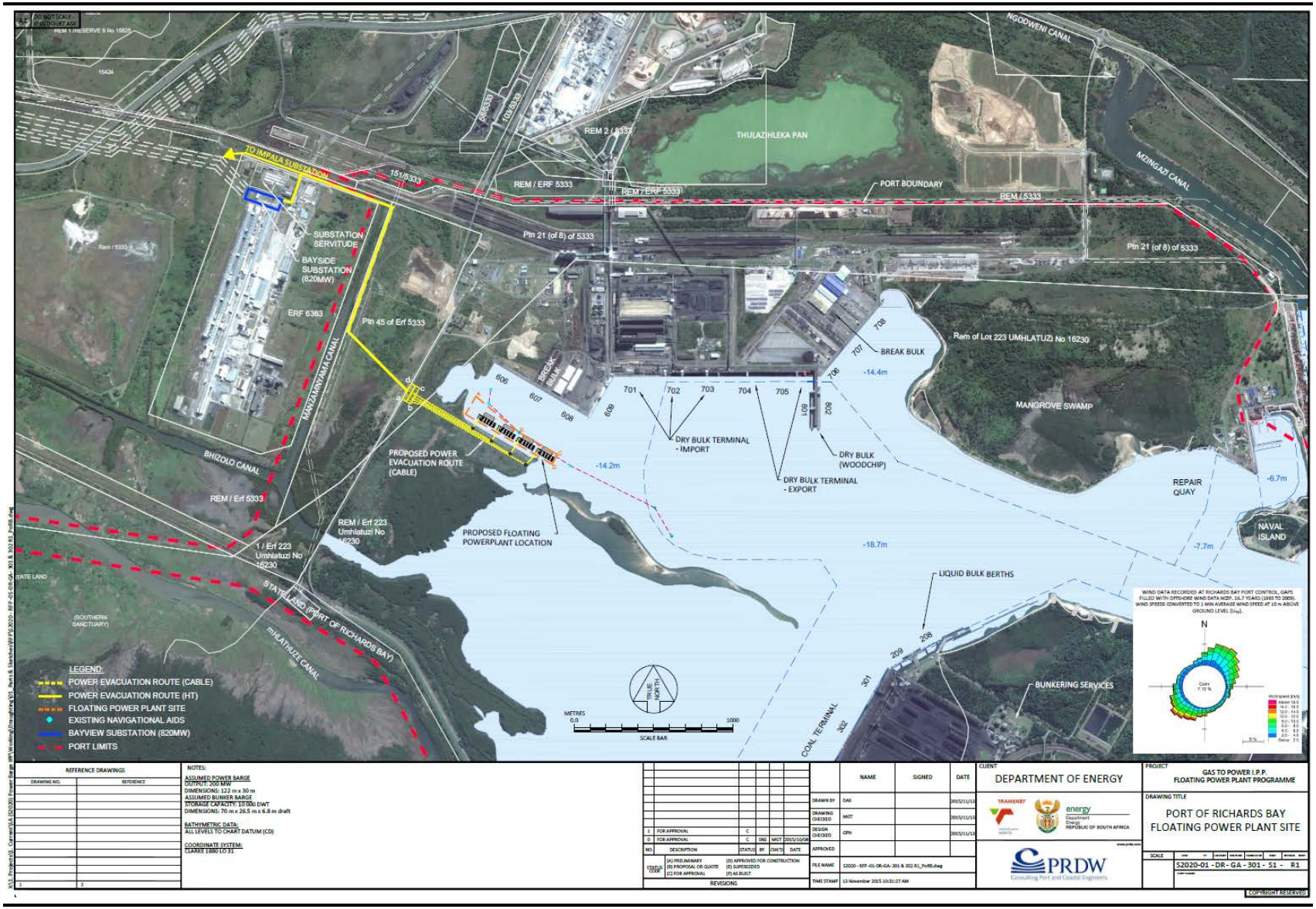
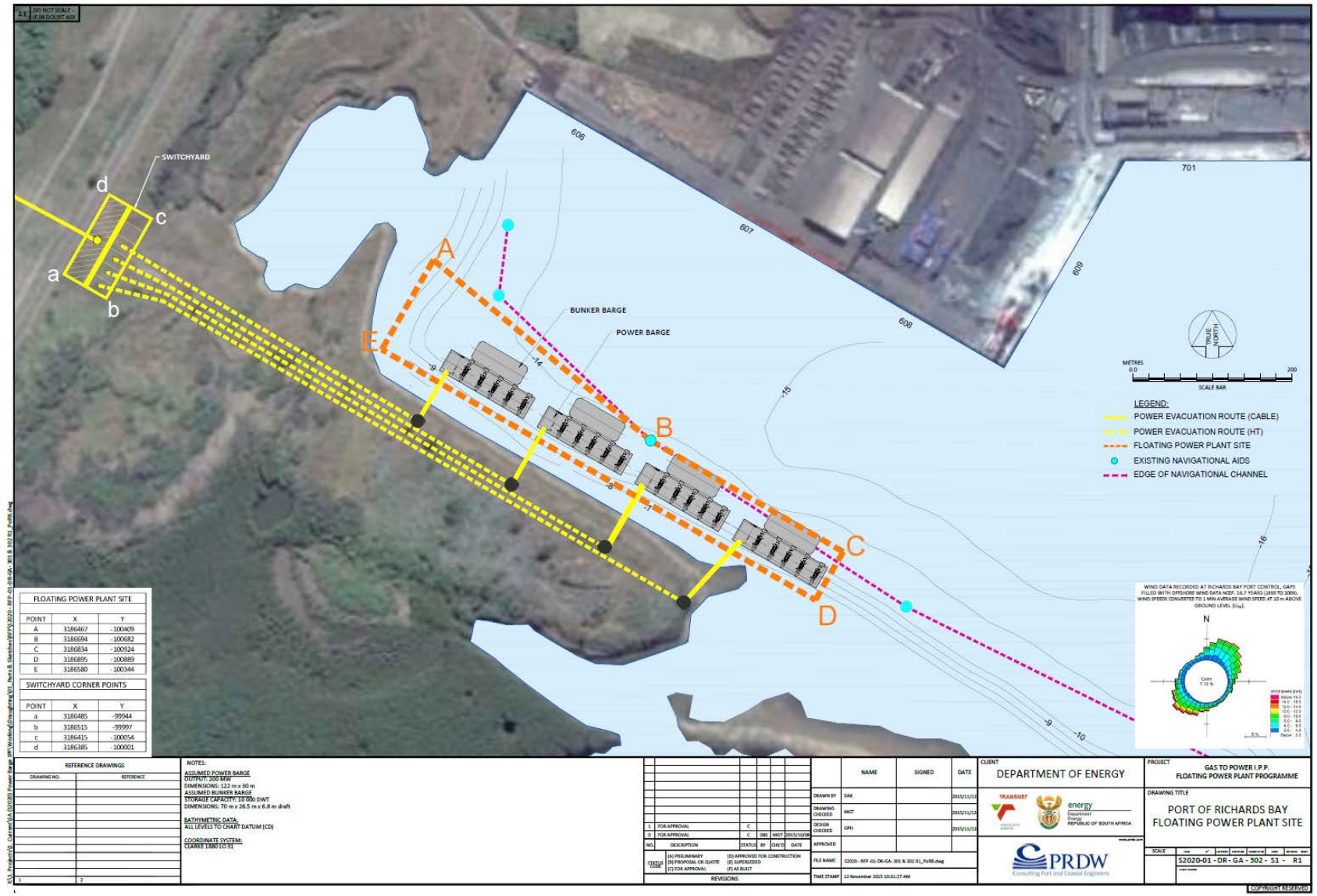


Figure 3.2 *Potential configuration of the FPPs and refuelling barges*



3.3 TERRESTRIAL COMPONENTS

3.3.1 Mooring Facilities

At the request of TNPA no existing berthing infrastructure will be used for the proposed project. The FPP will therefore require its own mooring system. The required mooring infrastructure will need to be provided by the successful IPP(s).

No dredging will be required at the selected mooring site. As the FPP will not be moored against existing infrastructure, marine access will be required, the FPP operator may thus provide a temporary access jetty.

3.3.2 Power evacuation and transmission lines

An interconnect line (either cables or overhead lines) will connect the FPP to a switchyard and from there via transmission lines into the main national grid. The connection to the national grid will be through the Bayside substation which has an available capacity limit of 820 MW.

The purpose of the switchyard is to connect or disconnect the barges from the grid. If there is a failure between the barges and the grid, this failure must be disconnected from the grid, hence this switchyard needs to be close to the grid connection point. The switchyard may also be responsible for synchronization, if there is no device at the barges. Depending on the numbers of barges (generators) and grid lines, the switchyard can be used to assign the generators to specific grid lines and balance the grid load. The switchyard is usually used by the grid operator for measurement and billing purposes.

From the switchyard, power will be evacuated via a 132 kV overhead line over a distance of approximately 3 km to the Bayside substation (*Figures 3.1* and *3.2*).

3.4 MARINE COMPONENTS

3.4.1 Floating Power Plant

Floating Power Plants are special purpose marine vessels which are self-contained power generation resources which only require a land-based transformer connection to produce and distribute power. The generating capacity of the FPPs is likely to be between 50 and 500 MW. FPPs use either many engines or a few gas turbines to provide peaking or base load power. The FPPs will have duel fuel capability technology (either engines or turbines), that can run either on liquid fuels or gaseous fuels. As there is currently no LNG infrastructure within the Port, it is anticipated that FPPs will initially be fuelled with imported liquid fuel such as distillate fuel oils or residual fuel oils or LPG (for more details refer to Section 3.4.2) until LNG

facilities are developed. The FPP will operate on a base load [1]to mid-merit basis [2]with the load factor being highest in the earlier years of operation.

Floating Power Plants are considered to be a good option for addressing energy shortages within the country as they have relatively short construction periods (generally < 12 months) and require a very small terrestrial footprint (land requirements are reduced). The FPP will be owned and operated by a third party Independent Power Producer (IPP) for a proposed duration of five (5) to 15 years. The FPP will operate 24 hours per day for 365 days per year.

3.4.2 Fuel Type, Storage and Supply

The Floating Power Plant will be powered by liquid fuel (brought in with liquid bulk tankers) and may be converted to a gas powered facility at a later date. While there are existing local fuel storage facilities/ suppliers in the port, the individual IPP(s) would need to contract with these suppliers to obtain fuel.

Depending on the technology and/or type of FPPs used, the FPPs may or may not have on-board fuel storage facilities. Fuel will be brought in with a liquid bulk tanker, although the Port currently has a bunkering service and a bunker terminal (JBS-ENGEN) that could assist with fuel storage if needed. Again, this would need to be negotiated by the respective IPP(s).

The tanker will berth at one of the available TNPA berths. Fuel will then be transferred from the tanker to the bunker barge. The bunker barge will need to leave its moorings and berth alongside the tanker for refuelling. The size of the liquid bulk tanker will be dependent on the source of the fuel, and will either be from a local or international port of origin.

The FPP will initially be fuelled with an imported liquid fuel such as:

- LPG – Liquefied petroleum gas;
- MGO - Marine gas oil;
- MDO - Marine diesel oil;
- IFO 180 - Intermediate fuel oil with maximum viscosity of 180 Cs (<3.5% sulphur).

Should a LNG import terminal be developed in the port, then gas may be used at a later stage as it is a cleaner more cost effective fuel.

A FPP generating 500MW (100% dispatch and 40% efficiency) is expected to burn approximately 70, 000 to 80, 000 tpm (tonnes per month) of fuel based on the specific fuel type.

[1] Base load is defined as the minimum level of demand on an electrical supply system over 24 hours. Base load power sources are those plants which can generate dependable power to consistently meet demand.

[2] Mid-merit is defined as the power supply that fills the gap between peak load and base load where peak load is the maximum level of power demand.

The frequency of refuelling is dependent on the type of fuel, the power generation capacity of the FPP, its storage volume, the power generation load (from peaking power to 100% baseload) and the type of engine utilized. A re-supply schedule of vessels calling once a week will require a storage vessel to hold 16, 000 t of fuel. Refuelling the fuel storage vessel typically takes place once a week via a fuel supply vessel.

3.5 EMISSIONS

Emissions from the FPP could result from a number of sources and depend on the fuel used to generate power. A summary of typical emissions that can be expected is shown in *Table 3.1*:

Table 3.1 Typical Emissions from a FPP

SOURCE	FUEL	
	HFO, Diesel	LPG, LNG, CNG
Power Generation	SO_2, NO_x, particulates, VOC including benzene, CO and CO_2	NO_x, CH_4, CO and CO_2
Power Vessel Engines	SO_2, NO_x, particulates, VOC including benzene, CO and CO_2	Not applicable
Support Ship	SO_2, NO_x, particulates, VOC including benzene, CO and CO_2	Not applicable
Fuel Storage	VOC including benzene	CH_4

3.6 DISCHARGE OF HEATED WATER

Open cycle units (engines or turbines) require limited cooling (water or air cooled). Combined cycle units (engines or combined cycle gas turbines (CCGT)) will require significant cooling, resulting in significant infrastructure. Although more efficient, it is unlikely that CCGT will be used for this project.

The volume of water to be discharged and the expected temperature increases will depend on the technology used, as well as the amount of energy generated, and thus is unknown at this stage.

Seawater used in cooling cycles may be treated with biocides to prevent biofouling and marine growth.

3.7 WATER DEMAND

The FPP has limited fresh water demand. Most FPPs have desalination units and/or a source of water from condensate collected from inlet air refrigeration that can be used to supply the fresh water requirements. Should additional

freshwater be required, this may be obtained from either the TNPA or the local municipality, subject to availability and to a formal agreement with the relevant party. However, it is important to note that the Municipality is currently "water constrained" and the use of sea water (subsequent to appropriate treatment) may be an option considered by the IPP(s).

3.8 ALTERNATIVES

One of the objectives of an EIA is to investigate alternatives to the proposed project. In relation to a proposed activity **"Alternatives"** means different ways of meeting the general purposes and requirements of the proposed activity. Apart from the "no development" option, there are two types of alternatives - Fundamental Alternatives and Incremental (or development) Alternatives.

3.8.1 No Development Alternative

The no development option assumes the site remains in its current state, i.e. undeveloped and, no power generation takes place within the Port of Richards Bay. The no-go alternative will be used as a baseline throughout the assessment process against which potential impacts will be compared in an objective manner and assessed in the EIA.

3.8.2 Fundamental Alternatives

Fundamental alternatives are developments that are totally different from the proposed project and usually involve a different type of development on the proposed site, or a different location (outside of the Port) for the proposed development. In the case of a Floating Power Plant, it cannot include location alternatives (outside of the Port) as it needs to be moored within an existing Port (refer to Section 3.8.3 for siting alternatives considered within the Port). A number of Ports were considered by the engineering team together with TNPA and the Department of Energy. Some ports were ruled out based on insufficient space for the mooring of FPPs, extensive distances for power evacuation, limited available capacity at existing substations, close proximity to residential areas, etc. Thus it was determined that three ports were suitable for Floating Power Plants, including the Port of Saldanha, Port of Ngqura and the Port of Richards Bay.

Site alternatives for the proposed powerline route are limited by the start point (FPP), land ownership along the route, distance, and the selection of a substation that has capacity to accept the evacuated power. In Richards Bay, the route has been narrowed down to the Bayside or Impala substations (*Figure 3.2*).

A further fundamental alternative includes the type of activity to be undertaken, provided there are other options available to assess, other than the no-go option. Notwithstanding the broader long term objectives, given the current energy shortage, the Department recognises the need to fast-track the

short term power projects from all economically viable generation sources and this should be done on "least regrets" basis, that is, to avoid foreclosing on longer term power generation options. The options of wind and solar power projects, which require longer lead times to develop and cannot supply baseload demand, are therefore not considered to be viable alternatives.

3.8.3 Incremental Alternatives

Incremental alternatives are modifications or variations to the design of a project that provide different options to reduce or minimise environmental impacts. There are several incremental alternatives that will be considered during the EIR Phase of the project, including:

- The design or layout of the activity;
- The technology to be used in the activity;
- The operational aspects of the activity.

To date only alternatives related to the layout of the activity have been investigated. Within the Port of Richards Bay, six (6) probable sites for the location of the FPP were identified by PRDW (*Figure 3.3*). These sites were discussed at a Multi Criteria Analysis (MCA) workshop attended by PRDW, Transnet and the EAP, in order to establish which sites were considered to be reasonable and/or feasible alternatives.

The primary reasons for the exclusion of certain sites are listed below:

- Power evacuation routes (over undeveloped land) concern for Sites 2 and 6;

- Site 5 was removed from the MCA process as it requires occupation of an existing berth and therefore should not be considered based on the TNPA functional requirements;

- Site 3 due to a major concern in terms of the available space for interconnect route; and

- Areas close to the small craft harbour deemed more sensitive to noise.

The preferred site from the MCA process was Site 2 (positioned along the undeveloped area of the sand spit); however, Site 1 scored better regarding navigational requirements. Ultimately, Site 1A was proposed - Site 1A is Site 1 that was shifted south east opposite to berths 607 and 608 and outside of the navigational channel. A further reason for the selection of Site 1A as opposed to Site 2 was that there are environmental concerns related to potential impacts on sensitive species that inhabit the sand spit.

Figure 3.3 Alternative Siting Options assessed during the MCA

Source: PRDW, 2015

4 LEGAL AND POLICY FRAMEWORK

4.1 INTRODUCTION

This section provides an overview of legislation, guidelines and information documents that have informed the scope and content of this report and the approach to the EIA process.

4.2 ENVIRONMENTAL AUTHORISATION LEGISLATIVE PROCESS

The Environmental Authorisation process in South Africa is governed by the National Environmental Management Act (NEMA) (No. 107 of 1998) as amended and the Environmental Impact Assessment (EIA) Regulations of 2014 promulgated under NEMA. The relevance of this legislation is summarised below.

4.2.1 NEMA Environmental Authorisation

Chapter 5 of NEMA, as amended, outlines the general objectives and implementation of Integrated Environmental Management (IEM). This provides a framework for the integration of environmental issues into the planning, design, decision-making and implementation of plans and development proposals that are likely to have a detrimental effect on the environment. Whilst Section 23 sets out the basic objectives and principles of the IEM procedure, Section 24 sets out how these objectives and principles are to be accomplished.

Regulations governing the environmental authorisation process have been promulgated in terms of NEMA and include the following:

- Environmental Impact Assessment Regulations (GNR R982/2014);
- Environmental Impact Assessment Regulations Listing Notice 1 (GNR 983/2014);
- Environmental Impact Assessment Regulations Listing Notice 2 (GNR 984/2014); and
- Environmental Impact Assessment Regulations Listing Notice 3 (GNR 985/2014).

Activities that trigger GNR 983 and GNR 985 require a Basic Assessment Report (BAR) process to be undertaken, whereas activities identified in terms of GNR 984 will require a full Scoping and Environmental Impact Report (S&EIR) process. GNR 982 sets out the general procedure to follow when conducting either a BAR or S&EIR process.

Numerous trigger activities have been identified for this Project in terms of all the listing notices (*Table 4.1*). In instances where activities in all the listing

notices are triggered (as in this Project), GNR 984 requirements will take precedence and the Project will be subject to a full S&EIR process prior to commencement of any of the associated activities.

The National Department of Environmental Affairs (DEA) will be the competent authority for this project and as such, the *DoE* will be required to obtain a positive environmental authorisation from the DEA prior to commencement of any of these proposed activities.

Table 4.1 lists the potential permitting requirements for the Environmental Impact Assessment Regulations Listing Notice 1, 2, 3 of 2014 from NEMA.

Table 4.1 Environmental Permit Requirements from NEMA Listing Notices

Permit	Potential Trigger	Project Activity
Basic Assessment (EIA Regs Listing Notice 1)	11) The development of facilities or infrastructure for the transmission and distribution of electricity- (i) outside urban areas or industrial complexes with a capacity of more than 33 but less than 275 kilovolts; or (ii) inside urban areas or industrial complexes with a capacity of 275 kilovolts or more.	Construction of the transmission line from the switchyard to the substation will have a capacity of 132kV. However, given the route is within an industrial area, this activity may not be triggered.
Basic Assessment (EIA Regs Listing Notice 1)	19) The infilling or depositing of any material of more than 5 cubic metres into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock of more than 5 cubic metres from- (i) a watercourse; (ii) the seashore; or (iii) the littoral active zone, an estuary or a distance of 100 metres inland of the high-water mark of the sea or an estuary, whichever distance is the greater	Construction of mooring facilities for power barges, powerline routing, and switchyard within the harbour.
Basic Assessment (EIA Regs Listing Notice 1)	27) The clearance of an area of 1 hectare or more, but less than 20 hectares of indigenous vegetation	The Construction of the switchyard and foundations of the transmission lines may require the removal of 1Ha of indigenous vegetation.
EIA (EIA Regs Listing Notice 2)	2) The development and related operation of facilities or infrastructure for the generation of electricity from a non-renewable resource where the electricity output is 20 megawatts or more.	Establishment of the FPP(s).
EIA (EIA Regs Listing Notice 2)	4) The development of facilities or infrastructure, for the storage, or storage and handling of a dangerous good, where such storage occurs in containers with a combined capacity of more than 500 cubic metres.	LNG/ fuel storage vessels and fuel storage on Power Barges.
EIA (EIA Regs Listing Notice 2)	6) The development of facilities or infrastructure for any process or activity which requires a permit or licence in terms of national or provincial legislation governing the generation or release of emissions, pollution or effluent, excluding(i) activities which are identified and included in Listing Notice 1 of 2014.	Operation of the FPP and storage of LNG.
EIA (EIA Regs Listing Notice 2)	14) The development and related operation of- (ii) anchored platform; or (iii) any other structure or infrastructure on, below or along the sea bed;	Construction of jetty for the power barges in the Port.

Permit	Potential Trigger	Project Activity
EIA (EIA Regs Listing Notice 2)	26) Development- iii) within the littoral active zone; v) if no development setback exists, within a distance of 100 meters inland of the high-water mark of the sea or an estuary, whichever is greater; In respect of – a) facilities associated with the arrival and departure of vessels and the handling or cargo; b) piers; c) inter- and sub-tidal structures for the entrapment of sand; d) breakwater structures; e) coastal marinas; f) coastal harbours and ports g) tunnels; or h) underwater channels; but excluding the development of structures within existing ports that will not increase the development footprint of the port or harbour.	Construction of the jetty will increase the development footprint of the harbour.
EIA (EIA Regs Listing Notice 2)	28) Commencing of an activity, which requires an atmospheric emission license in terms of section 21 of the National Environmental Management: Air Quality Act, 2004 (Act No. 39 of 2004), excluding- i) activities which are identified and included in Listing Notice 1 of 2014.	Storage of dangerous goods and emissions from power generation units in terms of operation of the FPP and storage of LNG.
Basic Assessment (EIA Regs Listing Notice 3)	12) The clearance of an area of 300 square metres or more of indigenous vegetation except where such clearance of indigenous vegetation is required for maintenance purposes undertaken in accordance with a maintenance management plan. In KwaZulu-Natal: vi. Within the littoral active zone or 100 metres inland from high water mark of the sea or an estuarine functional zone, whichever distance is the greater, excluding where such removal will occur behind the development setback line on erven in urban areas.	The Construction of the switchyard and transmission lines will require clearance of vegetation within 100m inland of the HWM.

4.2.2 Consolidated Permitting Requirements

Due to nature of the Project, a suite of environmental legislation will be applicable. In order to meet the various legislative requirements, ERM intends to run an integrated EIA process, which will also meet the process requirements in terms of the following laws (as applicable). However, the successful IPP will be responsible for finalising the specific environmental licensing/ permitting requirements (if required) associated with these processes, once appointed:

- National Environmental Management: Waste Act (No. 59 of 2008) (NEMWA);
- National Environmental Management: Biodiversity Act (No. 10 of 2004) (NEMBA);
- National Environmental Management: Air Quality Act (No. 39 of 2004) (NEMAQA);
- National Forest Act (Act No. 84 of 1998);
- National Water Act (No. 36 of 1998); and
- National Heritage Resources Act (No. 25 of 1999).

Details of specific permitting requirements from these laws are provided in *Table 4.2*.

Table 4.2 Consolidated Permitting Requirements

Law	Requirements	Project Relevance	Competent Authority
National Environmental Management Waste Act (No. 59 of 2008)	Section 19 of NEMWA provides for the listing of waste management activities that have, or are likely to have a detrimental effect on the environment. In accordance with this, GN 921 of 29 November 2013 lists waste management activities for which a waste management licence (WML) is required in terms of Section 20 of the Act. Furthermore, it classifies each of the waste management activities into different categories, with more onerous provisions assigned for activities that are regarding as being more detrimental to the environment. In this regard, 'Category A' activities require a NEMA BAR process to be conducted prior to commencement. 'Category B' activities require a full S&EIR process to be conducted, while 'Category C' activities are wholly exempt from the WML permitting process, as long as they show compliance with a set of prescribed standards.	A Waste Management Licence (WML) is not expected to be applicable for this Project given the small quantities of waste generated, the fact that only temporary storage of general waste and hazardous waste is expected and the fact that no general or hazardous waste is expected to be treated on site.	The Provincial MEC is the competent authority for all applications involving general waste, while the National DEA administers applications involving hazardous waste.
National Environmental Management Biodiversity Act (10 of 2004)	Part 1 of Chapter 4 of NEMBA discusses the protection of threatened or protected ecosystems. In this section, the Minister or the provincial environmental MEC may publish a national or provincial list of ecosystems that are threatened and in need of protection. Subsequently, the Minister can identify by notice in the Gazette, any process or activity in a listed ecosystem as a 'threatening process'. Once so identified, the threatening process is regarded as an activity requiring an EIA to be carried out in terms of section 24(2) (b) of NEMA. Only a draft national list of threatened ecosystems has been published as of yet. As such, these provisions are not yet in effect and will not apply.	Based on the information available, certain areas surrounding the port are considered to have conservation importance and/or sensitive features. The provisions for NEM:BA has been included and may require a permit if deemed necessary after the specialist investigation is completed.	Not applicable.

Law	Requirements	Project Relevance	Competent Authority
National Environmental Management Air Quality Act (No. 39 of 2004)	Chapter 5 of NEMAQA deals with the control and management of emissions relates to the listing of activities that are sources of emissions and the issuing of emission licences in respect of these activities. These activities are listed in terms of GN 893 of 22 November 2013 and are broken up into 10 categories and associated sub-categories, including 'Liquid Fuel Combustion Installations' (Subcategory 1.2), 'Gas Combustion Installations' (Subcategory 1.4), as well as the storage and handling of petroleum products (Subcategory 2.4).	An Atmospheric Emissions Licence (AEL) will be required for the storage of LNG and also for more than 50MW of power generated. An AEL for the emissions from the power barges and power generation units will be confirmed. Once authorisation has been granted for the project and a preferred bidder selected, the exact air emissions data can be collated and the preferred bidder can complete the application for the AEL. Information gathered during the EIA phase will be used in this application process.	The issuing of emission licences for 'power sector' projects is the responsibility of the National DEA.
National Environmental Management: Integrated Coastal Management Act (24 of 2008)	Section 69 of the NEM: ICMA prohibits the discharge of effluent that originates from a source on land into coastal waters except in terms of a general authorisation contemplated in subsection (2) or a coastal waters discharge permit issued under this section by the Minister.	To be confirmed by DEA (Oceans and Coasts division) as to applicability given that the effluent (heated water) will be generated on the FPP (i.e. not a land-based source).	DEA (Oceans and Coasts division)
National Water Act (No. 36 of 1998)	Section 21 of NWA sets out general principles for regulating water use. Water use is defined broadly, and includes taking and storing water, activities which reduce stream flow, waste discharges and disposals, controlled activities (activities which impact detrimentally on a water resource), altering a watercourse, removing water found underground for certain purposes, and recreation (refer to 'WULA Listed Activities' in permitting plan). In general a water use must be licensed unless it is listed in schedule I, is an existing lawful use, is permissible under a general authorisation (as listed in GNR 399), or if a responsible authority waives the need for a licence (Section 22).	It is likely that the Water Use Licence (WUL) provisions of the NWA will be triggered by the Project, particularly in terms of the switchyard location in relation to a wetland. This requires further investigation and confirmation regarding applicability of a full WUL or a General Authorisation. Consultation with the DWS must be undertaken to confirm applicability.	The Regional Department of Water and Sanitation (DWS) will be the competent authority to engage with on this application.

Law	Requirements	Project Relevance	Competent Authority
National Heritage Resources Act (No. 25 of 1999)	Section 38 (1) of the NHRA requires any person who intends to undertake a development which exceeds 5000 m² in extent or 300 m in length to notify the responsible heritage resources authority, viz. the South African Heritage Resources Agency (SAHRA) or the relevant provincial heritage agency. The applicable authority will in turn indicate whether or not a full Heritage Impact Assessment (HIA) would need to be undertaken.	Before undertaking the development the South African Heritage Resources Agency (SAHRA) will have to be informed of the planned construction activities as the development exceeds standard SAHRA thresholds. Once the details of the project are submitted to SAHRA they will respond with details of what assessment is required for the project.	Amafa aKwaZulu Natali will be the competent authority to engage with on this application.

4.3 OTHER APPLICABLE LEGISLATION, POLICIES AND/OR GUIDELINES

4.3.1 National Legislation

Key National legislation relevant for the Project (in addition to those presented in preceding sections) is listed below.

- Constitution of the Republic of South Africa (108 of 1996);
- National Environmental Management: Protected Areas Act (57 of 2003);
- National Environmental Management: Integrated Coastal Management Act (24 of 2008);
- National Water Act (36 of 1998);
- Sea-Shore Act (21 of 1935);
- Marine Living Resources Act (18 of 1998);
- National Ports Act (12 of 2005);
- Occupational Health and Safety Act (73 of 1989);
- Gas Act (48 of 2001);
- Noise Control Regulations under the Environmental Conservation Act (73 of 1989);
- Major Hazard Installation Regulations (GNR. 692 of 30 July 2001);
- National Forests Act (84 of 1998);
- Hazardous Substances Act (56 of 1973);
- Explosives Act (15 of 2003);
- Conservation of Agricultural Resources Act (43 of 1983);
- Electricity Regulation Act (4 of 2006);
- Subdivision of Agricultural Land Act (70 of 1970);
- Nature and Environmental Conservation Ordinance (19 of 1974);
- Merchant Shipping Act (57 of 1951);
- Marine Pollution (Prevention of Pollution from Ships) Act (2 of 1986);
- Dumping at Sea Control Act (GNR. 31884 of 11 February 2009);
- National Ports Act (12 of 2005); and
- Marine Traffic Act (2 of 1981).

Applicable provisions from these laws and regulations will be incorporated into the design and implementation of the Project and certain Acts have been described further below.

The National Environmental Management: Integrated Coastal Management Act, Act No. 24 of 2008

The National Environmental Management: Integrated Coastal Management Act, Act No. 24 of 2008 (NEM:ICMA) gives legal effect to the policy provisions provided for within the White Paper for Sustainable Coastal Development in South Africa (2000). It establishes a system of integrated coastal and estuarine management in the Republic, including norms, standards and policies, in order to promote the conservation of the coastal zone, and to maintain the natural attributes of coastal landscapes and seascapes, and to ensure the

development and the use of natural resources within the coastal region is socially and economically justifiable as well as ecologically sustainable.

Chapter 8 and Schedule 2 of the NEM: ICMA provides integrated procedures for regulating the disposal of effluent and waste into the sea and estuaries. These procedures relate to both discharge and dumping permits. Previously the disposal of effluent through pipelines and the dumping of waste from vessels into the sea or estuaries were controlled under different articles of legislation by different Departments.

The NEM:ICMA intends to regulate the discharge of effluent into coastal waters from any source on land (section 69) and to regulate the discharge of effluent into coastal waters from vessels (sections 70 and 71) by requiring permits to authorise such discharges.

Section 69 of the NEM: ICMA prohibits the discharge of effluent that originates from a source on land into coastal waters except in terms of a general authorisation contemplated in subsection (2) or a coastal waters discharge permit issued under this section by the Minister.

Section 69 of the NEM: ICMA does not currently apply to effluent from a floating power platform/ power ship or power barge as the effluent does not originate from the land.

Section 70 of the NEM: ICMA prohibits incineration at sea and restricts dumping at sea in accordance with South Africa's obligations under international law.

Section 71 provides requirements applicable to dumping permits. The NEM: ICMA defines "*dumping at sea*" as:
"(a) any deliberate disposal into the sea of any waste or material other than operational waste from a vessel, aircraft, platform or other man-made structure at sea;

(b) any deliberate disposal into the sea of a vessel, aircraft, platform or other man-made structure at sea;

(c) any storage of any waste or other material on or in the seabed, its subsoil or substrata: or

(d) any abandonment or toppling at site of a platform or other structure at sea, for the sole purpose of deliberate disposal, but "dumping at sea" does not include –

(i) the lawful disposal at sea through sea out-fall pipelines of any waste or other material generated on land:
(ii) the lawful depositing of any substance or placing or abandoning of anything in the sea for a purpose other than mere disposal of it; or

(iii) disposing of or storing in the sea any tailings or other material from the bed or subsoil of coastal waters generated by the lawful exploration, exploitation and associated off-shore processing of mineral resources from the bed, subsoil or substrata of the sea;"

The Marine Pollution Act, Act No. 2 of 1986

The Marine Pollution Act, Act No. 2 of 1986 is the main Act in South Africa which regulates pollution from ships, tankers and offshore installations. In 1976, South Africa agreed to the International Convention on Civil Liability for Oil Pollution Damage of 1969 and incorporated the requirements of this international convention into this Marine Pollution Act, Act No. 2 of 1986. The provisions of this Act differ slightly from the convention in that the convention only covers persistent oil discharge from tankers, whereas the Marine Pollution Act, Act No. 2 of 1986 covers all types of oil discharge from any type of vessel or offshore installation.

In terms of the Act, the discharge of any oil from a ship, tanker or offshore installation within 12 miles (19km) off the South African coast is an offence. The discharge of oily water or oil and any other substance which contains more than a hundred parts per million of oil is prohibited between 19 and 80 km offshore.

There are three exceptions for the discharge of oil:

- If it was necessary to discharge the oil for safety reasons;
- If the oil escaped from the ship, tanker or offshore installation as a consequence of damage to the ship, tanker or offshore installation, and as soon as possible, all reasonable steps were taken to stop or reduce the escape of oil; or
- If the oil escaped by reason of leakage not due to any lack of reasonable care, and as soon as possible after the escape was discovered all reasonable steps were taken to stop or reduce the escape of oil.

The aim of the Marine Pollution Act, Act No. 2 of 1986 is to provide protection of the sea from pollution by oil and other harmful substances discharged by ships, and for that purpose give effect to International Convention for the Prevention of Pollution from Ships, 1973/1978 (MARPOL 73/78).

All vessels operating within the South African Exclusive Economic Zone (EEZ) are required to adhere to the legal requirements for waste management and pollution control, including the Marine Pollution Act, Act No. 2 of 1986 - which incorporate MARPOL 73/78 standards) and the Dumping at Sea Control Act, No 73 0f 1965.

The International Convention for the Prevention of Pollution from Ships, 1973/1978 (MARPOL)

The International Convention for the Prevention of Pollution from Ships is the principal international convention covering prevention of pollution of the marine environment by ships from operational or accidental causes. The International Convention for the Prevention of Pollution of Ships was adopted in 1973. In 1978 the Convention was subsequently amended by the Protocol relating thereto. The Protocol, introduced stricter regulations for the survey and certification of ships. The Convention and the Protocol are to be read as one instrument and is usually referred to as MARPOL 73/78.

MARPOL 73/78 is an important global treaty for the prevention of pollution from the operation of ships; it controls the design and equipment of ships; creates system of certificates and inspections; requires states to provide facilities for the disposal of oily waste and chemicals. MARPOL 73/78 regulates all the technical aspects of pollution from ships, except the disposal of waste into the sea by dumping, and pertains to ships of all types, although it does not pertain to pollution from the exploration and exploitation of sea-bed mineral resources. Regulations covering the various sources of ship-generated pollution are contained in the six Annexes of the London Convention and are updated regularly. Annexes I and II, governing oil and chemicals are compulsory but Annexes III, IV, V and VI on packaged materials, sewage, garbage and air pollution are optional.

The floating power platform must comply with MARPOL 73/78 while it is present and operating in the South African EEZ.

The Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter (1972) (The London Convention) and the 1996 Protocol
The 1972 Convention on the Prevention of Marine Pollution by Dumping of Wastes and other Matter (London Convention 1972) is an international treaty that restricts the discharge of wastes that are generated on land and disposed of at sea.

The Protocol, which is meant to ultimately replace the 1972 Convention, prohibits all dumping, except for possibly acceptable wastes contained in Annex I of the Protocol. Annex I permits discharge from "vessels and platforms or other man-made structures at sea".

Requirements of the London Convention and the 1996 Protocol has been given effect to in South African law by the Dumping at Sea Control Act, Act No 73 of 1980, as amended by the Dumping at Sea Control Amendment Act, Act No. 73 of 1995 and the NEM:ICMA. The DEA have the responsibility of implementing the Protocol and the London Convention in South African Waters.

The Dumping at Sea Control Act, Act No. 73 of 1980, as Amended by the Dumping at Sea Control Amendment Act, Act No. 73 of 1995

The Dumping at Sea Control Act, Act No 73 of 1980, as amended by the Dumping at Sea Control Amendment Act, Act No. 73 of 1995, controls the dumping of substances at sea. The Act lists substances that are prohibited to be dumped at sea (Schedule 1) and substances that are restricted when dumping at sea (Schedule 2). This Act must therefore be taken into account when determining the nature of the effluent being discharged from the floating power plant.

In terms of the London Convention and the 1996 Protocol Article III (b) (i) *"Dumping does not include the disposal of wastes or other matter incidental to, or derived from the normal operation of vessels, aircraft, platforms or man-made structures at sea and their equipment, other than wastes or other matter transported by or to vessels, aircrafts, platforms or man-made structures at sea, operating for the purpose of disposal of such matter or derived from the treatment of such wastes or other matter on such vessel, aircrafts, platforms or structures".*

Therefore if the Department of Environmental Affairs (DEA) agrees that the cooling water discharge from the power barge is considered to be "operational", a dumping permit would not be required. However, should the DEA determine the cooling water to be considered a waste, then a dumping permit shall be required.

ERM recommends that the client obtains a legal opinion on the definition of 'operational' waste from a vessel.

The South African Marine Water Quality Guidelines recommend that the maximum acceptable variation in ambient temperature should not exceed 1°C at the edge of the zone where initial mixing and dilution take place. However, it is international best practice to meet a temperature differential of 3° C at the edge of the zone where initial mixing and dilution take place.

The IFC guidelines for temperature discharge into **surface waters** states that the effluent should result in a temperature increase of no more than 3° C at the edge of the zone where initial mixing and dilution take place.

The International Convention on Oil Pollution Preparedness, Response and Co-Operation, 1990 (OPRC Convention)

The International Convention on Oil Pollution Preparedness, Response and Co-operation stipulates that all vessels are required to have an oil pollution emergency plan on-board the vessel. Operators of offshore units under the jurisdiction of the Parties to the convention are also required to have oil pollution emergency plans or similar arrangements which must be synchronised with national systems for responding rapidly and effectively to oil pollution incidents. Vessels are required to report incidents of pollution to coastal authorities and the convention describes the actions that are then to be taken. The Convention recommends the establishment of stockpiles of oil spill

combating equipment, the holding of oil spill combating exercises and the development of detailed plans for dealing with pollution incidents. Parties to the convention must provide assistance to others in the event of a pollution emergency and provision is made for the reimbursement of any assistance provided. Although South Africa is not a Party to this convention, the National Contingency Plan for the Prevention and Combating of Pollution from Ships serves the requirements of this Act.

The United National Convention on Law of the Sea, 1982 (UNCLOS)

The United Nations Convention on the Law of the Sea (UNCLOS) establishes a comprehensive legal framework on environmental protection, based on the principle of State responsibility and general environmental protection principles, while depending on other international and regional organisations and instruments to supplement rules and standards. Part XII of the Convention addresses marine environmental protection with the aim of minimising all types of pollution and devices used in offshore exploration and production of the resources of the seabed and subsoil. UNCLOS concentrates on measures for preventing accidents and dealing with emergencies, ensuring the safety of operations at sea, and regulating the design, construction, equipment, operation and manning of such installations and devices. Article 208 imposes a duty on States to control such activities within their jurisdiction and to cooperate regionally and globally to implement such obligation of marine protection.

It is important to note, however, that while UNCLOS provides a framework for future protocols and instruments addressing marine pollution, it fails to provide details of how such goals should be accomplished. It therefore requires regional harmonization and standards while assigning and allocating responsibilities to States. In order to address this issue UNCLOS has been incorporated into the laws that protect the marine environment in South Africa.

The Marine Living Resources Act, Act No. 18 of 1998

The Marine Living Resources Act 18 of 1998, Act No. 18 of 1998 governs Marine Protected Areas (MPAs) in South Africa and states in section 43 that:
"*(2) No person shall in any marine protected area, without permission in terms of subsection (3) –*
(a) fish or attempt to fish;
(b) take or destroy any fauna and flora other than fish;
(c) dredge, extract sand or gravel, discharge or deposit waste or any other polluting matter, or in any way disturb, alter or destroy the natural environment;
(d) construct or erect any building or other structure on or over any land or water within such a marine protected area; or
(e) carry on any activity which may adversely impact on the ecosystems of that area.
(3) The Minister may, after consultation with the Forum, give permission in writing that any activity prohibited in terms of this section may be undertaken, where such activity is required for the proper management of the marine protected area."

Due to the discharge of the cooling water and other ship based effluents from the FPPs, a permit will be required in terms of this Act should the vessel be stationed inside or near a Marine Protected Area.

The Marine Pollution (Control and Civil Liability) Act, Act No. 6 of 1981

The purpose of the Marine Pollution (Control and Civil Liability) Act, Act No. 6 of 1981 is to provide protection of the marine environment from pollution by oil and other harmful substances. This Act gives power to the South African Maritime Safety Authority (SAMSA) to take steps to prevent harmful substances being discharged from vessels.

SAMSA will need to be consulted regarding the discharge of the cooling water from the FPP. They will require a detailed description of the effluent chemical constituents.

The Marine Pollution (Prevention of Pollution from Ships) Act, Act No. 2 of 1986

The Marine Pollution (Prevention of Pollution from Ships) Act, Act No. 2 of 1986 aims to provide protection of the marine environment from pollution by oil and other harmful substances discharged from ships.

The Marine Pollution (Intervention) Act, Act No. 65 of 1987

The Marine Pollution (Intervention) Act, Act No. 65 of 1987 implements to the international convention relating to the Intervention of the High Seas in cases of oil pollution casualties, and to the Protocol relating to Intervention of the High Seas in cases of Marine Pollution by substances other than Oil in South African Waters.

The National Ports Act, Act No. 12 of 2005

The National Ports Act, Act No. 12 of 2005 provides for the formation of the National Ports Authority and the Ports Regulator. In terms of the Act, all Ports fall under the jurisdiction of the National Ports Authority (NPA), which must own, manage, control and administer ports to ensure their efficient and economic functioning. Part of this control includes licensing and regulating functions in respect of port services and port facilities.

Transnet will need to be consulted regarding the discharge of the cooling water from the FPP. They may have different rules and regulations to regulate effluents in the Port.

5 ENVIRONMENTAL AND SOCIAL BASELINE

The objective of the environmental and social baseline is to establish the characteristics of the existing biophysical and socio-economic conditions in the Project's Areas of Influence (AoI). The baseline serves as the reference point against which changes can be predicted and ultimately monitored.

This Chapter presents the baseline conditions in the Project's AoI. The baseline was determined through review of existing information and through observations and interviews conducted in the site visit.

5.1 INTRODUCTION

The Port of Richards Bay falls within the uMhlathuze Local Municipality located on the coast of the Indian Ocean in KwaZulu-Natal, South Africa. It is one of six (6) municipalities that form part of the uThungulu District Municipality.

The Port of Richards Bay [1]rests on the shores of a lagoon formed by the Mhlatuze River about 90 nautical miles northeast of the Port of Durban. Sir Frederick Richards established the settlement of Port of Richards Bay during the Anglo-Zulu War in 1879. In an effort to preserve the ecological integrity of the lagoon, the Richards Bay Game Sanctuary was created in 1935. The sanctuary was expanded to form Richards Bay Park in 1943.

In 1954, the town of Richards Bay was designed on the lagoon's shores. It was a recognized town by 1969. The harbour was converted into the Port of Richards Bay in 1976. The deep-water harbour soon acquired railway and pipeline links to Johannesburg, some 484 kilometres to the northwest of the Port.

In 2002, Richards Bay and Empangeni as well as the surrounding rural and tribal areas merged to form the "City of uMhlathuze" covering an area of approximately 800 km² and supporting approximately 300, 000 people.

5.2 AREA OF INFLUENCE

For the purposes of this impact assessment, the Area of Influence (AoI) encompasses (IFC, 2012):

- *'The area likely to be affected by: (i) the project and the client's activities and facilities that are directly owned, operated or managed (including by contractors) and that are a component of the project; (ii) impacts from unplanned but*

[1] (http://www.worldportsource.com/ports/review/ZAF_Port_of_Richards_Bay_641.php). Accessed 21 September 2015.

predictable developments caused by the project that may occur later or at a different location; or (iii) indirect project impacts on biodiversity or on ecosystem services upon which Affected Communities' livelihoods are dependent.

- *Associated facilities are facilities that would not have been constructed or expanded if the project did not exist and without which the project would not be viable.*

- *Cumulative impacts that result from the incremental impact, on areas or resources used or directly impacted by the project, from other existing, planned or reasonably defined developments at the time the risks and impacts identification process is conducted.'*

For the Project, the **direct** AoI is the spatial extent of the Project footprint and related facilities as well as on the associated effects on the receiving environment. This encompasses:

- The Port of Richards Bay;
- 1 ha selected site for the switchyard; and
- Approximately 3 km transmission line.

The **indirect** AoI encompasses areas potentially affected by cumulative impacts as well as areas that could be impacted indirectly by Project activities. The indirect AoI will differ between various resources and receptors depending on the dependencies. For example, indirect impacts to soils would be likely limited to the immediate areas around the direct footprint of the switchyard. Indirect impact to social resources may, however, extend to nearby towns and cities.

The direct and indirect AOI will be determined through the EIA process.

5.3 TERRESTRIAL ENVIRONMENT

5.3.1 Climatic Conditions

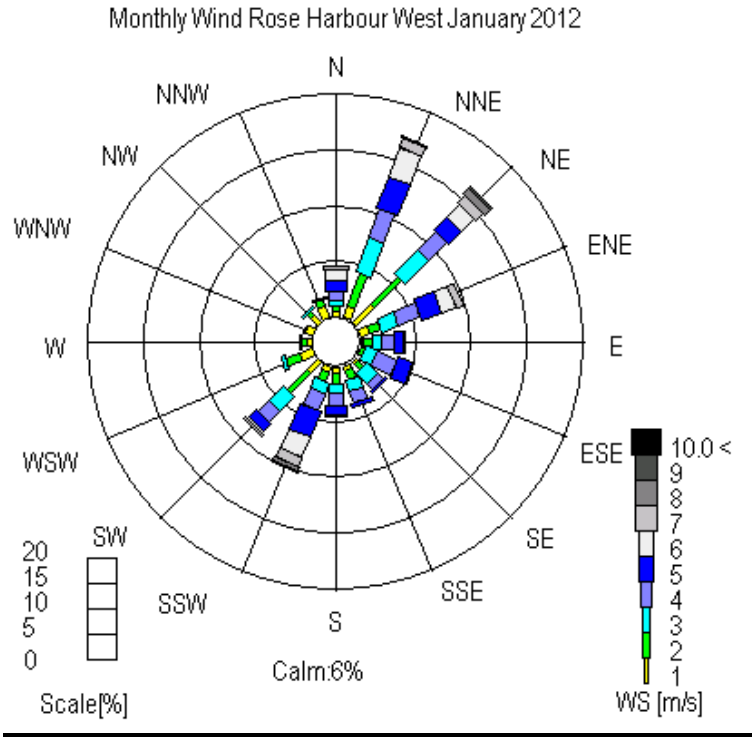
Richards Bay is characterised by a subtropical climate with warm wet summers and mild moist to dry winters, which are frost-free. The town has an average annual rainfall of 1,228 millimetres. The average annual temperature is 21.5 °C, with daytime maxima peaking from January to March at 29 °C, and the minimum is 21 °C , dropping to daytime highs from June to August of 23 °C and a minimum of 12 °C.

According to the Monthly Ambient Air Quality Report [1], the average wind speed in January 2012 was 3.9m/s with 6.0% calms. Maximum daily, hourly

[1] Richards Bay Clean Air association AQ0002 Monthly Ambient Air Quality Report, January 2012. SGS Environmental.

and 10-minute average wind speeds were 6.7m/s, 8.9m/s and 9.8m/s respectively. Predominant winds blew from two sectors: NNE to ENE (45%) and SSW to SW (10%). Most of the higher speed winds (>8m/s) were from the NNE to NE (58%), and SSW (31%).

Figure 5.1 Harbour West wind rose January 2012



Source: Richards Bay Clean Air association AQ0002 Monthly Ambient Air Quality Report, January 2012. SGS Environmental.

5.3.2 *Topography*

According to the Environmental Risk Evaluation and Guidelines for the Richards Bay Industrial Development Zone[1], the study area is characterized by three distinct topographical features. These include:

- A flood plain consisting mainly of water bodies (lakes, estuary, river channels);
- Sand plains rising above the flood plain; and
- Coastal Dunes.

[1] . Environmental Risk Evaluation and Guidelines for the Richards Bay Industrial Development Zone, 2010. Prepared by Thorn-Ex.

The floodplain forms part of the alluvial plain that represents the area over which floodplains have shifted over geological time and is characterized by the presence of alluvial soils[1]. The local landscape is characterized by an interconnected network of hydrological ecosystems that sustains a combination of locally important habitats and species which contribute to the maintenance of one of South Africa's biodiversity hotspots.

At least 75% of the area is already transformed and the remaining surface area under indigenous cover has been identified as highly significant from a biodiversity point of view.

The Mhlathuze and Nseleni rivers run through the area and there are various coastal lakes of environmental importance that also supply water to the Municipality.

5.3.3 Geology and Soils

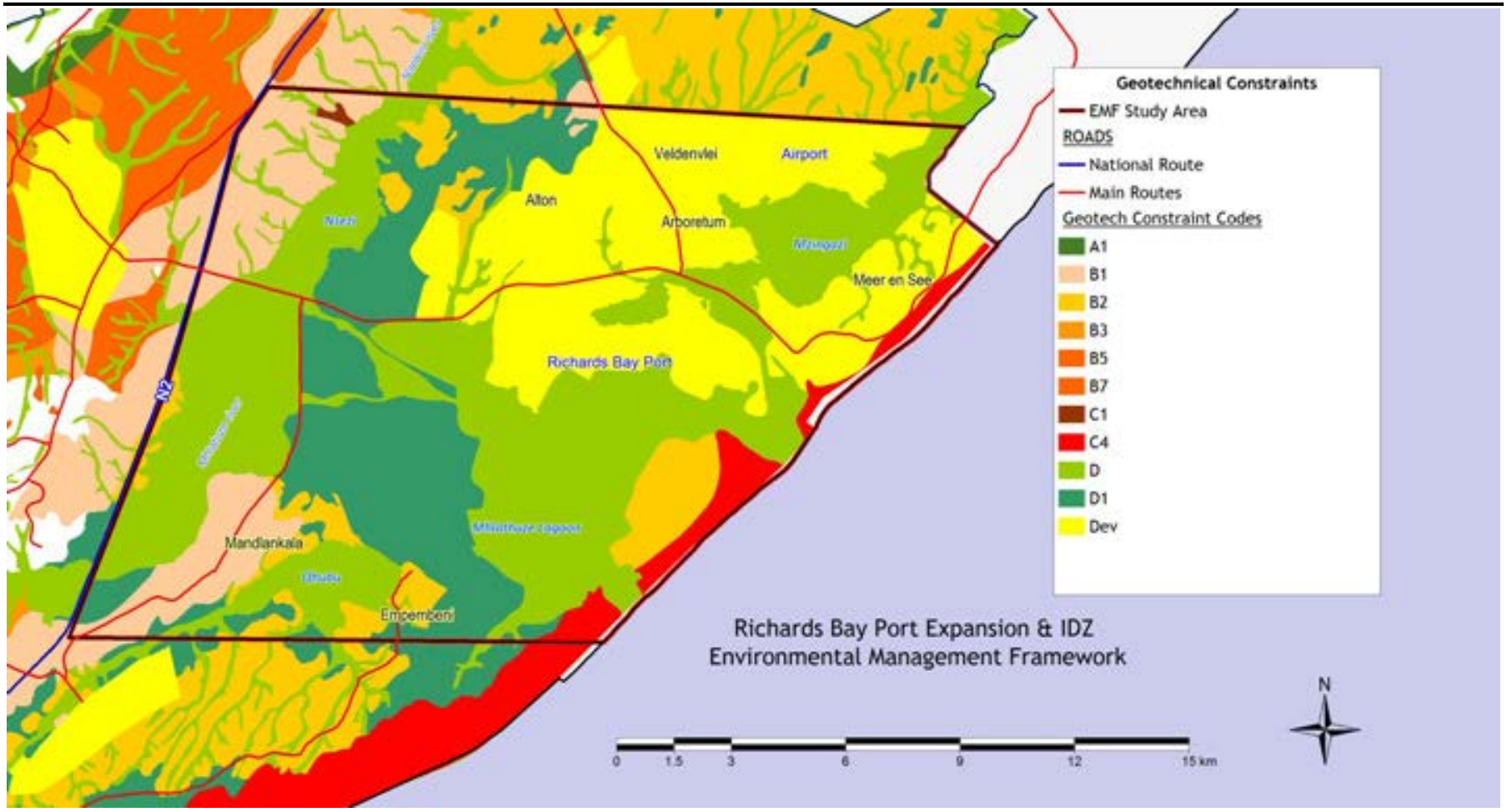
According to the Environmental Risk Evaluation and Guidelines for the Richards Bay Industrial Development Zone (2010), an Engineering Geology Study undertaken by Golder in 2005 broadly classified areas for the purpose of identifying constraints to development as well as difficult founding conditions, or other geotechnical factors affecting urban development. This is illustrated in *Figure 5.2.*

The geotechnical and development constraint categories of the environmental sensitive zones are:

- A have no restrictions on development.
- B are developable, but with minor geotechnical and/or development constraints.
- C is developable but with more costly geotechnical and/or development constraints. More detailed geotechnical investigations may be required.
- D recommends no development, or more detailed geotechnical investigations required.

The most significant constraint category which presents challenges is represented by the zonal prefix D.

Figure 5.2 Geotechnical Constraints (Golder, 2005) within the uMhlathuze Municipality. The area identified for the development of the switchyard and transmission line falls within the developed zone (yellow) and zone D (light green).



Source: Environmental Risk Evaluation and Guidelines for the Richards Bay Industrial Development Zone, 2010

5.3.4 *Flora and Fauna*

Richards Bay has a high level of local endemism and the main systems of remaining natural assets are considered important for supporting Red Data Species (Environmental Risk Evaluation and Guidelines for the Richards Bay Industrial Development Zone, 2010). There are a number of critically important ecosystem types in the area and their functioning is under threat from development pressure. Critical ecosystem types in the area include, amongst others, grasslands, wetland ecosystem types, mangrove and swamp forests, and intertidal habitats.

5.3.5 *Air Quality*

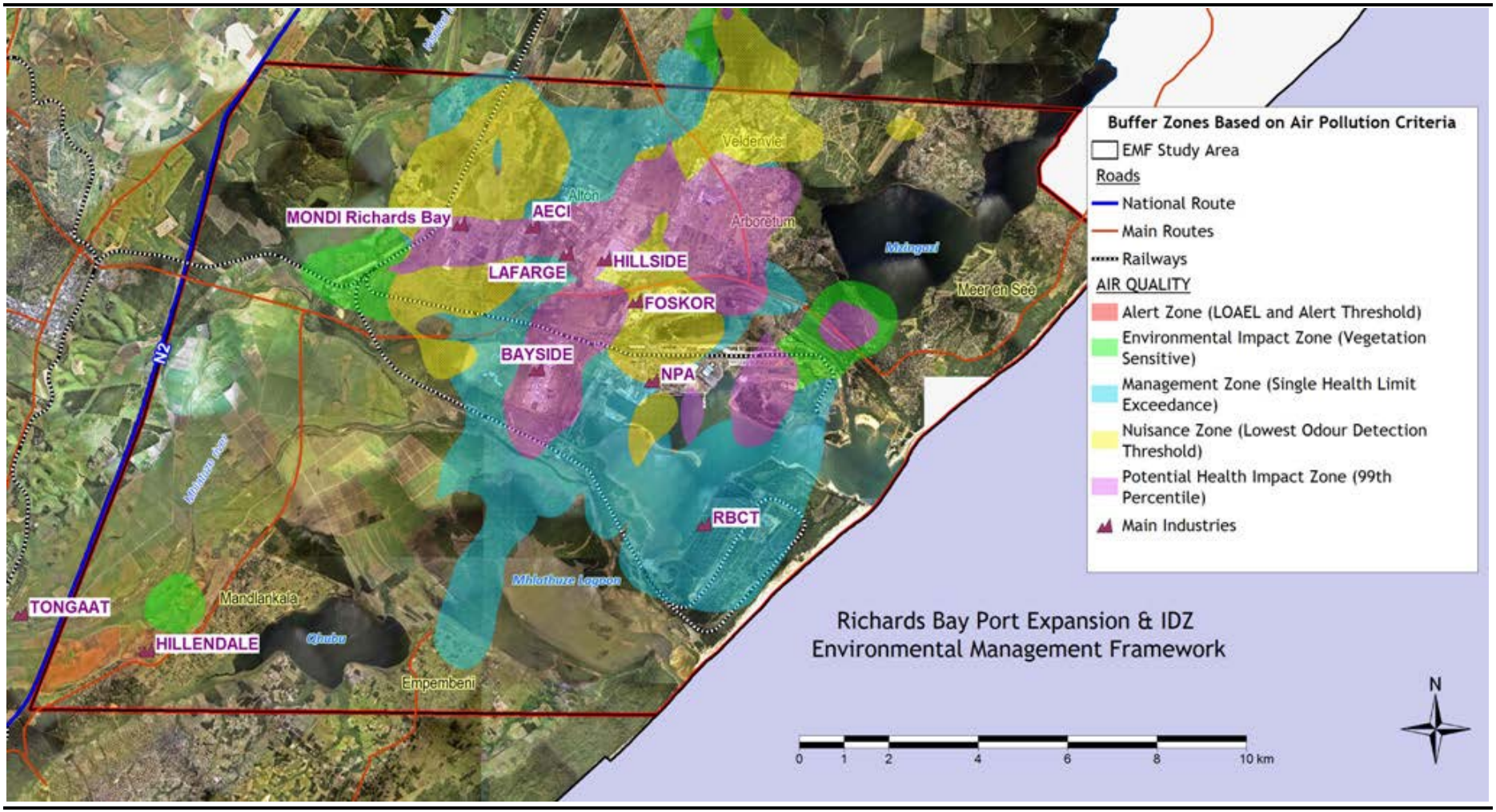
According to the Environmental Risk Evaluation and Guidelines for the Richards Bay Industrial Development Zone (2010), Richards Bay is characterised by very poor air quality conditions. A study was commissioned in 2005 which assessed these conditions and identified impact areas where air quality limits are exceeded or are in danger of being exceeded. The buffer zones that were derived described in *Table 5.1* and illustrated in *Figure 5.3*. The zones are based on the existing air quality situation and they characterise the areas which are incompatible with residential and other sensitive land uses.

Table 5.1 Air Quality Buffer Zone Descriptions

Buffer Zone	Implications for management
Potential Health Impact Zone (99th Percentile)	The zone incorporates mainly the CBD and the industrial areas surrounding it and Arboretum. It demands a priority focus for decision-making. Further industrial development resulting in SO^2 emissions should preferably not be considered within this zone until such time as the concentrations are within acceptable limits. These levels will have to be determined by the City of uMhlathuze. Industries cannot be allowed to operate at full permit capacity in this zone.
Nuisance Zone	The zone areas where people may experience discomfort due to unpleasant odours. It falls within the critical zone.
Management Zone	The main part of Richards Bay falls within this zone including the industrial areas, CBD, Arboretum and Brackenham. This zone could result in possible health implications. The ambient monitoring network should be expanded to ensure representative monitoring within this zone.
Alert Zone (LOAEL & Alert Thresholds)	The main pollutants of concern in this zone are PM10 around the harbour and SO2 at the CBD and surroundings. Any further industrial development within this zone resulting in these two pollutants should be carefully considered since effects may be noticed by sensitive individuals, and actions to reduce these effects may be needed. (LOAEL: The lowest level at which adverse effects for a specific pollutant have been observed).
Environmental Impact Zone	Areas where possible negative impacts on vegetation growth could occur.

Source: Environmental Risk Evaluation and Guidelines for the Richards Bay Industrial Development Zone, 2010

Figure 5.3 Combined buffer zones based on air pollution criteria- the proposed project falls within the Management Zone (blue)



Source: Environmental Risk Evaluation and Guidelines for the Richards Bay Industrial Development Zone, 2010

5.3.6 Surface and Groundwater

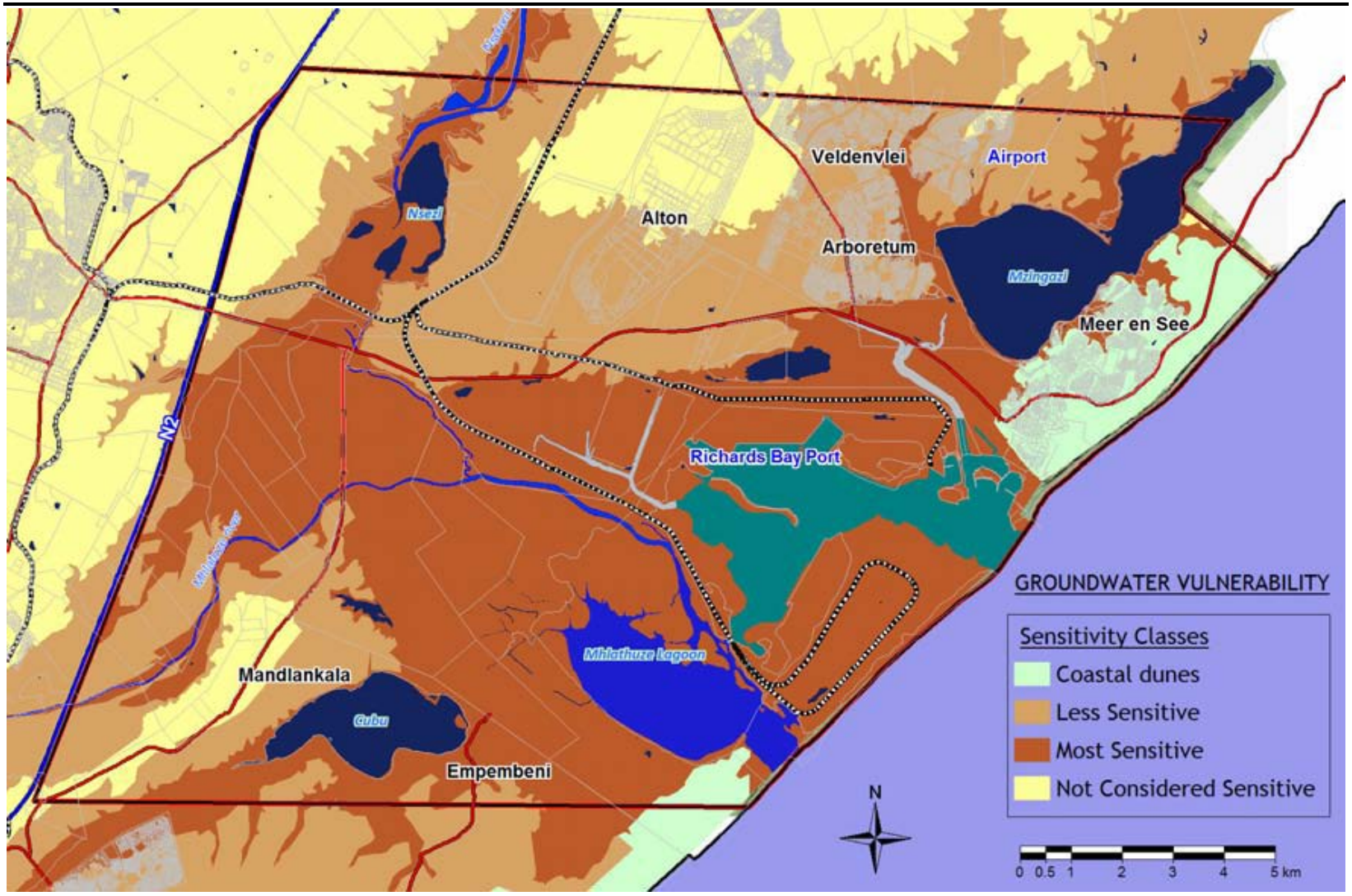
According to the Environmental Risk Evaluation and Guidelines for the Richards Bay Industrial Development Zone (2010), water is a limiting factor for further industrial development in Richards Bay due to its availability and variability.

There is a complex hydrological regime in the area representing various surface water features (lakes, wetlands, rivers and streams) that have strong linkages with the groundwater features (various coastal aquifers). This situation generates a very sensitive environment in which negative impacts on the groundwater will be reflected in the surface water bodies and vice-versa.

The hydrological network also has strong ecological linkages, giving rise to unique aquatic, estuarine and marine habitats. This complex situation makes the groundwater-surface water interaction highly vulnerable to development and contamination risks are a general concern in the area.

Groundwater characteristics for the uMhlathuze Municipal Area have been defined and are illustrated in *Figure 5.4*.

Figure 5.4 Groundwater Vulnerability Classes (Golder, 2004) - the location of the switchyard falls within the Most Sensitive class (brown).



Source: Environmental Risk Evaluation and Guidelines for the Richards Bay Industrial Development Zone, 2010

The local water supply capacity in uMhlathuze has been fully developed and water is being augmented from outside the catchment. The demand for water is likely to grow and there are questions around the adequacy of water to sustain the ecological reserve.

5.3.7 Wetlands

Wetlands are sensitive environmental features that must be protected from development to safeguard the functions they provide in terms of water quality and quantity. The Conservation Authorities have set a target of "100% protection of all wetlands" in the area.

According to the Investigational Report No.138 (20091), the original Port was a large, shallow wetland area prior to the 1970s and was divided into two areas to create the Port area and a nature conservation area (termed the sanctuary). This resulted in the loss of wetland habitats and greatly changed the remaining ones. Consequently, parts of Richards Bay are regarded as nationally important aquatic ecosystems particularly for fish and birds. In essence, the major aquatic ecosystems in the Greater Richards Bay area likely to be affected by development include intertidal and subtidal sand and mudflats, mangroves, the river/estuary interface, sand spits, freshwater pans, papyrus and Phragmites swamps and the lower reaches of two rivers.

5.4 MARINE ENVIRONMENT

Oceanography

The main aspects defining physical oceanography are temperature and salinity. These features are significantly influenced by the Agulhas Current, which is considered to be the most significant large-scale oceanographic feature, off the KwaZulu-Natal coast (Schumann et al. 2005). The sea temperature off the Richards Bay coast tends to vary from 21°C to a maximum of 25°C (recorded in February); there is very little vertical temperature variation indicating a well-mixed regime (Schumann et al. 2005). The salinity of the subtropical surface waters is relatively high (greater than 35.5×10^{-3} ppm). There are marked seasonal changes in the upper reaches of the ocean with higher temperatures due to the increase in summer insolation and lower salinities resulting from increased rainfall and outflow from large rivers (Schumann et al. 2005).

Water Quality

The water quality of the Richards Bay port was measured during the development of the Richards Bay Port Expansion EIA and detailed in the Draft Scoping Report (AECOM SA (Pty) Ltd, March 2014). The location of the

[1] Coastal Research Unit of Zululand. Investigational Report No.138 (2009).

FPP falls within the area described as Inner Basin 1 which, together with Inner Basin 3, experienced the highest microalgal biomass (chlorophyll-a concentration) (*Figure 5.5*). The source of nutrients contributing to these elevated biomass levels was attributed to anthropogenic sources. The exchange of water between Inner Basin 1 and the greater Richards Bay is restricted because of its 'dead-end' nature which facilitates an increase in microalgal biomass (water retention time exceeds generation time of the microalgae).

The impact of the release of warm water from a FPP will need to be determined as well as the influence of accidental spills or release of nutrient-rich effluent (which would lead to increases in microalgal biomass).

Figure 5.5 Map of Richards Bay showing the location of Inner Basin 1 where the FPP is proposed to be moored

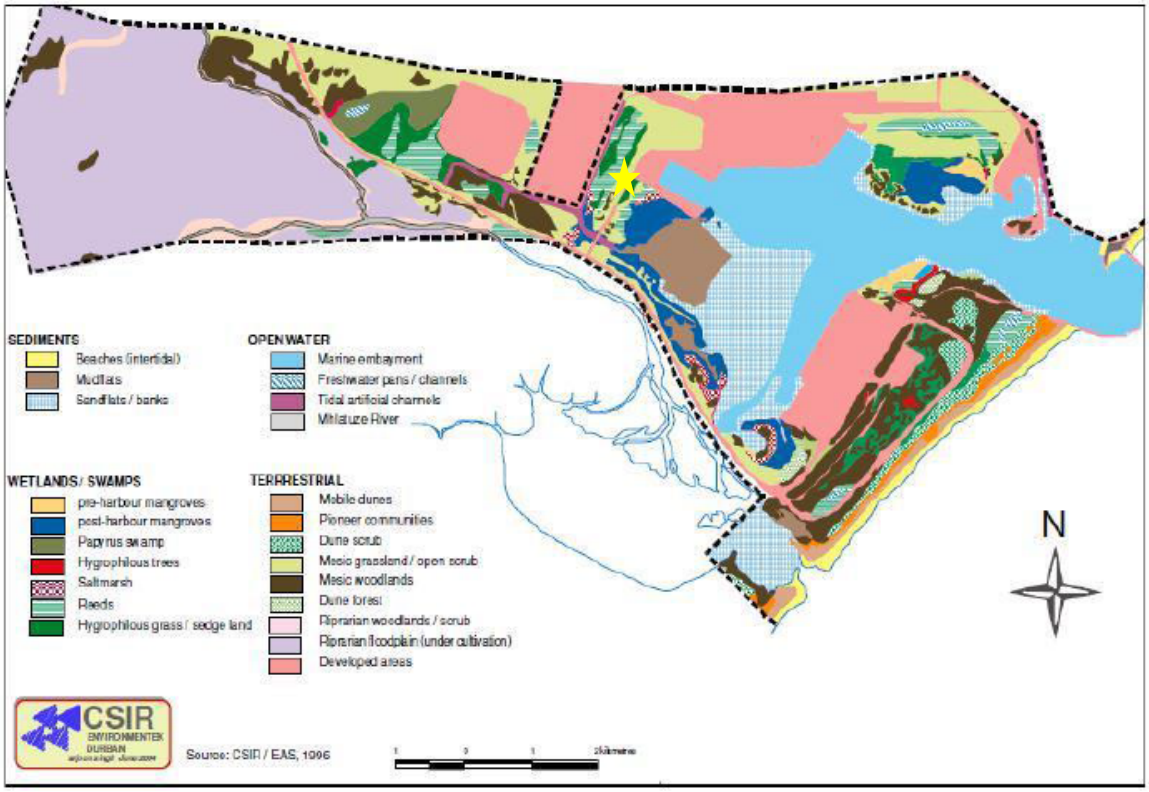
Source: Draft Scoping Report: Proposed Richards Bay Port Expansion Programme within uMhlathuze Local Municipality in Kwa-Zulu Natal Province (DEA REF NO: 14/12/16/3/3/3/103), AECOM, 2014

The port forms part of a larger estuarine system which is closely connected with the marine environment. The original Richards Bay Estuary was divided into two distinct sections by means of a 4km berm wall to form the harbour area and the sanctuary area; and the Mhlathuze River was canalized, diverting the natural flow into the sanctuary estuary. These two estuarine entities still remain as an ecological unit, and it has strong ecological linkages with the floodplain (DAERD, 2011).

There are a number of sensitive habitats within the Port of Richards Bay (CSIR 1996 in ACER (Africa) 2008), namely:

- Subtidal Mud flats;
- Sand flats;
- Freshwater environment;
- Mangroves;
- Reed swamps;
- Undeveloped terrestrial; habitats.

Figure 5.6 ***Sensitive Habitats within the Port of Richards Bay. The proposed location of the FPP (yellow star) is within the area described as the marine embayment in the north-west of the port. It is north of the area identified as post-harbour mangroves (dark blue) and separated from the mudflats (brown) by the sandpit***



Source: CSIR 1996 in ACER (Africa) 2008

Mangroves

According to Aecom (2014)[1], the mangroves are an important habitat for sea life (*Uca* species: Fiddler crabs, *Scylla serrate*: Mud crab, *Periophthalmus kalolo*: Mudskippers and many species of sea snails and sea slugs), birds and animals (i.e. turtles and crocodiles). Fish use this area for mating grounds and as a result of intertidal inundation, fish and crustaceans are swept into this highly productive habitat to feed on the meio – and macro faunal species in the muddy sediments. The mangroves are also visited by large numbers of migratory bird species.

The Echwebeni Site is one of the last remaining stands of the original distribution of mangroves and is of Conversation Significance; this is located on the southern bank of the mouth of the port. This stand of mangroves is important as all three mangrove species, *Avicennia marina* (White mangrove), *Briguiera gymnorhize* (Black mangrove) and *Rhizophora mucronata* (Red mangrove) occur here and this area has been proclaimed a Natural Heritage Site in terms of the defunct Natural Heritage Programme of the Department of Environmental Affairs.

Mud flats

According to Aecom (2014), the subtidal mud flats occur in the south-western side of the port at the outlet of the Bhizolo Canal and cover an area of some 125 ha. The mudflats are important habitats in the functional estuarine ecosystem and support both estuarine species and avifauna species. They also play an important role in nutrient processing and support a complex food web. Species found in this habitat include nematodes and crustaceans as well as various fish species.

The subtidal mudflats also provide a haven for bird species, which include species listed in the IUCN Red List of Threatened Species (2012). The area is considered an area of high regional importance as some of the avifauna species such as the *Numenius phaeopus* (Whimbrel), *Limosa lapponice* (Bartailed godwit) and *Pluvialis squatarola* (Grey plover) are listed in terms of the African - Eurasian Waterbird Agreement under the Convention on the Conservation of Migratory Species of Wild Animals, which therefore lends an international obligation to the area.

5.5 LAND USE

According to the Richards Bay final IDP 2014-2015, the port is the overarching priority for stimulating the local economy. It is also a provincial priority in

[1] Draft Scoping Report: Proposed Richards Bay Port Expansion Programme within uMhlathuze Local Municipality in Kwa-Zulu Natal Province (DEA REF NO: 14/12/16/3/3/3/103), AECOM, 2014

that it is the growth engine for one of the primary provincial growth nodes. Port and related infrastructure is classified as Strategic Important Developments and is important for the national economy. Port expansion options are addressed in the Port Development Framework (2007) which has been integrated with the City's IDP and SDF and form parts of the City's Local Economic Development Strategy.

5.6 CULTURAL HERITAGE AND PALAEONTOLOGY

According to the Baseline Heritage Study: Proposed Richards Bay Port Expansion, uMhlathuze Local Municipality, uThungulu District, KwaZulu-Natal (2013)[1], Palaeogene sediments (Early Palaeocene–Early Oligocene) have been observed in onshore cores south of Richards Bay at depths around 35–55m. Upper Cretaceous St Lucia Formation deposits have been acknowledged in some onshore cores below that level and at around 60m below the sea floor in the Richards Bay harbour. The Eocene deposits in north-eastern KwaZulu-Natal are thought to be correlative to the fossil-rich Eocene Salamanga Fm. in southern Mozambique (Roberts et al., 2006). The Upper Maastrichtian and Palaeocene deposits from Richards Bay yielded rich cephalopod fauna (Klinger et al., 2001; van Jaarsveld, 2006).

According to the baseline report referred to above, the presence of significant heritage resources in the area is unlikely due to the following:

- The historical environment, comprising a near-coastal lagoon, would have been unattractive as a place of human settlement prior to European occupation, given the presence of diseases deleterious to the health of people and domestic animals.

- The establishment of the town and the port largely precludes the presence of structures or buildings with historical value.

- The nature of the construction of the port, involving massive environmental disturbance, would have destroyed any traces of archaeological, palaeontological or geological sites.

- Much of the greenfield area proposed for the Port development was already transformed by intensive and extensive land uses, including timber and sugarcane plantations.

It is therefore not anticipated that the establishment of the FPP will impact on heritage/palaeontological resources

[1] Aecom (2013). Baseline Heritage Study: Proposed Richards Bay Port Expansion, uMhlathuze Local Municipality, uThungulu District, KwaZulu-Natal.

5.7 SOCIAL

5.7.1 Administrative Structure

The uMhlathuze Local Municipality is located in the uThungulu District Municipality in the North-Eastern part of KwaZulu-Natal. The uMhlathuze LM is bordered by the following LMs within the uThungulu District:
1. Mfolozi (KZ 281)
2. Ntambanana (KZ 283)
3. uMlalazi (KZ 284)

Richards Bay and Empangeni are the most significant economic centres in the Local Municipality and in the District Municipality according to the uMhlathuze SDF Review, 2013/2014[1]. Richards Bay, as a harbour and industrial town, attracts people from surrounding towns, rural settlements and from beyond the district. Empangeni's role as an industrial, commercial and service centre to the settlements of Esikhaleni, Eshowe, Nkandla, Ntambanana and other rural settlements attracts many people to the range of higher order services available in the town.

According to the 2010 Global Insight Statistics, it is noted that the vast majority of economic performance (41.8%) in the district is vested in uMhlathuze Local Municipality, notably in Richards Bay and Empangeni. This area is the third most important in the province of KwaZulu-Natal in terms of economic production and contributed 9.1% of the total GGP1 and 8.5% of the total employment (formal and informal) in 2010.

The uMhlathuze Municipality is the smallest, in terms of geographic area, in the uThungulu District and has an area of 795 km². It has the largest population in the district with an estimated 334, 000 people according to the 2011 Census.

5.7.2 Demographic Profile

The following table provides a breakdown of the land ownership in terms of hectares and percentages (%).

Table 5.2 Land Ownership Breakdown

Ownership	Size (hectares)	Percentage (%)
Other	12460	16
Ingonyama Trust	27953	35
Private	33380	42
Water bodies	5542	7
Total	79334	100

[1] uMhlathuze Local Municipality: (Draft) SDF Review 2013/2014. Master on DMS 974071.

5.7.3 Population and Household Numbers

The uMhlathuze Local Municipality experienced a net population increase of more than 14%between 2001 and 2011. The uMhlathuze Local Municipalities has the smallest household size in the district since 2001. The average household size in uMhlathuze has remained constant at 3.9 from 2001 to 2011.

5.7.4 Education

According to the uMhlathuze Municipal IDP (2012/2017),[1] there is a downward trend in the system of people that complete Grade 12. Most pupils reached secondary schooling but are unable to continue with their studies. This may be a result of immigration of skilled workers into the area.

According to the IDP, 52.4% or scholars achieved an education below Grade 12, whilst there is a decrease in Grade 12 pass rates as the demand for skills has increased in the area.

The municipality has signed a Memorandum of Agreement between uMhlathuze Municipality and Umfolozi FET College and this effort was aimed giving the youth opportunities through skills acquisition to provide training and job opportunities.

5.7.5 Health

According to the uMhlathuze Municipality IDP Review (2014/2015), the Municipality faces a challenge of reacting to urban sprawl, which, results in increased informal settlement, overcrowded schools, ill health and marked spatial disparities.

HIV/AIDS is an epidemic which is increasing at an alarming rate and affects communities negatively. External support to ensure continuous support for efficient and effective service delivery in terms of health related issues. Provision of basic health services and effective healthcare infrastructure, increased financial and human resources in healthcare, awareness and education and poverty alleviate on programmes will reduce the increased incidents of HIV/AIDS and communicable diseases.

5.7.6 Economic Profile

uMhlathuze is characterized by an in-flow of people in search of opportunities thereby increasing pressures on social and infrastructure services (uMhlathuze Municipality IDP Review, 2014/2015).

An analysis of land use zonings was undertaken for the formal urban areas of the Municipality as shown in *Table 5.3*.

[1] uMhlathuze Integrated Development Plan (2012/2017). PDF version on DMS 820202.

Table 5.3 Zoning Percentages in Urban Areas

Zoning	Ha	% Against Total
Commercial	114.02	1.46
Industrial	1695	21.70
General Residential	115.752	1.48
Special Residential	1496.475	19.16
Intermediate Residential	15.87	0.2
Public/Private Open Spaces	540	6.92
Transportation Infrastructure	28.4	0.4
Undetermined	16.686	0.21
Social	353.8	6.86
Other Zonings	3248.997	41.616
Total		100

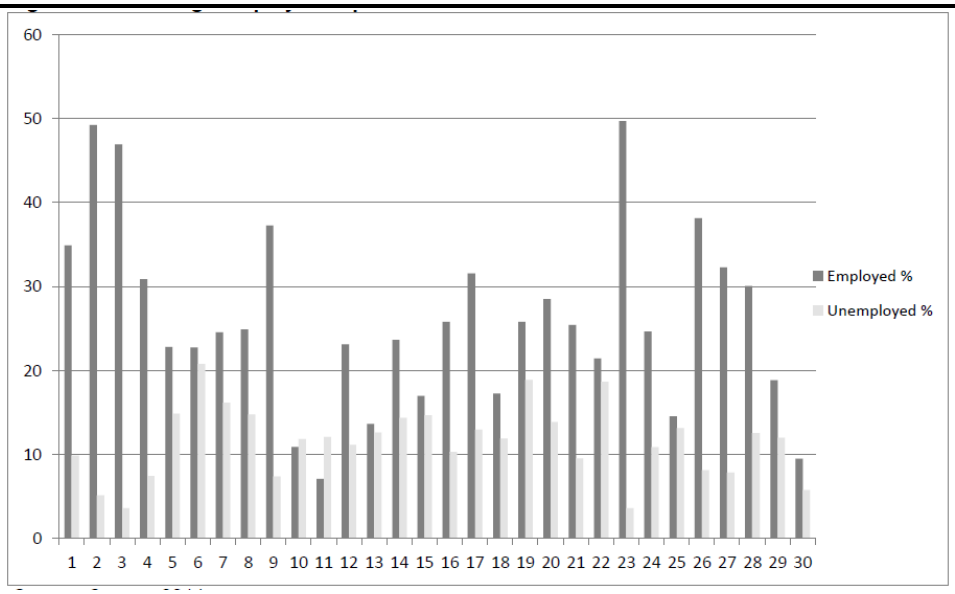
Source: uMhlathuze Municipality IDP Review, 2014/2015

In the general municipal area, special residential zoned land accounts for about 20% and Industrial for 21% of the total. Other zonings include land zoned for conservation, open spaces, municipal purposes and community type facilities or services. Commercial accounts for less than 2% of the zoned land.

Employment

The figure below shows the percentage of persons in the respective municipal wards that are employed and unemployed. The highest percentage employment is in Ward 1, 2, 3, 9, 23 and 29. These wards largely correlate with the developed urban areas of Richards Bay and Empangeni. Unemployment levels seem to be highest (as a percentage) in Wards 6, 19 and 22. These wards largely correlate with areas that are developing (densifying) on the urban periphery of Esikhaleni and Nseleni.

Figure 5.7 Percentage Employment per Ward

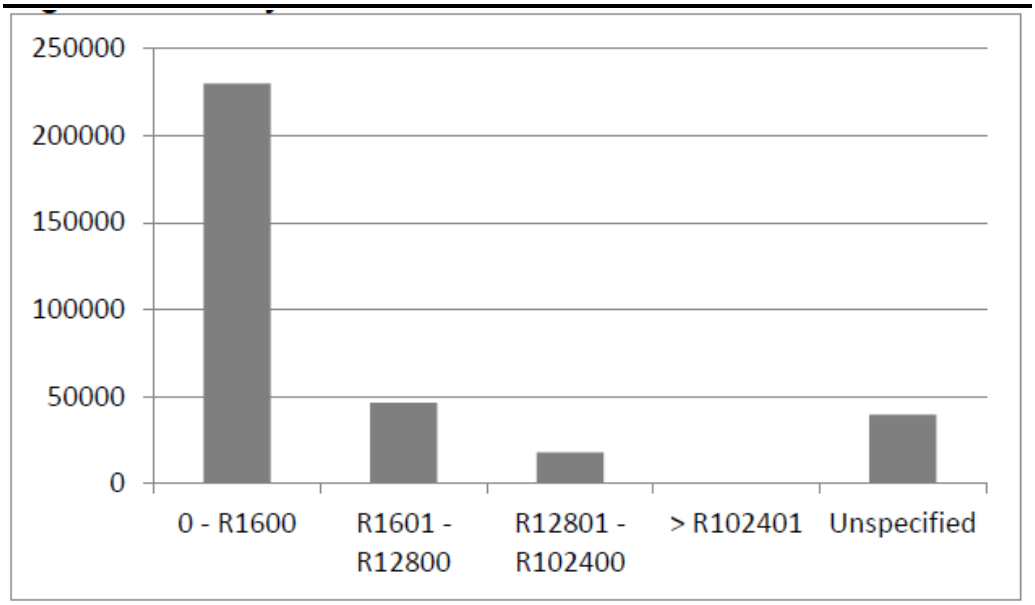


Source: uMhlathuze Municipality IDP Review, 2014/2015

Income and Dependency

Very high numbers of persons in Wards 5, 6, 13, 15, 18, 25 and 29 earn less than R1600 per month as illustrated in *Figure 5.8*.

Figure 5.8 Monthly Individual Income



5.7.7 General Infrastructure and Services

The Richards Bay deep-water port has been influential in the spatial development of the general area in the past and apart from the areas of natural significance, large tracts of land are under commercial agricultural production.

N2, John Ross Highway, P231 and North Central Arterial are major access and linkage systems traversing the Richards Bay Node. West Central Arterial and East Central Arterial provide access and linkage within and between the other Municipal nodes.

Social Infrastructure includes public and private administration offices, recreation, medical facilities, residential, community halls, public transport facilities, educational facilities, social/welfare facilities, SAPS, tourism, churches, cemeteries, magistrate court and petrol filling stations.

Commerce and industrial infrastructure includes harbour, manufacturing, hotel, restaurants, informal trading, retail, finance & insurance, banking facilities, building supplies, furniture, motor showroom and, wholesalers.

Physical infrastructure in the area includes water supply, waterborne system, electrification, solid waste disposal, storm-water management and telecommunication services.

Energy

According to the Environmental Risk Evaluation and Guidelines for the Richards Bay Industrial Development Zone (2010), sustainable energy has become a constraint to development in the Richards Bay area. Overall access to electricity in the municipal area is good (95% of municipal households have electricity). The manufacturing sector, which is the most energy intensive sector in the City of uMhlathuze, consumes 8% of the total power generated in South Africa. Major industrial users of electricity are reliant on low cost electricity for competitiveness. The cost advantage of the current situation is already under threat because of network capacity constraints. Trends towards energy efficiency initiatives in larger industries are noted. These provide opportunities for improving eco-efficiency initiatives in the area, including co-generation.

Waste Management

General, non-hazardous waste is transported to the uMhlathuze Regional Landfill in Empangeni, which is owned by the uThungulu District Municipality and operated by a private contractor. Hazardous waste must be transported to Durban.

6 EIA PROCESS

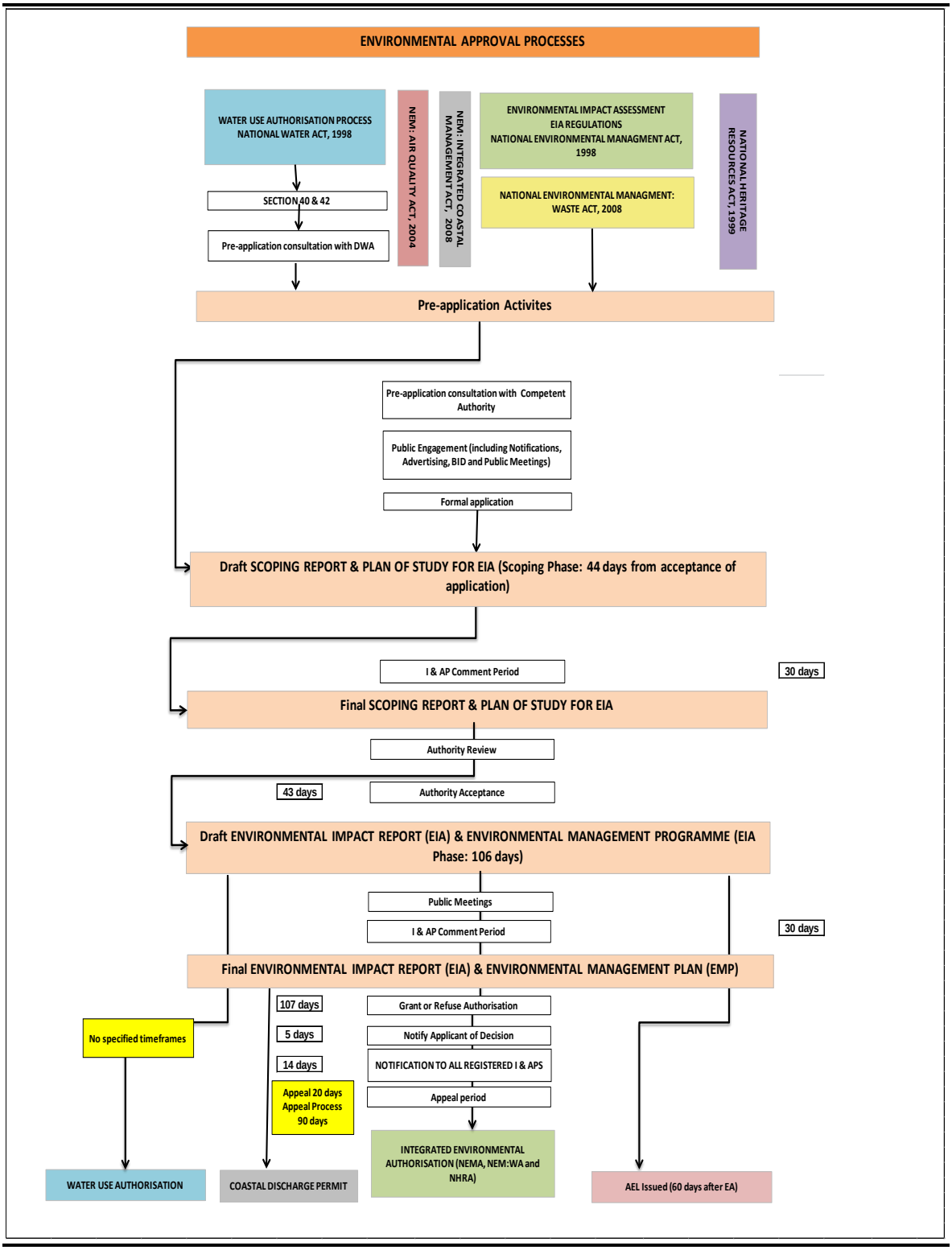
6.1 INTRODUCTION

EIA is a systematic process that identifies and evaluates the potential impacts a proposed Project may have on the physical, biological, chemical, and social environment and develops mitigation measures that will be incorporated in order to eliminate, minimise or reduce these impacts.

As described in *Chapter 2*, the process in South Africa is regulated by the NEMA Environmental Assessment Regulations (GNR R982/2014). The overall Scoping and EIR process is illustrated in *Figure 6.1.*

This EIA process that is being undertaken for the Project is aligned with the requirements of the EIA Regulations (2014).

Figure 6.1 Integrated Environmental Impact Assessment Process



6.2 APPROACH TO EIA PROCESS

The EIA process is initiated through a pre-assessment Public Participation Process (PPP). The pre-assessment process is not a mandatory requirement in terms of the EIA regulations (2014) but a beneficial option for the client and EAP in order to identify key stakeholders and Interested and Affected Parties (I&APs) as well as to identify any fatal flaws at the onset of a project.

This phase is followed by the scoping phase (inclusive of a notice of intent to the authorities), as shown in *Figure 6.1*. During the scoping phase the Terms of Reference for the full EIA is formulated, and requirements from the authorities clarified. The scoping process serves to bring stakeholders on board by means of consultation with relevant government departments, allowing for the identification of potential issues and concerns.

After completion of the scoping phase, detailed specialist studies will be undertaken in order to address issues identified during the scoping phase. Specialists are expected not only to provide baseline information in their particular field of expertise for the study area, but also to take this study further and identify which project actions will result in significant impacts. Consultants are also expected to suggest ways in which these negative impacts could be mitigated, to reduce their severity.

All draft reports are submitted for public review, during which time ERM present the key findings to all interested and affected parties (I&APs). All comments made by I&APs are captured in a Issues and Response Report, and in this report responses to all issues and concerns raised during the public review period are provided.

All recommendations cited in the EIA report must be detailed in an Environmental Management Programme report (EMPr), which defines the actions to be implemented. EMPs are recognised as very important tools for the sound environmental management of projects.

6.3 SCOPING PHASE

A principal objective of the scoping phase is to identify the key environmental, social and health issues and those Project activities with the potential to contribute to, or cause, impacts to the environmental and social receptors.

At the scoping stage, the key issues are identified (often together with input from key stakeholders) and understood to a level which allows the definition of the Plan of Study for the EIA.

Issues that are not relevant are scoped out. This enables the resources for the EIA to be focused on collecting required information and identifying

significant impacts while carrying out specialist studies and stakeholder engagement activities in an effective and efficient manner.

Specifically, the objectives of the scoping phase are to:

- Understand the legislative context and establish a description of baseline conditions;
- Identify project alternatives and preferred options for the proposed development;
- Identify stakeholders and plan or initiate communication with these stakeholders so as to gather issues of concern;
- Identify potential significant impacts; and
- Develop the Plan of Study for the EIA which sets out the proposed approach to the EIA, potential impacts to be evaluated and methodology to be used.

The following steps have been undertaken as part of the scoping phase, and are described below:

- desktop review;
- site visit;
- public participation (see further detail in *Section 6.6*);
- preparation of the Draft Scoping Report, and
- submission of application form.

6.3.1 Desktop Review

An initial review of relevant information was conducted. The desktop review included the following tasks:

- Initial review of relevant legislative and guidance documents;
- Identification and review of secondary data;
- Development of an outline description of the planned Project activities; and
- Development of a plan for stakeholder engagement.

6.3.2 Site Visit

ERM undertook a site visit on 4 September 2015 including a site walkover of the proposed Project sites. The objective was to ground-truth secondary data collected on the site and to assist in the identification of sensitive receptors and resources and define the Plan of Study for the EIA.

6.3.3 Public Participation

Details of the public participation process are provided in *Section 6.6*.

6.3.4 Scoping Report

In accordance with the regulatory requirements stipulated in GNR 984 of the EIA Regulations (2014), this draft Scoping Report (including Plan of Study), has been compiled as part of the EIA process.

The Scoping Report will be made available to stakeholders through the Project website, selected libraries, and hard copies provided on request for a period of 30 days. After the 30 day public comment period a comments and responses report will be compiled and included in the final Report along with any other updates or changes. The final Scoping Report (including Plan of Study) will be submitted to the Department of Environmental Affairs (DEA) for their consideration.

Registered I&APs will be notified once the final Scoping Report has been submitted. The comments and responses report be included in the final Scoping Report and distributed to registered I&APs.

6.3.5 Submission of Application Form

The completed EIA application form will be submitted to the competent authority together with the Draft Scoping Report. In terms of the 2014 EIA Regulations the Final Scoping report is to be submitted to the competent authority within 43 days of receipt of the acknowledgement letter.

6.4 SPECIALIST STUDY PHASE

A number of specialist studies have been identified to address key issues of concern. The findings of these studies will be incorporated into the Environmental Impact Assessment Report (EIR) that will close out the Integration and Assessment Phase. Further information related to the approach to the specialist studies and the impact assessment is contained in the Plan of Study for EIA in *Chapter 7*.

6.5 INTEGRATION AND ASSESSMENT PHASE

The final phase of the EIA is the Integration and Assessment Phase, which is described in detail in the Plan of Study for EIA (Section 7).

The assessment of impacts proceeds through an iterative process considering three key elements:

a) Prediction of the significance of impacts that are the consequence of the proposed development on the natural and social environment.

b) Development of mitigation measures to avoid, reduce or manage the impacts.
c) Assessment of residual significant impacts after the application of mitigation measures.

The Draft EIR will be made available to I&APs for a 30 days public comment period. Registered and identified I&APs will be notified of the release of the Draft EIR and where the report can be reviewed. A public meeting will be held where the findings of the specialist studies and outcomes of the integration and assessment phase will be presented and discussed.

Comments received on the Draft EIR will be assimilated and the EIA project team will provide appropriate responses to all comments. A Comments and Responses Report will be appended to the Final EIR, which will be submitted to DEA for decision-making.

All registered I&APs will be notified when an Environmental Authorisation has been issued by DEA. A 90 day (maximum time should an appeal be submitted) appeal period will follow the issuing of the Environmental Authorisation.

6.5.1 Proposed Timeframe for the EIA

The estimated process schedule for the EIA is presented in *Table 6.1*. Section 7 of this report presents a more detailed Plan of Study for the EIA.

Table 6.1 EIA Schedule

Task	Timing
Stakeholder Comment on Draft Scoping Report and Plan of Study for EIA	16 November 2015- 15 December 2015
Finalise Scoping Report and Plan of Study for EIA and submit to DEA	17 December 2015- 7 January 2016
Acceptance of Scoping Report received from DEA	27 January 2016
Specialist studies	22 October 2015- 27 January 2016
Prepare Draft EIR and EMP	1 December2015- 5 February 2016
Stakeholder Comment on Draft EIR and EMP	8 February 2016- 8 March 2016
Finalise and submit EIR and EMP to DEA	21 March 2016

6.6 PUBLIC PARTICIPATION DURING SCOPING

6.6.1 Objectives of Public Participation

The public consultation process is designed to provide information to and receive feedback from interested and affected parties (I&AP) for use throughout the EIA process, thus providing organisations and individuals with an opportunity to raise concerns and make comments and suggestions regarding the proposed Project. By being part of the assessment process, stakeholders have the opportunity to influence the Project layout and design, input into mitigation measures and technical solutions as well as the Plan of Study for the EIA.

Public consultation is an inclusive and culturally appropriate process which involves sharing information and knowledge, seeking to understand the concerns of others and building relationships based on collaboration. It allows stakeholders to understand the risks, impacts and opportunities of the Project in order to achieve positive outcomes.

The main objectives of public participation are:

i. to ensure that adequate and timely information is provided to those potentially affected by the Project;

ii. to provide these groups with sufficient opportunity to voice their opinions and concerns; and

iii. to ensure that comments are received in a timely manner so that they can be taken into account in Project decisions.

6.6.2 Legislative Context

Public participation with regards to EIA's in South Africa is determined by the principles of the National Environmental Management Act (NEMA) (Act 107of 1998, as amended) and elaborated upon in 'GN 657: Guideline 4: Public Participation' (Department of Environmental Affairs and Tourism, 19 May 2006), which states that: "*Public participation process means a process in which potential interested and affected parties (I&APs) are given an opportunity to comment on, or raise issues relevant to, specific matters.*"

Public participation is required for an environmental authorisation process in terms of the EIA Regulations GN R.982 (December 2014).

6.6.3 Public Participation Tasks

The public participation tasks described in *Table 6.2* were undertaken during the Scoping Phase:

Table 6.2 Public Participation Tasks: Scoping Phase

Activity	Description and Purpose
Pre-Application	
Preparation of a preliminary stakeholder database	A preliminary database has been compiled of authorities (local and provincial), Non-Governmental Organisations, neighbouring landowners and other key stakeholders (refer to Annex B). This database of registered I&APs will be maintained and updated during the ongoing EIA process.
Advertisement of the Project and Open House Meeting	The Project was advertised on 19 October 2015 in the following papers: *The Mercury* (English), *The Zululand Observer* (English) and *Ilanga* news (isiZulu). See proof of advertisements in Annex B2.2).
Initial Key Informant Meetings	Meetings were held with the following key informants and notes from these meetings are attached in the Annexes specified below: 1. Richards Bay IDZ (refer to Annex B5.1) • Khanyi Dlamini - Specialist Planner in the office of the CEO. • Percy Langa - Environmental Manager. 2. Transnet Ports Authority (refer to Annex B5.2) • Preston Khomo - Port Manager. • Basil Ngcobo - Port Engineer. • Vumani Ndlovu - Environmental Manager. • Cobie Snyman - Real Estate. • Sabelo Mdlalose - Port Captain. 3. uMhlathuze Local Municipality (refer to Annex B5.3) • Frederik Bosman (Councillor for Ward 1). • Sharin Govender (uMhlathuze Environmental Manager) (16-Oct). 4. Ezemvelo KZN Wildlife (refer to Annex B5.4) • Dominic Wieners (19-Oct). Presentation to the Richards Bay IDZ Environmental Review Committee (refer to Annex B5.5) (10-Nov) Feedback received from these meetings has been used to inform the scoping process and engagement going forward.
Open House Meeting	An open house meeting was held at Premier Hotel The Richards, Richards Bay on 3 November 2015 to present the proposed Project and solicit input from stakeholders into the scoping process. Presentation, attendance registers and meeting notes are included in Annex B3.
Development of an Initial Comments and Response Report	All comments received during the initial consultation period and at the open house meeting were recorded into a Comments and Response Report (attached in Annex B4).
Placing of Site Notices	Site notices will be placed at the following locations: • The IDZ office; • The Richards Bay Public Library; • The uMhlathuze Municipality Office notice board; • At the entrance to the Project site.

Activity	Description and Purpose
Release of draft Scoping Report for Public Comment	The draft Scoping Report has been released for public comment from 16 November 2015- to 15 December 2015 Notifications were sent to all stakeholders on the database and the report was made available online and in the following libraries. All comments received will be included in the final Scoping Report.

Issues Raised During Initial Stakeholder Consultation

Initial key informant meetings were held in Richards Bay on 15 October 2015, Durban on 16 October 2015 and by teleconference on 19 October 2015. The key objective of these meetings was to introduce the Project to key role players in Richards Bay, and understand their questions and concerns (refer to Annex B5 for meetings notes). Feedback from these meetings was used to inform the format and content of the open house meeting that followed on 3 November 2015. Summary of key issues raised during the initial meetings is provided in the Table below.

Table 6.3 Summary of Key Issues Raised

No.	Key Issues
1.	There is concern about the lack of water in Richards Bay, where the Project would get water from, and whether a Water Use Licence would be required.
2.	Questions were raised about the project (and its location and impacts) in the context of other developments currently taking place or planned to take place in the port.
3.	Stakeholders wanted to know what type of employment opportunities the Project will create, and how many.
4	Stakeholders wish to understand what Transnet's role is.
5.	Questions were raised around what alternatives are being explored in term of site locations and technology alternatives.
6.	There is concern around air emissions, the existing air quality in Richards Bay and the cumulative impacts of the three projects being proposed by the IPP office (i.e. the FPP, the on-land early power project and the LNG import facility).
7.	Stakeholders wanted to know more about the specialist studies being undertaken as part of the EIA.
8.	It was suggested that ERM present at the environmental review committee (ERC) meeting chaired by the Richards Bay IDZ, as many important role players are active on the committee (done on 10-Nov).
9.	It was noted that there is an aquaculture research project currently being run in the exact location proposed for the FPP. However, it will only be running to November 2016.
10.	Concern raised about the need for biodiversity offsets should the footprint of any component of the development impact on a sensitive habitat. The lack of successful case studies with respect to offsets was highlighted as a concern.

7 IDENTIFICATION OF POTENTIAL IMPACTS

7.1 INTRODUCTION

A key part of the scoping phase is a preliminary analysis of the ways in which the Project may interact (positively and negatively) with environmental (including physical and biological receptors) and social resources or receptors. The impacts that are identified as potentially significant during the scoping process provide focus for the studies undertaken during the EIA phase. Each of the potentially significant impacts will be discussed and assessed in more detail in the EIR.

In order to complete the scoping phase, the EIA team has drawn upon:

- knowledge of sources of potential impacts associated with power projects;
- an identification of the main environmental and social resources and receptors from the site reconnaissance visit and review of existing published data sources; and
- the results of the initial scoping consultation.

This *Chapter* provides a preliminary identification and evaluation of the environmental and social impacts of the proposed Project.

7.2 RESOURCES AND RECEPTORS

For this Project the following main resources and receptors were determined to be relevant.

- *Physical Environment:* ambient air quality, global climate, ambient noise levels, vibration, groundwater quality, surface water quality, surface and groundwater flows and levels, soil, topography, landscape and visual, use of natural resources.
- *Biological Environment:* terrestrial habitats, terrestrial flora, terrestrial fauna, aquatic habitats, aquatic flora and fauna, protected areas.
- *Human Environment: c*ommunity health, safety and security; local community; road traffic and transportation; cultural heritage; aesthetics; tourism/recreation; employment and income; economy; public utilities; fishing and aquaculture.

7.3 OUTCOME OF THE SCOPING PROCESS AND IMPACT IDENTIFICATION MATRIX

The interactions of project activities with resources and receptors were identified during the Scoping Process.

Activities that will occur in the various development stages (site clearance, construction of project components, operation and decommissioning) were identified and preliminarily ranked in *Table 7.2).*

The evaluation of the significance of an interaction between an activity and an environmental or social resource and/or receptor was made and significance was rated according to the following scale:

Table 7.1 Interaction Matrix

	No interaction
I	Interaction with the environment or receptor which is <u>not</u> expected to be significant
S	Interaction with the environment or receptor that <u>could</u> be significant
p	Positive interaction

Potentially significant interactions are summarised in *Section 7.4*. The impacts associated with the Project will probably be narrower in scope than what is identified in these tables because mitigation measures will be built into the project design. However, the impact identification process is intended to be broad at this stage to consider a wide range of possibilities and inform project mitigation priorities.

7.4 SUMMARY OF POTENTIAL IMPACTS AND RISKS

The following is a summary of the potential impacts and risks determined through the scoping process. The Project will result in both associated impacts (i.e., those that will occur to some degree) and risks (i.e. impacts that might occur). The impacts and risks identified through this process will be assessed in detail in the EIA.

Impacts and risks can be grouped as follows:

- Physical footprint (physical presence of transmission line and switchyard);
- Air emissions;
- Noise (construction, power plant operation);
- Waste and wastewater management;

- Socioeconomic impacts (livelihoods);
- Non-routine discharges (oil spill and chemical spill);

- Cumulative impacts.

A screening process was completed to "screen out" non-significant issues. Those issues will not be considered further in the EIA and potential impacts that will be considered as part of the Scoping and EIA phases are described in *Table 7.2* and given a preliminary status in *Table 7.3* and *Table 7.4.*

Table 7.2 Description of Potential Impacts

Risk/Impact Grouping	Potential Impacts
Physical Footprint	• Site clearance for the construction of the access roads, transmission lines, and switchyard in greenfield areas will result in removal of vegetation and habitat, thus resulting in an impact on terrestrial fauna. • Presence of the FPP may have an impact on marine ecology and cultural heritage. • Presence of the transmission lines and switchyard may have an impact on terrestrial flora and fauna and cultural heritage.
Air Emissions	The key activities that may impact air quality include the following: • Dust from site clearance and construction activities. • Emissions from the combustion of fuel. • Engine emissions from construction and operational traffic. • Emissions of air pollutants. • Emissions from the power generating process.
Noise	The key impacts identified include the following: • Noise from construction of transmission line and switchyard may have an impact on sensitive receptors. • Noise from FPP operation may have an impact on sensitive receptors. • Noise and vibration from construction and operation traffic along main transport/access routes. • Noise may result from FPP related activities such as mooring of the vessels, power generation, refuelling, etc.
Waste and Wastewater Management	• Non-hazardous and hazardous wastes will be generated that will need to be transported and disposed of in a manner protective of the natural and human environment. • Improper storage, handling and transport of solid and liquid wastes from the FPP may lead to loss of containment and spillages which could give rise to water contamination.
Socio-economic	*Community Health Safety and Security* • Equipment and activities may create noise and vibration and changes to air quality during construction, operations and demolition that could impact human health; • Movement of materials and workers during construction, operation and demolition could impact public safety; and • The presence of workers and opportunistic workers in the project area could result in a change in the disease profile of the local population in particular vector borne diseases, communicable diseases and sexually transmitted infections.

Risk/Impact Grouping	Potential Impacts
	Worker Health & Safety • Hazardous construction, operational or decommissioning activities could impact worker health and safety; and • Handling of hazardous materials could impact worker health and safety.
	Local Community Demographics • Influx of workers from outside of the local Project area will result in a change in demographics of the local communities; and • The presence of a construction workforce hosted within the Project area will result in changes to demographics.
	Local and Macro Economy • Procurement of goods and services required by the Project during construction, operation and decommissioning of the Project may enhance the local economy both directly and indirectly; and • The presence of construction, operation and decommissioning workers in the Project area may enhance the local economy through their purchase of local goods and services.
	Cultural/Heritage Resources • Construction activities (transmission line and switchyard) could have an impact on local cultural sites (paleontological); and • The presence of workers in the Project area, transportation of materials and equipment to the construction sites may impact on cultural areas.
Soils	Improper storage, handling and transport of construction material, chemicals, wastes and demolition materials may lead to spillages which could give rise to soil contamination.
Marine	The key impacts identified include the following: • Leaks or accidental releases during construction, operation and decommissioning activities could impact on the marine environment. • Marine habitats, fauna and flora may be impacted by the FPP water supply taken from the sea. • Depending on the technology selected, water used in the cooling process may be discharged into the marine environment 5-10 degrees warmer and this may impact marine life.
Cumulative Impacts	A cumulative impact is defined as an impact that results from incremental changes caused by other past, present or reasonably foreseeable actions together with the Project. The cumulative impact assessment will consider the impact of the Project along with the impacts of other industrial developments in the area that may also impact on the same receptors and resources. The following categories of cumulative impacts will be addressed in the EIR: • Air; • Noise; • Biodiversity; • Socio-economic effects; • Infrastructure and services.

Table 7.3 Terrestrial Scoping Matrix

	Project Activity	Ambient Air Quality	Global Climate	Noise	Vibration	Groundwater Quality	Surface Water Quality	Hydrology	Geohydrology	Soil	Topography	Landscape & Visual Character	Use of Natural Resources	Terrestrial Habitats	Terrestrial Flora	Terrestrial Fauna	Aquatic Habitats (Freshwater)	Aquatic Flora & Fauna (Freshwater)	Protected Areas	Community Health, Safety & Security	Local Community	Road Traffic & Transportation	Cultural Heritage	Aesthetics (Visual)	Tourism/ Recreation	Employment & Income	Economy	Public Utilities
A	**On-Shore Site Preparation for Transmission Line and Switchyard**																											
1	Employment of labour																			s	s					p	p	
2	Procurement of materials, equipment and services																									p	p	
3	Transportation of manpower, equipment and materials to/ from the site	i	i	i		s	s			s				s	s	s				i		i						
4	Presence of work force													i	i	i				s	s		i				p	
5	Site clearance (incl. laydown areas, camps, offices, access roads, backfilling, compacting, grading and trenching and operation and maintenance of mobile equipment).	i	i	i						i	i	i		s	s	s			i				s	i				s
6	Temporary power generation	i	i	i																								
7	Hazardous and non-hazardous waste disposal																											s
8	Wastewater generation and disposal						i		i	i				i	i													s
9	Water supply								i																			s
B	**Construction of On-Shore Transmission Line and Switchyard**																											
1	Employment of labour																			s	s					p	p	
2	Procurement of materials, equipment and services																									p	p	
3	Transportation of manpower, equipment and materials to/ from the site	i	i	i										i	i					i		s						
4	Presence of work force													s	s	s				s	s						p	
5	Earthworks (all managed within footprint of project)									i													s					
6	Foundation building and piling			i	i											i					i							
7	Material storage, handling and use on-site	i		i								i												i				
8	Temporary power generation (mobile generators)	i	i	i																								
9	Construction and installation of transmission line and switchyard			i						i	i	i							i					i				
10	Hazardous and non-hazardous waste disposal																											s
11	Wastewater generation and discharges																											s
12	Water supply								i																			s
C	**Operation of Transmission Line and Switchyard**																											
1	Gas Pipeline (and maintenance)																											s
3	Transmission of electricity			i																i								
4	Water supply								i																			s
5	Procurement of materials and services																									p	p	
6	Employment of labour																				i					p	p	
7	Hazardous and non-hazardous waste disposal																											s
8	Physical presence of structures and facilities (transmission line and switchyard)											s			s	s			i					s	s			
9	Shut down and start up for maintenance	i	i																								p	

	Project Activity	Ambient Air Quality	Global Climate	Noise	Vibration	Groundwater Quality	Surface Water Quality	Hydrology	Geohydrology	Soil	Topography	Landscape & Visual Character	Use of Natural Resources	Terrestrial Habitats	Terrestrial Flora	Terrestrial Fauna	Aquatic Habitats (Freshwater)	Aquatic Flora & Fauna (Freshwater)	Protected Areas	Community Health, Safety & Security	Local Community	Road Traffic & Transportation	Cultural Heritage	Aesthetics (Visual)	Tourism/ Recreation	Employment & Income	Economy	Public Utilities
10	Transmission line maintenance														i													
C	**Decommissioning of Transmission Line and Switchyard**																											
1	Vehicular movements and traffic	i	i	i									i							i		i						
2	Demolition of buildings and removal of infrastructure	i	i	i						i		i		i	i	i				i	i						p	
3	Waste generation and disposal			i						i												i						s
4	Wastewater generation and disposal																											s

	No interaction
i	An interaction with the environment or receptor which is not expected to be significant
s	An interaction with the environment or receptor that could be significant (Also identifies data gaps)
p	Denotes a positive interaction

Table 7.4 Marine Scoping Matrix

	Project Activity	Ambient Air Quality	Global Climate	Noise	Vibration	Use of Natural Resources	Seabed	Sediment	Marine Water Quality	Marine Habitats	Marine Flora	Marine Fauna	Protected Areas	Community Health, Safety & Security	Local Community	Workforce	Road Traffic & Transportation	Fishing & Navigation	Marine Traffic & Transportation	Cultural Heritage	Aesthetics (Visual)	Tourism/ Recreation	Employment & Income	Economy	Public Utilities
A	**Siting of FPP and offshore components**																								
1	Employment of labour													s	s								p	p	
2	Procurement of materials, equipment and services																						p	p	
3	Transportation of equipment and materials	i	i	i										i			i								
4	Presence of work force													s	s									p	
5	Hazardous and non-hazardous waste disposal																								s
6	Wastewater generation and disposal									s	s	s													
7	Water supply					s			s	i															s
8	Siting of marine infrastructure			s	i			s	s	i	s	s			i										
B	**Operation of FPP**																								
1	Re-fuelling of the FPP			i					s	s															s
2	Raw water demand / water supply								s	i															s
3	Procurement of materials and services																						p	p	
4	Employment of labour														i								p	p	
5	Transportation of materials and products																	i							
6	Process wastewater/ effluent discharges								s	s															s
7	Hazardous and non-hazardous waste disposal								i	i	i														
10	Physical presence of marine structures and facilities												i								s	s			
11	Operation and maintenance of FPP								**s**	**s**	**s**														
D	**Decommissioning**																								
1	Transport of marine infrastructure									i	i	i							s						
3	Waste generation and disposal																								i
4	Wastewater generation and disposal									i	i	i													i

	No interaction
I	An interaction with the environment or receptor which is not expected to be significant
S	An interaction with the environment or receptor that could be significant (Also identifies data gaps)
p	Denotes a positive interaction

8 PLAN OF STUDY FOR EIA

8.1 INTRODUCTION

The screening and preliminary assessment of impacts represents an initial step of the EIA process. This step is followed by a scoping of the Project's potential impact and identification of key issues and includes consultations with key stakeholders.

A key outcome of screening and scoping activities (described in Chapter 6) is the Plan of Study for the EIA. The purpose of the Impact Assessment Phase of an EIA is:

- to address issues that have been raised during the Scoping Phase;
- address and assess alternatives to the proposed activity in a comparative manner;
- address and assess all identified significant impacts; and
- formulate mitigation measures.

This *Chapter* provides the proposed Plan of Study for the EIA and is structured as follows.

- Overview of the Impact Assessment Phase;
- Specialist studies;
- Impact Assessment methodology;
- Proposed structure of the EIA Report; and
- Provisional schedule for the EIA process.

8.2 SPECIFIC CHALLENGES AND APPROACH TO THIS EIA

The EIA process has been structured to accommodate a variety of project design alternatives that may be submitted by Independent Power Producers as part of the Department of Energy's IPP Procurement Programme. As a result, the EIA is aimed at assessing the worst case scenario so as to allow for the mitigation measures to cover worst case impacts. The project description defined in Section 3 is sufficiently detailed to allow for the assessment of the most likely significant effects.

This approach is referred to as the '**Rochdale Envelope'** Approach (Infrastructure Planning Commission, Advice Note 9: Using the Rochdale Envelope[1]) which is an acknowledged way of dealing with an application comprising an EIA where details of a project have not been resolved at the time when the assessment is undertaken. The '**Rochdale Envelope'** Approach has been adopted in the UK by the Infrastructure Planning Commission when

[1] Infrastructure Planning Commission (2011). Advice Note 9: Using the Rochdale Envelope.

there are good reasons why the details of the whole project are not available when the EIA application is submitted.

As development progresses and more detail and certainty are available, further information regarding potential impacts can be provided (if not already addressed in the EIA).

Some details of a proposed development may be unknown to the applicant at the time of the application; the Rochdale Envelope allows for a flexible approach of evaluating the maximum potential adverse effects of that particular Project.

There are various factors necessitating the need for this approach to the Floating Power Plants EIA including:

- There is uncertainty as to whether the successful IPP will develop the FPP Project in terms of a power barge or a power ship;
- The technology to be used by the successful IPP is unknown at this stage i.e. air-cooled or water-cooled;
- There is no existing of LNG supply and therefore liquid fuel types are being considered for the initial stage of the project (a preferred fuel type has not yet been selected).

To evaluate the potential impacts of the proposed FPP in a meaningful way, the realistic 'worst case' scenario impacts will be assessed.

8.3 *OVERVIEW OF IMPACT ASSESSMENT PHASE*

Once public comments on the Scoping Report have been concluded, the Final Scoping Report will be submitted to the DEA for consideration. This represents the end of the Scoping Phase of the EIA. The Impact Assessment phase is described in more detail below.

8.3.1 *Assessment of Alternatives*

As previously mentioned, one of the objectives of an EIA is to investigate alternatives to the proposed project. Fundamental and Incremental Alternatives have been discussed in Section 3.8. These alternatives will be carried through to the EIA phase for further assessment and will be compared to the "no go" or baseline option.

8.3.2 *Impact Assessment*

Following the Scoping phase of the Project, the EIA team will:

- update and finalise the technical project description as further engineering details become available, working closely with project engineers to confirm information such as the final facility layout, and construction and operation plans;

- conduct additional consultation and further refine the scope of the EIA as necessary;

- collect additional baseline data through desktop research and field studies in the Project Area of Influence (AoI) to complete a comprehensive description of the environmental and social conditions;

- undertake an impact assessment of the project activities interactions with the key environmental and social resources and receptors;

- develop mitigation and enhancement measures and outline an environmental and social management plan (ESMP) including an approach for monitoring; and

- report findings in a comprehensive EIR.

8.3.3 Stakeholder Engagement Activities

During the Impact Assessment phase the following stakeholder engagement activities will be undertaken:

- The draft EIR and EMP document will be made available for a comment period to stakeholders and the relevant authorities.

- A notification letter will be sent to all registered I&APs on the project database. This letter will invite I&APs to comment on the draft EIR.

- Newspaper adverts will be placed in local newspapers notifying stakeholders of the availability of the Draft EIR report for review and inviting them to public meetings.

- A public open house will be held during the comment period in order to present the findings to stakeholders.

- The final EIR will then be compiled and submitted to the DEA for decision-making. All comments made during the comment period will be compiled in a comments and responses report in the final EIR.

- I&APs will be notified of the Environmental Authorisation and the statutory appeal period.

8.3.4 Authority Interaction

Authority consultation is integrated into the public consultation process, with additional one-on-one meetings held with the lead authorities where necessary. It is proposed that the competent authority (national DEA) as well as other lead authorities will be consulted at various stages during the EIA process. The DoE will liaise closely with the DEA on the timeframes for DEA review and decision-making with regards to the Final Environmental Impact Assessment Report.

8.4 SPECIALIST STUDIES

Various specialist studies will be conducted with the objectives as follows:

- Develop a sound understanding of the affected environment based on existing information and previous working knowledge of the area (limited primary baseline data collection will be undertaken);
- Assist in defining possible constraints associated with the proposed project and transmission line alignment;
- Determine the potential indirect, direct and cumulative impacts on environmental resources and social receptors ;
- Advise on mitigation measures for identified significant impacts and measures to enhance positive opportunities/impacts of the project;
- Provide details for ongoing monitoring during the construction and operational phases.

8.4.1 Defining the Area of Influence (AoI)

The extent of the effect of a project activity on a particular physical, biological or social resource is termed the Area of Influence (AoI).

Specifically, the AoI encompasses the following:

- the area likely to be affected by the Project its facilities and planned activities, and unplanned, but predictable development caused by the Project that may occur later or at a different location ;
- associated facilities, which are not part of the Project but are required and would not have been constructed or expanded if the Project did not exist and without which the Project would not be viable; and
- cumulative impacts that result from the incremental impact on areas or resources directly impacted by the Project from other existing, planned or reasonably defined developments.

The impact assessment considers that the AoI will vary depending on the type of effect, but in each case it is defined to include the entire Project area where it is likely that significant impacts could result. A conservative but reasonable approach will be taken in defining the AoI.

8.4.2 Desktop Studies

Desktop studies shall be undertaken to acquire environmental and social data for the EIA study. Materials to be considered shall include other EIAs, articles, reports, maps, and photographs. A literature search will be carried out to identify publically available research and scientific reports with relevance to the Project site and general area. Some information already exists, including:

- Various EIAs conducted in the immediate and surrounding area;
- air quality monitoring data from a number of stations in the area;
- Critical Biodiversity Area mapping;
- The Richards Bay Municipality Environmental Management Framework; and
- Local Municipality IDPs.

As a result of the amount of available baseline data in the project area, it is unlikely that detailed primary baseline studies will be undertaken.

8.4.3 Identified Specialist Studies

A number of issues have been identified during this Scoping Study which requires specialist studies to understand the potential impact in more detail. The following specialist studies have been identified to address the key issues and data gaps:

- Air Quality;
- Noise;
- Terrestrial Ecology;
- Cultural and Heritage;
- Palaeontology;
- Marine Ecology;
- Marine Modelling (plume dispersion and oil spill modelling);
- Socio-economic; and
- Quantitative Risk Assessment (QRA).

The below table identifies the provisional Terms of Reference for each proposed specialist study.

Table 8.1 Scope of Work for Terrestrial Specialist Studies

Topic	Terms of Reference
Cultural and heritage	• Attendance and participation in an introductory workshop; • Desktop review of the available information and review of available mapping; • Physical survey of transmission line route to identify the presence of cultural heritage sites and their importance; • Preparation of a baseline environment description. • Application/notice of intent (NiD) to be developed and submitted to the Amafa aKwaZulu Natali. NiD to include paleontology inputs for the paleontology specialist; • Identification of cultural heritage impacts associated with the proposed development. Provide input into the comments and response report to be prepared as part of the stakeholder engagement process during the Scoping and Impact Assessment Phases of the Project; • Undertake an impact assessment of direct, indirect and cumulative impacts; • Attendance and participation in a mitigation workshop; • Document results of the impact assessment including proposed mitigation measures and ongoing monitoring requirements and chance find procedures; • Input into the environmental management plan.
Palaeontology	• Attendance and participation in an introductory workshop. • Desktop review of the available information and review of available mapping. • Physical survey of transmission line route to identify the presence of palaeontological sites and their importance; • Preparation of a baseline environment description. • Identification of palaeontological impacts associated with the proposed development. Provide input into the comments and response report to be prepared as part of the stakeholder engagement process during the Scoping and Impact Assessment Phases of the Project; • Undertake an impact assessment of direct, indirect and cumulative impacts; • Document results of the impact assessment including proposed mitigation measures and ongoing monitoring requirements and chance find procedures;; • Attendance and participation in a mitigation workshop; • Input into the environmental management plan.
Social	• Attendance and participation in an introductory workshop; • Desktop review of available secondary social baseline data for the proposed sites and immediate surrounds; • Identify gaps in baseline data to be addressed through primary baseline data collection; • Collection of additional primary social baseline data where required; • Identification of social impacts associated with the proposed development. Provide input into the comments and response report to be prepared as part of the stakeholder engagement process during the Scoping and Impact Assessment Phases of the Project; • Undertake an impact assessment of direct, indirect and cumulative impacts; • Document results of the impact assessment including proposed mitigation and ongoing monitoring requirements; • Attendance and participation in a mitigation workshop; • Input into the environmental management plan.
Air quality	• Attendance and participation in an introductory workshop; • Collection and assessment of available ambient air quality data and information to describe the current state of the receiving atmospheric

Topic	Terms of Reference
	environment; • Prepare a baseline environment description; • Document all regulatory requirements and relevant air quality standards and guidelines; • Collect an inventory of likely atmospheric emissions for the different technology, design and input alternatives and advise on the likely envelope for the impact assessment; • Identification of air quality impacts associated with the proposed development. Provide input into the comments and response report to be prepared as part of the stakeholder engagement process during the Scoping and Impact Assessment Phases of the Project • Undertake a qualitative comparative assessment for the different technology, design and input alternatives; • Undertake dispersion modelling in accordance with the legislation for the envelope of the impact assessment; • Assessment of air quality impacts of the Project and the implications for human health by evaluating predicted ambient concentrations of air pollutants with the National Ambient Air Quality Standard (NAAQS) ; • Undertake an impact assessment of direct, indirect and cumulative impacts; • Document results of the impact assessment including proposed mitigation; • Input into the environmental management plan; • Describe monitoring measures for the construction, operation and decommissioning phases of the project; • Attendance at the stakeholder feedback meetings; • A workshop with the client to discuss the results of the study and potential mitigation and ongoing monitoring requirements; • Meeting with the air quality regulators to introduce the project and refine scope of work for the air emissions license application.
Terrestrial Ecology (Transmission Line & Switch Yard)	• Attendance and participation in an introductory workshop; • Collection of available baseline biodiversity data to establish the biodiversity value of the study area, particularly hotspots where biodiversity is concentrated and / or where populations of threatened species, Red Data Species, conservation worthy species, medicinal plants and critical habitats are confirmed to occur. Areas to be mapped and used to inform the transmission line alignment; • Physical survey of transmission line route to identify sensitive biodiversity habitats or species; • Prepare a baseline environment description including a description of fauna, flora and wetlands (including mapping); • Identify ecological impacts associated with the proposed development. • Provide input into the comments and response report to be prepared as part of the stakeholder engagement process during the Scoping and Impact Assessment Phases of the Project; • Undertake an impact assessment of direct, indirect and cumulative impacts; • Attendance and participation in a mitigation workshop; • Document results of the impact assessment including proposed mitigation and ongoing monitoring requirements; • Input into the environmental management plan.
Noise	• Attendance and participation in an introductory workshop; • Collection and assessment of available ambient noise levels and information to describe the current state of the receiving atmospheric environment; • The identification of potential noise-sensitive receptors using available information; • Site visit to assess the local sound character and define the status of any identified potential noise-sensitive developments; • Undertake noise measurements **if required** to assist in the definition of the baseline environment; • Prepare a baseline environment description ; • Advise on the relevant noise standards and guidelines relevant to the project;

Topic	Terms of Reference
	• Collect an inventory of noise emissions for the different technology, design and input alternatives and advise on the likely envelope for the impact assessment; • Identify noise-related impacts associated with the proposed development. Provide input into the comments and response report to be prepared as part of the stakeholder engagement process during the Scoping and Impact Assessment Phases of the Project; • Undertake a qualitative comparative assessment for the different technology, design and input alternatives; • Undertake noise modelling in accordance with the legislation for the envelope of the impact assessment; • Assess noise impacts of the Project and the implications by evaluating predicted noise levels against the legislative requirements; • Undertake an impact assessment of direct, indirect and cumulative impacts ; • Document results of the impact assessment including proposed mitigation and ongoing monitoring requirements; • Input into the environmental management plan; • Attendance and participation in a mitigation workshop; • Describe monitoring measures for the construction, operation and decommissioning phases of the project.

Table 8.2 Scope of Work for Marine Specialist Studies

Resource	Terms of Reference
Air Quality	Marine components dealt with in the terrestrial specialist study ToR above.
Marine Ecology	• • Collection of available baseline marine biodiversity data to establish the biodiversity value of the study area, particularly hotspots where biodiversity is concentrated and / or where populations of threatened species, Red Data Species, conservation worthy species, and critical habitats are confirmed to occur. Areas to be mapped; • Prepare a baseline environment description including a description of marine fauna and flora, sediment and water quality and hydrodynamics; • Identify impacts associated with the proposed development. Provide input into the comments and response report to be prepared as part of the stakeholder engagement process during the Scoping and Impact Assessment Phases of the Project; • Undertake an impact assessment of direct, indirect and cumulative impacts taking into consideration the outputs of the marine modelling studies; • Attendance and participation in a mitigation workshop; • Document results of the impact assessment including proposed mitigation and ongoing monitoring requirements; • Input into the environmental management plan.
Marine Modelling (plume dispersion and oil spill modelling)	• Attendance and participation in an introductory workshop; • Collection and review of available information and data and development of a baseline report; • Apply advanced hydrodynamic models to assess the physical marine impacts of the project. The following models will be compiled: o A three-dimensional hydrodynamic model of the site to simulate waves, currents and water temperatures due to tides, wind and atmospheric forcing, o Hot water plume modelling (model the dispersion of the thermal plume), o Oil spill modelling. • Liaison with marine ecologist to assist in the interpretation of impacts. • Attendance and participation in a mitigation workshop.
QRA	• Attendance and participation in an introductory workshop; • Collection of available baseline; • Identify hazard sources and process blocks; • Undertake consequence and frequency modelling to calculate risks; • Undertake an impact assessment ; • Input into the environmental management plan; • Attendance and participation in a mitigation workshop; • Describe monitoring measures for the construction, operation and decommissioning phases of the project.
Socio-economic	Marine components dealt with in the terrestrial specialist study ToR above.

8.5 IMPACT ASSESSMENT METHODOLOGY

The adequate assessment and evaluation of the potential impacts and benefits that will be associated with the proposed Project necessitates the development of a methodology that will reduce the subjectivity involved in making such evaluations. A clearly defined methodology is used in order to accurately determine the significance of the predicted impact on, or benefit to, the surrounding natural and/or social environment. For this the Project must be considered in the context of the area and the people that will be affected. The Area of Influence will be defined in the EIA.

Nonetheless, an impact assessment will always contain a degree of subjectivity, as it is based on the value judgment of various specialists and EIA practitioners. The evaluation of significance is thus contingent upon values, professional judgment, and dependent upon the environmental and community context. Ultimately, impact significance involves a process of determining the acceptability of a predicted impact to society.

The purpose of impact assessment is to identify and evaluate the likely significance of the potential impacts on identified receptors and resources according to defined assessment criteria, to develop and describe measures that will be taken to avoid, minimize, reduce or compensate for any potential adverse environmental effects, and to report the significance of the residual impacts that remain following mitigation. There are a number of ways that impacts may be described and quantified.

8.5.1 *Impact Identification and Characterisation*

An 'impact' is any change to a resource or receptor brought about by the presence of a project component or by a project-related activity. In this assessment, the impacts are described in terms of their characteristics, including the impact's type and the impact's spatial and temporal features (namely extent, duration, scale and frequency). While an impact assessment typically focuses on the negative impacts, an impact can also be positive. The definitions of these terms used in this EIA are described in *Table 8.3.*

Table 8.3 Impact Characteristic Terminology

Characteristic	Definition	Terms
Type	A descriptor indicating the relationship of the impact to the Project (in terms of cause and effect).	**Direct** - Impacts that result from a direct interaction between the Project and a resource/receptor (e.g., between occupation of a plot of land and the habitats which are affected). **Indirect** - Impacts that follow on from the direct interactions between the Project and its environment as a result of subsequent interactions within the environment (e.g. viability of a species population resulting from loss of part of a habitat as a result of the Project occupying a plot of land).

		Induced - Impacts that result from other activities (which are not part of the Project) that happen as a consequence of the Project. Cumulative - Impacts that arise as a result of an impact and effect from the Project interacting with those from another activity to create an additional impact and effect.
Duration	The time period over which a resource / receptor is affected.	**Temporary** - (period of less than 3 years -negligible/ pre-construction/ other). **Short term** - (period of less than 5 years i.e. production ramp up period). **Long term** - (period of more than 5 years and less than 19 years i.e. life of plant). **Permanent** - (a period that exceeds the life of plant – i.e. irreversible.).
Extent	The reach of the impact (i.e. physical distance an impact will extend to)	**On-site** - impacts that are limited to the Project site. **Local** - impacts that are limited to the Project site and adjacent properties. **Regional** - impacts that are experienced at a regional scale. **National** - impacts that are experienced at a national scale. **Trans-boundary/International** - impacts that are experienced outside of South Africa.
Scale	Quantitative measure of the impact (e.g. the size of the area damaged or impacted the fraction of a resource that is lost or affected, etc.).	Quantitative measures as applicable for the feature or resources affects. No fixed designation as it is intended to be a numerical value.
Frequency	Measure of the constancy or periodicity of the impact.	No fixed designations; intended to be a numerical value or a qualitative description.

An additional characteristic that pertains to unplanned events (e.g. incidents, spills) is likelihood (*Table 8.4*). The likelihood of an unplanned event occurring is determined qualitatively, or when data is available, semi-quantitatively. Likelihood is estimated on the basis of experience and/or evidence that such an outcome has previously occurred. It is also important to distinguish that likelihood is a measure of the degree to which the unplanned event is expected to occur, not the degree to which an impact or effect is expected to occur as a result of the unplanned event.

Table 8.4 Definitions for Likelihood

Likelihood	Definition
Unlikely	The event is unlikely but may occur at some time during normal operating conditions.
Possible	The event is likely to occur at some time during normal operating conditions.
Likely	The event will occur during normal operating conditions (i.e., it is essentially inevitable).

8.5.2 Determining Impact Magnitude

Once an impact's characteristics are defined, the next step in the impact assessment phase is to assign each impact a 'magnitude'. Magnitude is typically a function of some combination (depending on the resource/receptor in question) of the following impact characteristics:

- extent
- duration
- scale
- frequency

Magnitude (from small to large) is in practice a continuum, and evaluation along the spectrum requires the exercise of professional judgement and experience. Each impact is evaluated on a case-by-case basis, and the rationale for each determination is noted. The universal magnitude designations, for negative effects, are: negligible, small, medium and large. The magnitude designations themselves are universally consistent, but the definition for the designations varies by issue. In the case of a positive impact, no magnitude designation has been assigned as it is considered sufficient for the purpose of the impact assessment to indicate that the Project is expected to result in a positive impact.

The magnitude of an impact takes into account the various dimensions of a particular impact in order to make a determination as to where the impact falls on the spectrum from negligible to large. Some impacts will result in changes to the environment that may be immeasurable, undetectable or within the range of normal natural variation. Such changes can be regarded as essentially having no impact, and are characterised as having a negligible magnitude.

In the case of impacts resulting from unplanned events, the same resource/ receptor-specific approach to concluding a magnitude designation is utilised. The likelihood factor is also considered, together with the other impact characteristics, when assigning a magnitude designation.

Determining Magnitude for Biophysical Impacts

For biophysical impacts, the semi-quantitative definitions for the spatial and temporal dimension of the magnitude of impacts used in this assessment are provided below:

High Magnitude Impact affects an entire area, system (physical), aspect, population or species (biological) and at sufficient magnitude to cause a significant measureable numerical increase in measured concentrations or levels (to be compared with legislated or international limits and standards specific to the receptors) (physical) or a decline in abundance and/ or change in distribution beyond which natural recruitment (reproduction, immigration from unaffected areas) would not return that population or species, or any population or species dependent upon it, to its former level within several generations (physical and biological). A high magnitude impact may also adversely affect the integrity of a site, habitat or ecosystem.

Moderate Magnitude Impact affects a portion of an area, system, aspect (physical), population or species (biological) and at sufficient magnitude to cause a measurable numerical increase in measured concentrations or levels (to be compared with legislated or international limits and standards specific to the receptors) (physical) and may bring about a change in abundance and/or distribution over one or more plant/animal generations, but does not threaten the integrity of that population or any population dependent on it (physical and biological). A moderate magnitude impact may also affect the ecological functioning of a site, habitat or ecosystem but without adversely affecting its overall integrity. The area affected may be local or regional.

Low Magnitude Impact affects a specific area, system, aspect (physical), group of localized individuals within a population (biological) and at sufficient magnitude to result in a small increase in measured concentrations or levels (to be compared with legislated or international limits and standards specific to the receptors) (physical) over a short time period (one plant/animal generation or less, but does not affect other trophic levels or the population itself), and localized area.

Determining Magnitude for Socioeconomic Impacts

For socioeconomic impacts, the magnitude considers the perspective of those affected by taking into account the likely perceived importance of the impact, the ability of people to manage and adapt to change and the extent to which a human receptor gains or loses access to, or control over socio-economic resources resulting in a positive or negative effect on their well-being. The quantitative elements are included into the assessment through the designation and consideration of scale and extent of the impact.

8.5.3 *Determining Receptor Sensitivity*

In addition to characterising the magnitude of impact, the other principal step necessary to assign significance for a given impact is to define the sensitivity of the receptor. There are a range of factors to be taken into account when defining the sensitivity of the receptor, which may be physical, biological, cultural or human. Where the receptor is physical (for example, a water body) its current quality, sensitivity to change, and importance (on a local, national and international scale) are considered. Where the receptor is biological or cultural (i.e. the marine environment or a coral reef), its importance (local, regional, national or international) and sensitivity to the specific type of impact are considered. Where the receptor is human, the vulnerability of the individual, community or wider societal group is considered. As in the case of magnitude, the sensitivity designations themselves are universally consistent, but the definitions for these designations will vary on a resource/receptor basis. The universal sensitivity of receptor is low, medium and high.

For ecological impacts, sensitivity is assigned as low, medium or high based on the conservation importance of habitats and species. For habitats, these are based on naturalness, extent, rarity, fragility, diversity and importance as a community resource. For the sensitivity of individual species, *Table 8.5* presents the criteria for deciding on the value or sensitivity of individual species.

For socio-economic impacts, the degree of sensitivity of a receptor is defined as the level of resilience (or capacity to cope) with sudden social and economic changes. The sensitivity of a resource is based on its quality and value/importance, for example, by its local, regional, national or international designation, its importance to the local or wider community, or its economic value. *Table 8.5* and *Table 7.4* present the criteria for deciding on the value or sensitivity of biological and socioeconomic receptors.

Table 8.5 Biological and Species Value / Sensitivity Criteria

Value / Sensitivity	Low	Medium	High
Criteria	Not protected or listed as common / abundant; or not critical to other ecosystem functions (e.g. key prey species to other species).	Not protected or listed but may be a species common globally but rare in South Africa with little resilience to ecosystem changes, important to ecosystem functions, or one under threat or population decline.	Specifically protected under South African legislation and/or international conventions e.g. CITIES Listed as rare, threatened or endangered e.g. IUCN

Note: The above criteria should be applied with a degree of caution. Seasonal variations and species lifecycle stage should be taken into account when considering species sensitivity. For example, a population might be deemed as more sensitive during the breeding/spawning and nursery periods. This table uses listing of species (e.g. IUCN) or protection as an indication of the level of threat that this species experiences within the broader ecosystem (global, regional,

local). This is used to provide a judgement of the importance of affecting this species in the context of project-level changes.

Table 8.6 Socio-economic Sensitivity Criteria

Sensitivity	Low	Medium	High
Criteria	Those affected are able to adapt with relative ease and maintain pre-impact status.	Able to adapt with some difficulty and maintain pre-impact status but only with a degree of support.	Those affected will not be able to adapt to changes and continue to maintain-pre impact status.

8.5.4 Assessing Significance

Once magnitude of impact and sensitivity of a receptor have been characterised, the significance can be determined for each impact. The impact significance rating will be determined, using the matrix provided in *Figure 8.1.*

Figure 8.1 Impact Significance

		Sensitivity/Vulnerability/Importance of Resource/Receptor		
		Low	Medium	High
Magnitude of Impact	**Negligible**	Negligible	Negligible	Negligible
	Small	Negligible	Minor	Moderate
	Medium	Minor	Moderate	Major
	Large	Moderate	Major	Major

The matrix applies universally to all resources/receptors, and all impacts to these resources/receptors, as the resource/receptor-specific considerations are factored into the assignment of magnitude and sensitivity/vulnerability/ importance designations that enter into the matrix. *Box 8.1* provides a context for what the various impact significance ratings signify.

Box 8.1 *Context of Impact Significances*

An impact of **negligible** significance is one where a resource/receptor (including people) will essentially not be affected in any way by a particular activity or the predicted effect is deemed to be 'imperceptible' or is indistinguishable from natural background variations.

An impact of **minor** significance is one where a resource/receptor will experience a noticeable effect, but the impact magnitude is sufficiently small and/or the resource/receptor is of low sensitivity/ vulnerability/ importance. In either case, the magnitude should be well within applicable standards.

An impact of **moderate** significance has an impact magnitude that is within applicable standards, but falls somewhere in the range from a threshold below which the impact is minor, up to a level that might be just short of breaching a legal limit. Clearly, to design an activity so that its effects only just avoid breaking a law and/or cause a major impact is not best practice. The emphasis for moderate impacts is therefore on demonstrating that the impact has been reduced to a level that is as low as reasonably practicable (ALARP). This does not necessarily mean that impacts of moderate significance have to be reduced to minor, but that moderate impacts are being managed effectively and efficiently.

An impact of **major** significance is one where an accepted limit or standard may be exceeded, or large magnitude impacts occur to highly valued/sensitive resource/receptors. An aim of IA is to get to a position where the Project does not have any major residual impacts, certainly not ones that would endure into the long-term or extend over a large area. However, for some aspects there may be major residual impacts after all practicable mitigation options have been exhausted (i.e. ALARP has been applied). An example might be the visual impact of a facility. It is then the function of regulators and stakeholders to weigh such negative factors against the positive ones, such as employment, in coming to a decision on the Project.

8.5.5 Mitigation Potential and Residual Impacts

One of the key objectives of an EIA is to identify and define socially, environmentally and technically acceptable and cost effective measures to manage and mitigate potential impacts. Mitigation measures are developed to avoid, reduce, remedy or compensate for potential negative impacts, and to enhance potential environmental and social benefits.

In keeping with the mitigation hierarchy, the priority is to first apply mitigation measures to the source of the impact (i.e. to avoid or reduce the magnitude of the impact from the associated Project activity), and then to address the resultant effect to the resource/receptor via abatement or compensatory measures or offsets (i.e. to reduce the significance of the effect once all reasonably practicable mitigations have been applied to reduce the impact magnitude).

Once mitigation measures are declared, the next step in the impact assessment process is to assign residual impact significance. This is essentially a repeat of the impact assessment steps discussed above, considering the assumed implementation of the additional declared mitigation measures. The approach taken to defining mitigation measures is based on a typical hierarchy of decisions and measures, as described in *Table 8.7.*

Table 8.7 Mitigation Hierarchy

Avoid at Source; Reduce at Source: avoiding or reducing at source through the design of the Project (e.g. avoiding by siting or re-routing activity away from sensitive areas or reducing by restricting the working area or changing the time of the activity).
Abate on Site: add something to the design to abate the impact (e.g. pollution control equipment).
Abate at Receptor: if an impact cannot be abated on-site then control measures can be implemented off-site (e.g. traffic measures).
Repair or Remedy: some impacts involve unavoidable damage to a resource (e.g. material storage areas) and these impacts require repair, restoration and reinstatement measures.
Compensate in Kind; Compensate Through Other Means where other mitigation approaches are not possible or fully effective, then compensation for loss, damage and disturbance might be appropriate (e.g. financial compensation for degrading agricultural land and impacting crop yields).

8.5.6 Residual Impact Assessment

Once mitigation measures are declared, the next step in the impact assessment process is to assign residual impact significance. This is essentially a repeat of the impact assessment steps discussed above, considering the assumed implementation of the additional declared mitigation measures.

8.5.7 Cumulative Impacts

A cumulative impact is one that arises from a result of an impact from the Project interacting with an impact from another activity to create an additional impact. How the impacts and effects are assessed is strongly influenced by the status of the other activities (eg. already in existence, approved or proposed) and how much data is available to characterize the magnitude of their impacts.

The approach to assessing cumulative impacts is to screen potential interactions with other projects on the basis of:

- projects that are already in existence and are operating;
- projects that are approved but not as yet built or operating; and
- projects that are a realistic proposition but are not yet built.

8.6 PROPOSED STRUCTURE OF THE EIA REPORT

An outline of the proposed contents of the main volume of the EIA report is provided in *Table 8.8.* The content may change through the evolution of the project but it is anticipated to accord broadly within the suggested framework.

Table 8.8 Proposed EIA Report Structure

Chapter Number	Contents Heading	Explanatory Note
Executive Summary		Summary of the entire EIA report.
1	Introduction	This *Chapter* will outline the development and structure of the EIA report including the background, terms of reference and declaration.
2	Project Description	This *Chapter* will provide a concise description of the project and its geographical and temporal context. It will include a site description, an overview of the facility Project design and details of project inputs and outputs.
3	Administrative Framework	This *Chapter* will outline the policy, legal and institutional framework within which the EIA has been conducted.
4	Baseline Condition	This *Chapter* will summarise the available baseline data on the environmental and social resources and receptors within the Facility Project Study Area. It will be based on both primary and secondary data sources and will consider changes in the baseline condition without the development in place.
5	Public Participation Process	This *Chapter* will present the results of consultation undertaken as part of the EIA, plus plans for future consultation. It will identify key project stakeholders and present their feedback on the Project.
6	Impact Assessment Methodology	This *Chapter* will summarise the methodology used to assess the impacts of the Project on the bio-physical, terrestrial and socio-economic environment.
7	Impact Assessment	This *Chapter* will summarise the predicted positive and negative impacts of the Project, outline general and specific mitigation measures to reduce, remove or avoid negative impacts to environmental and social receptors as well as measuring for monitoring these impacts. Any residual impacts (post mitigation) will be outlined. Cumulative impacts will be assessed as appropriate.
8	Environmental Management Plan (EMP)	The EMP will draw together the possible mitigation measures; group them logically into components with common themes; define the specific actions required and timetable for implementation; identify training needs, institutional roles and responsibilities for implementation; and estimate the costs of the measures.
9	Conclusion	This *Chapter* will summarise conclusions that are made based on the assessment as well as outline any further recommendations.
Bibliography & References		All references made in the report and documents drawn upon during the course of the assessment
Annexes		These will include technical annexes with details of specific technical surveys, the bibliography and list of acronyms.

8.7 PROVISIONAL SCHEDULE FOR THE EIA PROCESS

A provisional schedule for the EIA is provided in *Table 8.9*.

Table 8.9 Provisional EIA Schedule

Task	Timing
Disclosure of Draft EIA Report	8 February 2016- 8 March 2016
Submission of Draft EIA Report to DEA	8 February 2016
Submit EIA Report to DEA	21 March 2016

Given the current energy shortage, there is a need to fast-track early power projects from economically viable generation sources as identified in this report. This is aimed at maximising the socio-economic benefit to South Africa, while also striving to balance the country's energy security and diversity requirements.

This Draft Scoping Report presents a description of the proposed project and also identifies a number of key issues/potential impacts that are expected as a result of this application process. These will form the focus of the EIA phase of the assessment. The Plan of Study (PoS) for the EIA has been included in Section 8.

The Draft Scoping Report will be a made available to the public for a 30 day comment period. Please refer to the website for all available documentations and please feel free to contact the person if you have any queries.

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Annex A

Details of Environmental Assessment Practitioner

Stuart Heather-Clark

Partner, Impact Assessment & Planning

Stuart Heather-Clark is a Partner in the **Impact Assessment and Planning Team** within ERM Southern Africa based in Cape Town, South Africa.

Mr Heather-Clark's has over 20 years of experience in infrastructure, industrial, oil & gas and renewable energy related ESIAs and Strategic Environmental Assessments (SEA) throughout Africa. His experience has afforded him a sound understanding of the sustainability issues facing development in Africa. He has been involved in a number of internationally funded projects in Cameroon, Ethiopia, Zambia, Tanzania, Angola, Botswana, Namibia, Uganda and Mozambique. All of these projects involved interaction with lenders, developers, local stakeholders, including NGO's, government officials and local communities. Mr Heather-Clark has an in-depth understanding of the Equator Principles and IFC performance Standards.

Mr Heather-Clark has been involved in Environmental and Social Assessment and Management training and capacity building over the past 14 years. He has also facilitating numerous ESIA/SEA and EMS training courses for the World Bank, Universities and the private and public sector in South Africa and other African countries. More recently Mr Heather-Clark has been involved in developing and facilitating training courses on the Equator Principles and IFC Performance Standards for various sectors including various Financial Institutions.

Professional Affiliations & Registrations

- Registered Professional Environmental Assessment Practitioner in South Africa
- International Association for Impact Assessment (IAIA) South Africa – Member

Fields of Competence

- Environmental and social impact assessment
- Environmental and social management plans
- Environmental and Social Due Diligence
- Strategic environmental assessment
- Environmental and social screening studies
- Sustainability strategy and reporting
- Environmental Management capacity building

Education

- BSc Civil Engineering – Univ. of Cape Town (1992)
- MPhil. Environ Science – Univ. of Cape Town (1996)
- Certification Course ISO 14001 SABS (1997)
- Environmental Conflict Management Course (1997)
- Advanced Environ Management Course (1997)
- Coastal Engineering Course (1998)
- Strategic Environmental Assessment Course (1998)

Languages

- English
- Afrikaans

Key Industry Sectors

- Infrastructure including ports and harbour developments
- Large industrial and infrastructure developments
- Oil and gas
- Renewable Energy

Publications:

Sep 2007: Co-author of case study for IIEDs 'User Guide' to effective tools and methods for integrating environment and development. South African case study: *Role of environmental and social screening in informing the conceptual design and planning of large-scale projects in the pre-feasibility stage.*
Aug 2003: Author of a case study on the SEA for the Port of Cape Town, contained in "The Status and Potential of Strategic Environmental Assessment" by Barry Dalal-Clayton and Barry Saddler, DRAFT 17 September 2003.
March 2002: Strategic Integrated Port Planning: Moving from EIA to SEA. International Conference on Coastal Zone Management and Development, Kuwait 18 to 20 March 2002.
Nov 2000: Sustainable Port Development: Report on the preparatory seminar for Africa. 7th International Conference of the International Association for Cities and Ports, Marseilles – France.
Mar 2000: The development of Strategic Environmental Assessment in South Africa: Journal of Impact Assessment and Project Appraisal, Vol 18, Number 3, pg 217-223. September 2000.
April 1999: Integrating environmental opportunities and constraints into Port Planning, Development and Operation. 5th International Conference on Coastal and Port Engineering in Developing Countries, Cape Town, 19 to 23 April 1999.

SOUTH AFRICAN ESIA'S – ALL SECTORS

Environmental and Social Impact Assessment for the Burgan Oil Fuel Storage Deport in the Port of Cape Town, Burgan Oil, South Africa, 2014-15
Mr Heather-Clark was the project director for the ESIA for the Burgan Oil Fuel Storage Deport in the Port of Cape Town.

Environmental and Social Impact Assessment for the Expansion of Transnet's existing Manganese Ore Export Railway Line and Associated Infrastructure, South Africa, 2012.
Mr Heather-Clark is the Project Director for the ESIA for the Expansion of Transnet's existing Manganese Ore Export Railway Line and Associated Infrastructure in the Northern and Eastern Cape, South Africa.

Environmental and Social Impact Assessment (ESIA) for the Gamsberg Zinc Mine, South Africa, Black Mountain Mine (Vedanta) 2012-13
Mr Heather-Clark is the Project Director for the Environmental and Social Impact Assessment for a new Zinc Mine in the Northern Cape Province in South Africa. The ESIA includes the assessment of the mine and all associated infrastructure including waste rock dumps, tailing dams, processing plant, transmission lines, a new township development, upgrade of a water pipeline and associated water treatment facilities, and transport options to the Port of Saldanha via both road and rail. The ESIA is being undertaken as an integrative process to meet various environmental legal requirements including National Environmental Management Act (NEMA): EIA Regulations, NEM: Waste Act, NEM: Air Quality Act, NEM: Biodiversity Act, National Heritage Resource Act, National Water Act and the Minerals Petroleum Resources Development Act. The process includes various specialist studies, full stakeholder engagement as well as integration with a Biodiversity Off-sets process.

Environmental and Social Impact Assessment for Venetia Diamond Mine, De Beers, South Africa, 2011
Mr Heather-Clark was the project director for the Scoping and ESIA for the proposed new underground mine and EMP consolidation for existing mining activities. The ESIA was undertaken as an integrative process to meet various environmental legal requirements including National Environmental Management Act (NEMA): EIA Regulations, NEM: Waste Act, NEM: Air Quality Act, NEM: Biodiversity Act, National Heritage Resource Act, National Water Act and the Minerals Petroleum Resources Development Act.

Environmental and Social Impact Assessment for a LPG import and distribution facility, Sunrise Energy, South Africa, 2011-2012
Mr Heather-Clark was the Project Director for the Scoping/EIA for a LPG importation, storage and distribution facility which includes a marine offloading facility in Saldanha Bay, a pipeline and a storage facility. The environmental permitting process required the liaison with local and provincial environmental authorities, co-ordination of specialist studies, public participation and impact assessment.

EIA for a 380MW renewable energy facility north of Touwsrivier in the Western Cape, 2010-2011. Project Director
ERM was commissioned to undertake a Scoping/EIA for a proposed renewable energy facility incorporating wind and photovoltaic power generating technologies. The environmental permitting process requires the liaison with local, provincial and national environmental authorities, co-ordination of specialist studies, public participation and impact assessment.

EIA for a 170MW renewable energy facility east of Touwsrivier in the Western Cape, 2010-2011. Project Director
ERM was commissioned to undertake a Scoping/EIA for a proposed renewable energy facility incorporating wind and photovoltaic power generating technologies. The environmental permitting process requires the liaison with local, provincial and national environmental authorities, co-ordination of specialist studies, public participation and impact assessment.

EIA for a 670MW renewable energy facility south of Sutherland in the Western and Northern Cape, 2010-2011. Project Director
ERM was commissioned to undertake a Scoping/EIA for a proposed renewable energy facility incorporating wind and photovoltaic power generating technologies. The environmental permitting process requires the liaison with local, provincial and national environmental authorities, co-ordination of specialist studies, public participation and impact assessment.

EIA for a 500MW renewable energy facility south of Beaufort West in the Western Cape, 2010-2011. Project Director
ERM was commissioned to undertake a Scoping/EIA for a proposed renewable energy facility incorporating wind and photovoltaic power generating technologies. The environmental permitting process requires the liaison with local, provincial and national environmental authorities, co-ordination of specialist studies, public participation and impact assessment.

EIA for a 120MW renewable energy facility south east of Victoria West in the Northern Cape, 2010-2011. Project Director
ERM was commissioned to undertake a Scoping/EIA for a proposed renewable energy facility incorporating wind and photovoltaic power generating technologies. The environmental permitting process requires the liaison with local, provincial and national environmental authorities, co-ordination of specialist studies, public participation and impact assessment.

Basic Assessment for the installation of wind measuring masts on six sites in the Western Cape and two sites in the Northern Cape, 2010. Project Director
ERM was commissioned to undertake Basic Assessments to install wind measuring masts at eight sites in South Africa. The scope of work included the submission of the application, public participation, preparation of an EMP and submission of the Basic Assessment report.

Environmental and Social Impact Assessment for two solar farm (pv) development, South Africa, 2010
Mr Heather-Clark was the Project Director of the EIA for the development of two solar power farms (photovoltaic cell plants) in the Northern Cape and Free State Provinces of South Africa. ERM undertook the required studies to obtain environmental approval for these developments, including specialist studies such as landscape and visual and cultural heritage assessments, and stakeholder engagement.

EIA for a 225MW wind farm in the Richtersveld, Western Cape, 2011. Project Director
ERM was commissioned to undertake a Scoping/EIA for a proposed wind farm. The environmental permitting process requires the liaison with local, provincial and national environmental authorities, co-ordination of specialist studies, public participation and impact assessment.

EIA for a 750MW wind farm in the Roggeveld, Western Cape and Northern Cape, 2011. Project Director
ERM was commissioned to undertake a Scoping/EIA for a proposed wind farm. The environmental permitting process requires the liaison with local, provincial and national environmental authorities, co-ordination of specialist studies, public participation and impact assessment.

EIA for a 225MW renewable energy facility between Vredenburg and Velddrif in the in the Western Cape, 2010-2011. Project Director
ERM was commissioned to undertake a Scoping/EIA for a proposed renewable energy facility incorporating wind and photovoltaic power generating technologies. The environmental permitting process requires the liaison with local, provincial and national environmental authorities, co-ordination of specialist studies, public participation and impact assessment.

EIA for a 100MW renewable energy facility north of Velddrif in the in the Western Cape, 2010. Project Director
ERM was commissioned to undertake a Scoping process for a proposed renewable energy facility incorporating wind and photovoltaic power generating technologies. The environmental permitting process required the liaison with local, provincial and national environmental authorities, co-ordination of specialist studies and public participation.

EIA for a 300MW renewable energy facility east of Lambert's Bay in the Western Cape, 2010. Project Director
ERM was commissioned to undertake a Scoping process for a proposed renewable energy facility incorporating wind and photovoltaic power generating technologies. The environmental permitting process required the liaison with local, provincial and national environmental authorities, co-ordination of specialist studies and public participation.

Environmental and Social Impact Assessment for the services corridor associated with the development of a greenfield CTL Plant, Sasol, South Africa, 2009
Mr. Heather-Clark was the Project Director for an ESIA of a services corridor to support the development of a greenfield CTL plant development in South Africa. The ESHIA process was conducted in accordance to the South African EIA Regulations and the IFC performance standards.

Environmental Assessment for the dredging and disposal of dredge spoil at the Port of Saldanha, Transnet, South Africa, 2008
Mr Heather-Clark was the Project Director for this project and was responsible for guidance of technical studies which included dredging studies and marine sediment contamination characterization. The study included the assessment of dredge spoil dumping alternatives. Stakeholder engagement included an important component of the project.

Environmental and Social Impact Assessment for the upgrade of a 1100 km railway line in South Africa, Transnet, 2008- 2009

Mr Heather-Clark was the Project Director for the Environmental and Social Impact Assessment for the upgrade of a commodities railway line across South Africa. The project included a number of specialist studies, managing subcontractors, interfacing with the railway engineering team, report writing, managing an extensive stakeholder consultation process, client liaison and management of project finances.

EIA for a Metal Recovery Plant and Slag Crushing, Screening and Weathering facility at Arcelor Mittal Saldanha Works, MultiServ, South Africa, 2007 – 2008. As Project Director, Mr Heather-Clark was responsible for client liaison, quality control and final review of all reports. The project involved undertaking an EIA, including a public consultation process and the following specialist studies: air quality, groundwater, noise impact assessment, botanical and archaeology studies and a traffic impact assessment.

EIA for the upgrade and expansion of the existing sinter plant at Vanderbijlpark, ArcelorMittal, South Africa, 2006
Mr. Heather-Clark was the Project Director for the EIA and stakeholder engagement process to meet South African requirements. This included coordination of the technology review, air quality, health and waste management specialist studies and compilation of the integrated Scoping and EIA Report.

EIA of a proposed expansion of the Container Terminal Stacking area at the Port of Cape Town, National Ports Authority, South Africa, 2003-2004
Mr Heather-Clark was the project manager for this EIA. The project included the expansion of the Cape Town container terminal into the sea though dredging 1 million m^3 of material for reclamation. The project included a detailed study on alternative sources for fill material and other studies which focused on marine archaeology, coastal erosion, marine hydrodynamics and water quality, visual, noise and traffic. The EIA included full stakeholder engagement throughout the EIA process.

Environmental Impact Assessment for the Eskom SABRE-GEN wind turbine test facility, Eskom, South Africa, 2002
Mr Heather-Clark was the project manager for the EIA. The EIA included stakeholder engagement throughout the process and included the following specialist studies: visual assessment, bird strike modelling and noise assessment.

Scoping Phase of the Environmental Impact Assessment for the expansion of the Container Terminal at the Port of Cape Town, Portnet, South Africa, 2000
Mr Heather-Clark was the Project Manager for the EIA for the expansion of the container terminal at the Port of Cape Town. The project included the dredging of 1 million m^3 dredge material to provide fill for the expansion of the port. Specialist studies that were required included coastal dynamic modelling, hydrodynamic modelling to assess water quality issues associated with dredging, marine archaeological issues, marine ecology issues, traffic, visual and noise.

ESIA IN OTHER AFRICAN COUNTRIES – ALL SECTORS

Environmental and Social Impact Assessment for the Batoka Gorge Hydropower Project, ZRA, Zambia/Zimbabwe, 2014-15
Mr Heather acted as advisor to the ESIA team undertaking the Environmental and Social Impact Assessment (ESIA) for the proposed Batoka Gorge Hydropower Plant on the Zambezi River below the Victoria Falls. The project includes the construction of a dam wall, hydropower plants, transmission lines and associated infrastructure. The ESIA is being conducted in alignment with the IFC Performance Standards and the World Bank Safeguard Policies.

Environmental and Social Impact Assessment for the Tete-Macuse Railway Line and Macuse Power Development, Italthai, Mozambique, 2014-15
Mr. Heather-Clark was the Project Director for the Environmental and Social Impact Assessment (ESIA) for the proposed Tete-Macuse railway line and Macuse Port development for the export of coal from Tete Province in Mozambique. The project includes the development of over 700km of railway line and a new port development.

Environmental and Social Impact Assessment for the Rehabilitation of the Kariba Dam Wall, ZRA, Zambia/Zimbabwe, 2014-15
Mr. Heather-Clark acted as the Project Director for the Environmental and Social Impact Assessment (ESIA) for the proposed Kariba Dam Rehabilitation Project. The project includes the rehabilitation of the plunge pool and spillway of the dam wall. The project is being funded by the World Bank, African Development Bank and the EU.

Environmental and Social Impact Assessment for the Lesotho Highland 150 MW Wind Power Project, Breeze Power, Lesotho, 2011
Mr Heather-Clark was the Project Director for the Scoping Phase of the Environmental and Social Impact Assessment for a 150MW wind farm development in Lesotho. The Scoping Phase included the analysis of available information to identify key environmental and social risks associated with the siting of the wind farm.

Environmental and Social Impact Assessment for the upgrade of the Principe Airport, HBD, Principe, 2011-2012
Mr Heather-Clark was the Project Director for the Environmental and Social Impact Assessment for the upgrade of the airport in Principe.

Environmental and Social Impact Assessment for a river barging project on the Zambezi River, Riversdale Mining, Mozambique, 2010-2011
Mr Heather-Clark was the Project Director for the project which includes the assessment of environmental and social impacts associated with dredging over 500km of the Zambezi River. The project includes full stakeholder engagement, coordination of various specialist studies with extensive field work and the integration of all information into an ESIA report and ESMP.

Environmental and Social Impact Assessment for 2D seismic exploration project in the Rovuma Basin, Petronas, Mozambique, 2009
Mr Heather-Clark was the Project Director for the ESIA for the offshore seismic exploration activities in Blocks 3 & 6, situated in the Rovuma Basin off the coast of Mozambique. The exploration activities comprise 2D seismic surveys in deepwater.

ESIA for an Early Production System (EPS) and Power Plant for Kaiso-Tonya Area, Exploration Area 2, Tullow Uganda Operations Pty Ltd, Uganda, 2007/8
Mr Heather-Clark was the Project Director for the project which included a full ESIA for an Early Production System and associated Power Plant in the Kaiso-Tonya area on the banks of Lake Albert, Uganda. The intent of the project is to produce oil (and small amounts of gas) which will be converted into electrical power and distillate products (kerosene and diesel) for consumption within Uganda. The electrical power will be fed into the main grid supplementing the Ugandan electrical power grid while the distilled products (diesel and kerosene) will be used to displace the currently imported fuels. The ESIA included a detailed assessment of alternative sites for the proposed EPS and power plant, together with various environmental and social baseline studies and stakeholder engagement.

ESIA for a new high voltage overhead transmission power line in Cameroon, AES Sonel, Cameroon, 2007-2009
The project included co-ordinating a multidisciplinary team to undertake an Environmental and Social Impact Assessment and a full Resettlement Action Plan, for a new electricity distribution project, comprising a 113km overhead power line, for AES Sonel. As Project Director, Mr Heather-Clark was responsible for client liaison, quality control and final review of all reports.

ESIA monitoring studies for Sasol's Off-shore gas exploration activities in Inhambane and Sofala Provinces, Mozambique, Sasol Petroleum Sofala & Empresa Nacional de Hidrocarbonetos, 2007/8
Mr Heather-Clark directed an extensive environmental monitoring survey programme for Sasol's offshore hydrocarbon exploration activities. Monitoring studies included seismic noise modelling and monitoring, dugong surveys, artisanal fish catch monitoring, coral reef surveys and monitoring, sea turtle monitoring and tourism monitoring.

ESIA for seismic surveys and exploration well drilling and testing in Blocks 16 and 19 off the coast of Mozambique, Sasol Petroleum Sofala & Empresa Nacional de Hidrocarbonetos, 2005 - 2006
Mr Heather-Clark was the Project Manager for the ESIA which involved undertaking an ESIA and compiling EMPs for offshore exploration activities in Blocks 16 & 19, situated to the east of the Bazaruto Archipelago National Park, off the coast of Mozambique. The exploration activities comprised 2D and 3D seismic surveys in deepwater and shallow water as well as exploration well drilling and testing activities.

EIA of the Moatize Coal Mine and associated railway line and deep water port infrastructure, CVRD, Tete Province, Mozambique 2006-2007
Mr Heather-Clark acted as the Project Coordinator and Cost Controller on this project. ERM was commissioned by CVRD, a Brazilian Mining Company, to undertake environmental studies related to the green fields development of a coal mine in Tete Province, Mozambique. The project included the development of a power plant, railway line and port for the export of coal.

ESIA of the proposed seismic survey in licence area 2814a on the continental shelf of Namibia, Shell Exploration and Production Namibia B.V., Namibia, 2001

Mr Heather-Clark was a team member of the ESIA for the offshore seismic exploration project. The ESIA included all issues associated with seismic surveys including seismic noise impacts on marine mammals, oil spill modelling and general environmental management issues.

ESIA of the Phase 2 expansion of the Mozal Aluminium Smelter and Matola Port Terminal in Maputo, BHP Billiton, Mozambique, 2000-2001
Mr Heather-Clark was the Project Manager and integrative writer for this ESIA. The EIA included an assessment of the expansion of the port terminal at the Port of Matola and a review of the Phase 2 expansion of the aluminium smelter. All reports together with the EIA process were reviewed and approved by the International Finance Corporation (IFC).

Environmental Impact Review for the abandonment of the Cuntala Well Protector Platform off the coast of Angola (Block 2), Texaco Panama Inc., Angola, 2001
Mr Heather-Clark was part of the project team who developed a decommissioning plan for a well protector platform off the coast of Angola.

STRATEGIC ENVIRONEMNTAL ASSESSMENT – ALL SECTORS

Strategic Environmental Assessment of the New Town Integrated Development Zone, TFM Mining, Katanga Province, DRC, 2014
Mr Heather-Clark was Project Director for the Strategic Environmental Assessment of the New Town Integrated Development Zone undertaken for Tenke Fungurume Mining (TFM) in Katanga Province, DRC.

Strategic Environmental Assessment for the supporting infrastructure for the Baynes Hydropower Project, Baynes PJTC, Namibia/Angola, 2014-15
Mr Heather-Clark was Project Director for the Strategic Environmental Assessment of the associated infrastructure for the Baynes hydropower project. The SEA covered the assessment of access roads for construction, transmission lines routing in Angola and Namibia and locations of an airfield.

Cumulative Impact Assessment of the development of numerous hydropower plants on the Cuanza River, Odebrecht, Angola, 2014-15
Mr Heather-Clark was the Project Director for the Cumulative Impact Assessment of the development of a number of hydropower plant on the Cuanza River in Angola.

Strategic Environmental Assessment for the Mozambican Regional Gateway Programme, MRGP, Mozambique, Malawi, Zambia, Zimbabwe, 2012
Mr Heather-Clark was the Partner Director for the SEA of the MRGP. The MRGP aims to support the improvement of the Southern African transport (roads, rail and ports), regional infrastructure network, which uses Mozambique as a gateway for international trade. The MRGP geographic scope encompasses the Beira and Nacala Transport Corridors and the respective links to the Maputo and Limpopo Corridors. The SEA identified enviroemtnal and social issues that need to be considered in the long terms planning an dimplemanetion of the rail and port infrastructure that makes up the Beira and Nacala Transport Corridors.

Strategic Environmental Assessment (SEA) for the coastline of Mozambique, MICOA, Mozambique 2012
Mr Heather-Clark is an advisor on the SEA for the coast of Mozambique. The SEA aims to identify potential conflicts between various uses of the coastal zone and to recommend strategic interventions to facilitate sustainable development within the coastal zone. Various users of the coastal zone that are being considered include off-shore oil and gas operations, coastal mining, tourism, conservation and artisanal and industrial fishing.

Strategic Environmental and Social Overview and ESIAs for offshore exploration well drilling activities in Blocks 2 and 3A, Lake Albert, Uganda. Tullow Oil Plc and Heritage Oil and Gas Limited, 2006- 2008
Mr Heather-Clark was Project Director for this project. The project involved undertaking a strategic overview study of Lake Albert that provided background information on the limnological (physical, chemical and biological) features of the lake as well as environmental and socio-economic resources (such as nature reserves, tourism nodes, prime fishing areas etc). It also presented areas of environmental risk and opportunity associated with oil explorations on, and immediately adjacent to, the lake. The strategic overview provided a framework within which ESIAs were undertaken for the offshore drilling project. A site selection study was undertaken for onshore support infrastructure. Baseline studies included shoreline sensitivity mapping, oil spill modelling, water and sediment quality surveys, fish and fisheries surveys, socio-economic surveys and terrestrial ecology surveys. An extensive pubic participation process was undertaken as part of the ESIAs.

Strategic Environmental Assessment (SEA) for the Port of Cape Town, National Ports Authority of South Africa, South Africa, 2003
Mr Heather-Clark was the project manager for this project and played a lead role in directing the course and outcome of the SEA. The SEA focussed on key environmental and social opportunities and constraint to the future long term development of the Port of Cape Town. A Sustainability Framework was developed to address key opportunities and constraints and to set up long terms monitoring programs. A key component of this study was to understand the Port-City linkages and developing mechanisms to ensure that port planning was supported by city planning and visa-versa.

Strategic Environmental Assessment (SEA) for the Port of Richards Bay, National Ports Authority of South Africa, South Africa, 2003
Mr Heather-Clark was the project adviser for this project and played a lead role in directing the course and outcome of the SEA. The SEA focussed on key environmental and social opportunities and constraint to the future long term development of the Port of Cape Town. A Sustainability Framework was developed to address key opportunities and constraints and to set up long terms monitoring programs. A key component of this study was to understand the Port-City linkages and developing mechanisms to ensure that port planning was supported by city planning and visa-versa.

Strategic Environmental Assessment: Scoping Phase Port of Richards Bay, National Ports Authority of South Africa, South Africa, 2002
Mr Heather-Clark was the Project Leader and integrative writer for the Scoping Phase of the SEA for the Port of Richards Bay. This phase included detailed stakeholder consultation to identify opportunities and constraints to long term port development at the Port of Richards Bay.

ENVIRONMENTAL AND SOCIAL SCREENING STUDIES – ALL SECTORS

Environmental and Social Screening Study for a Gas Power Plant, Confidential Client, South Africa, 2015
Mr Heather-Clark was the Project Director for an Environmental and Social Screening study for the establishment of a gas power plant in South Africa. The screening study outputs included a permitting strategy, environmental opportunities and constraints maps, and input into the site selection process.

Millennium Challenge Account – Malawi: Infrastructure Development Project – Energy Sector (hydropower plants, transmission and distribution lines and substations), MCC, Malaiw, 2014-15
Mr Heather-Clark acted as the Independent Engineer to review all the Contracting Engineers environmental and social studies associated with the Infrastructure Development Project. The project includes the upgrade and development of new infrastructure including hydropower plants, transmission lines, distribution lines and substations.

Environmental and Social Screening Study for port options in Pemba Bay, Anadarko, Mozambique 2012
Mr Heather-Clark was the project lead for a Environmental and Social Screening Study for various port options in Pemba Bay. The screening study includes a multi-criteria assessment of various port locations taking into account marine and terrestrial ecology, social issues, land ownership, legal aspects and physical marine conditions.

Ore Line Expansion Project for the Sishen-Saldanha Ore Line and Port of Saldanha, various Mining Companies and Transnet, South Africa 2011-2012
Mr Heather-Clark is the Project Director for the Environmental and Social Screening Study for the Pre-feasibility Phase of the Ore Line Expansion Project. This included compiling a detail Environmental and Social Design Criteria Report together with initial Stakeholder Engagement. A detailed multi-criteria assessment for various port and stockpile options was undertaken. The project included upgrading over a 1000 km of railway line and upgrading the port facilities including stockpiles, stacker-reclaimers, conveyors and shiploading facilities. The stakeholder engagement process was specifically designed to obtain buy-in from stakeholder who were strongly apposed some components of the port and rail expansion.

Environmental and Social Screening Study for a Mine development in Angola, Confidential Client, Angola 2011-2012
Mr Heather-Clark was the Project Director for the Environmental and Social Screening Study for the Concept Phase for a new mine development in Angola. The study included identifying environmental and social risks to the project and costing a full ESIA according to IFC Performance Standards and Equator Principles.

Environmental Screening Study for a Wind Farm Development in the Southern Cape, South Africa, 2011
Mr Heather-Clark is the Project Director for the Environmental Screening Study for a wind farm development in the Southern Cape.

Environmental Sensitivity Study of the Durban Airport Site Expansion Project , South Africa, Transnet, 2010
Mr Heather-Clark was the Project Director for the Environmental Sensitivity Study for the proposed dig-out port currently being considered by Transnet at the Durban International Airport Site. The aim of this assessment was to determine the biophysical, natural and social opportunities and constraints to the development of the dig-out port, as well as provide a strategic overview of the environmental context of the site. In addition, the sensitivity study provided strategic guidance in terms of the environmental due process and licensing requirements with respect to the National Environmental Management Act, and associated legislation.

Environmental and Social Screening Study for a river barging project on the Zambezi River, Riversdale Mining, Mozambique, 2009
Mr Heather-Clark was the Project Director for the project which included the assessment of environmental and social risks associated with dredging over 500km of the Zambezi River. The project included reviewing existing information, mapping key sensitivities and facilitating a specialist workshop in order to develop Terms of Reference for detailed baseline studies that will be required should the project proceed to a full ESIA.

Environmental and Social Screening Study, Port of Saldanha, Transnet, South Africa, 2008.
Mr Heather-Clark was the Project Director for the screening study which included an assessment of alternative berth options for the export of iron ore at the iron ore terminal at the Port of Saldanha, South Africa. The work included ongoing interaction with the port engineering and design teams, together with stakeholder engagement.

Environmental and Social Baseline Assessment for a green fields coal mine and CTL plant development, Sasol, South Africa, 2008
Mr. Heather-Clark was the Project Director the environmental and social baseline studies to support the evaluation of sites for potential development of a green fields coal mine and associated CTL Plant in South Africa. Mr. Heather-Clark has assisted with review and quality control of the various baseline studies.

Environmental and Social Screening and Qualitative Risk Assessment Western Ports and Rail Corridor, Transnet, South Africa, 2007
As Project Director, Mr Heather-Clark was involved in identifying environmental and social risks associated with future port development in the Port of Saldanha, Port of Cape Town and Port of Mossel Bay. The scope of the study included the review of previous EIAs, SEAs and other planning documents to identify environmental and social drivers and assess their risk to future port planning, development and operations. As the environmental team, ERM interacted on a regular basis with the port engineering and design teams to develop a port development framework for a 30 year planning period.

Environmental and Social Screening and Qualitative Risk Assessment Central Ports and Rail Corridor, Transnet, South Africa, 2007
As Project Director, Mr Heather-Clark was involved in identifying environmental and social risks associated with future port development in the Port of East London, Port of Port Elizabeth and Port of Ngqura. The scope of the study included the review of previous EIAs, SEAs and other planning documents to identify environmental and social drivers and assess their risk to future port planning, development and operations. As the environmental team, ERM interacted on a regular basis with the port engineering and design teams to develop a port development framework for a 30 year planning period.

Environmental and Social Screening and Qualitative Risk Assessment Eastern Ports and Rail Corridor, Transnet, South Africa, 2007
As Project Director, Mr Heather-Clark was involved in identifying environmental and social risks associated with future port development in the Port of Durban and Port of Richards Bay. The scope of the study included the review of previous EIAs, SEAs and other planning documents to identify environmental and social drivers and assess their risk to future port planning, development and operations. As the environmental team, ERM interacted on a regular basis with the port engineering and design teams to develop a port development framework for a 30 year planning period.

Environmental Site Suitability Study for a manganese smelter, Asia Minerals Limited, 2004
Mr Heather-Clark was part of the project team that undertook a preliminary site selection process for a manganese smelter by identifying key environmental and social issues for potential sites within Southern Africa. Sites included the Belualane Industrial Park (Mozambique) and Richards Bay, the Coega Industrial Development Zone (IDZ) and Saldahna (South Africa).

Environmental screening study for the establishment of a deep-water port at Ponta Dobela, Confidential Client, Mozambique, 2001
Mr Heather-Clark was a member of the project team who undertook a screening study to identify environmental, social and economic issues and show stoppers associated with the development of a deep-water port on the coast on Mozambique.

ENVIRONMENTAL AND SOCIAL DUE DILIGENCE AND TRAINING

Environmental and Social Gap Analysis for a 98 MW wind farm in South Africa, Confidential Client, South Africa, 2015
Mr Heather-Clark was the Project Director for the ESDD.

Environmental and Social Gap Analysis for a 2 x 75 MW solar pv farm in South Africa, Confidential Client, South Africa, 2015
Mr Heather-Clark was the Project Director for the ESDD.

Environmental and Social Due Diligence (ESDD) for a 74 MW wind farm in South Africa, Confidential Client, 2015
Mr Heather-Clark was the Project Director for the ESDD.

Equator Principles and IFC Performance Standards Training, Vedanta Resources Plc, Zambia 2012
Mr Heather-Clark was the lead facilitator of a 5-day training course on the implenmtation of the Equator Principles and IFC Performance Standards for a number of Vedanta's mining operations across Southern Africa, Europe and Australia.

Environmental and Social Due Diligence for a Wind Farm Development in Coega, Electrawinds, South Africa, 2011
Mr Heather-Clark is the Project Director for the Environmental and Social Due Diligence for a wind farm development in the Coega.

External adviser and reviewer for an ESIA for a wind farm development in the Eastern Cape, Confidential Client, South Africa, 2010
Mr Heather-Clark is acted as adviser and reviewer for an EIA for the development of a wind farm in the Eastern Cape.

Environmental Advisor Environmental and Social Impact Assessment for the Mphanda Nkuwa Hydropower Project in Mozambique, 2010
Mr Heather-Clark was appointed to act as advisor for the ESIA for the Mphanda Nkuwa Hydropower Project in Mozambique. The core service was to advise the project team on international standards such as the IFC Performance Standards and World Commission on Dams.

Equator Principled and IFC Performance Standards Review and Training, African Housing Solutions, South Africa, 2009
ERM was appointed to review and ESIA and Resettlement Policy Framework, for a housing development in Nigeria, against the Equator Principles and IFC Performance Standards. Mr Heather-Clark was responsible for reviewing the ESIA Report and for presenting a 2 ½ day training course on the Equator Principles and IFC Performance Standards.

Advisor to the Environmental and Social Impact Assessment for the Baynes Hydropower Project in Namibia and Angola, 2009.
Mr Heather-Clark was the Project Advisor for the Environmental and Social Impact Assessment for the proposed Baynes Hydropower Project on the Kunene River. The ESHIA process is being conducted in accordance to the Angolan EIA Regulations, the Namibian EIA Regulations, the World Bank Safeguard Policies and the IFC performance standards.

Implementation of the Equator Principles for Standard Bank's Project Financing Processes, Standard Bank, South Africa, 2008
ERM was commissioned to assist Standard Bank in adopting the Equator Principles. ERM developed an assessment system (based on the IFC Performance Standards) to link with Standard Bank's project finance transaction life-cycle. This involved the development of "tools" and guidance documents to form a system, together with training on the use of the system for all project finance staff. Mr Heather-Clark was one of the lead facilitators who undertook the training component of this project.

Independent Environmental Advisers to the Financing Parties of the Gautrain Rapid Rail Link project, Bowman Gilfillan. 2006
Mr Heather-Clark acted was appointed by The Bombela Consortium as Independent Environmental Advisers as to the Financing Parties. He provided review and advisory services through Bowman Gilfillan on Enviroemntal Management Plans for the Gautrian Rapid Link project.

Development of guideline document for the integration of environmental and social issues into the

project lifecycle for mine development, De Beers, South Africa, 2008
Mr Heather-Clark was part of the project team that assisted the client in developing a detailed guideline document for the integration of social and environmental issues into mine planning. This included all phases of the planning process from Concept through to Pre-feasibility, Feasibility and Implementation. Mr Heather-Clark, as lead facilitator, presented a 2 day training course on these guidelines, to mine planners and engineers.

Comparative review of EIAs undertaken by ERM globally for electricity utilities, Eskom, South Africa, 2007
Mr Heather-Clark was Project Director for this project. The project included research to provide Eskom with an overview of different EIA governance systems and approaches to managing EIAs in other countries, as well as identifying trends in EIA practice.

Corporate Social Responsibility Strategy development for a leading South African retailer, South Africa, 2006
Mr Heather-Clark was the lead facilitator for this project. The project involved identifying and prioritising the company's sustainability issues and defining a strategy to address these issues. The process was driven by the need for the company to be listed on the Johannesburg Stock Exchanges SRI Index.

Review of Sustainability Report and Sustainability Management System, Confidential, South Africa, 2004
Mr Heather-Clark played a lead role in reviewing the Sustainability Report of a leading retailer in South Africa and providing adhoc advice on sustainability issues. This included compiling a monthly news letter to staff on relevant sustainability issues facing the retail industry in South Africa.

EIA/SEA Capacity Building, Environmental Public Authority (EPA), State of Kuwait, 2003
Mr Heather-Clark was the lead facilitator for a 2 day training course on SEA and EIA for the Environmental Public Authority (EPA) of the State of Kuwait.

Training Workshop on Strategic Environmental Assessment for South Eastern Africa and the Western Indian Ocean Island States, SEACAM, Mozambique, 2003
Mr Heather-Clark was the lead course facilitator for the SEA training course funded by SEACAM. The training course included the principles of SEA, SEA process and case studies of SEA's in Southern Africa.

Improving the Effectiveness of EIA and the Potential of SEA in Southern Africa: Case Study on SEA of the National Commercial Ports Policy and SEA for the Port of Cape Town, World Bank/SAIEA, Namibia, 2003.
Mr Heather-Clark was invited to present two case studies on SEA at a regional workshop funded by the World Bank and SAIEA.

Due Diligence of the Phase 2 Maputo Port Revitalisation and Rehabilitation Project, Standard Corporate Merchant Bank, Mozambique, 2003
Mr Heather-Clark acted as the Environmental Adviser to the Standard Corporate Merchant Bank for the review of the EIA and Risk Assessment studies undertaken for the Phase 2 Maputo Port Revitalisation and Rehabilitation Project. The EIA was reviewed against the Mozambican and International Best Practice guidelines and detailed recommendation made on how to manage the environmental risks associated with the revitalisation project.

Environmental Audit and Assessment of the Socio-economic Impacts of the Trans-Kgalagadi Highway, Botswana, Development Bank of Southern Africa, Botswana, 2002
Mr Heather-Clark played a lead role in reviewing the EIA and EMP implementation for the Trans-Kalagadi corridor in Botswana. The review included site visits, detailed interviews and review of secondary data and records.

World Bank EIA Project Management Training Course, World Bank/SAIEA, Zambia, 2002
Mr Heather-Clark was the lead facilitator for the 5 day EIA Project Management Training Course. The course was presented to 20 African delegates from southern Africa. The course focused on the practical aspects of EIA project management including budgeting and scheduling an EIA, contract negotiations with clients, managing specialist studies, managing the public participation phase and compiling an integrated EIA report. The course formed part of a Southern Africa capacity building initiative lead by the SAIEA.

Ecologically Sustainable Industrial Development Programme, United Nations Industrial Development Organisation (UNIDO), Tanzania, 2002
Mr Heather-Clark was part of a project team appointed to review the Industrial Development Strategy for Industrial Development in Tanzania. The focus of the project was to integrate environmental and social issues into the programme.

White Paper on National Commercial Ports Policy, National Ports Authority, South Africa, 2002
Mr Heather-Clark was coordinated the review of the White Paper on National Commercial Ports Policy for South Africa. The review focussed on the integration of environmental and social issues into the port planning process. Mr Heather-Clark made a formal submission and presentation to the Portfolio Committee on Transport in the South African Parliament.

Environmental Liability and Risk Assessment for the Multi-Purpose Terminal at the Port of Saldanha, National Ports Operations, South Africa, 2002
Mr Heather-Clark was the Project Manager for the project. The purpose of the project was to identify key environmental risks associate with the material handling at the Multi-Purpose Terminal at the Port of Saldanha.

Environmental Overview of South Africa's major ports with special reference to future container terminal development, National Ports Authority Container Terminal Strategy, National Ports Authority, South Africa, 2002
Mr Heather-Clark was appointed to undertake a comparative assessment of the relative environmental sensitivity of the seven commercial ports in South Africa with reference to future container terminal development. The study included a detail review of secondary environmental information of all the ports, the identification of specific environmental criteria and the use of these criteria to rank each port in terms of its sensitivity to future container terminal development.

Review of the EIA undertaken for the Maputo Port Privatisation and Rehabilitation Project, Development Bank of Southern Africa (DBSA), South Africa, 2002
Mr Heather-Clark was appointed as the Environmental Adviser to the Development Bank of Southern Africa to review the Phase 1 EIA for the Maputo Port Privatisation and Rehabilitation Project. The review was undertaken against the Mozambican EIA Regulations and International Best Practice.

OTHER STUDIES

Research project on the effects of water scarcity on the fresh produce supply to a major South Africa retailer, South Africa, 2006
As Project Leader Mr Heather-Clark coordinated a group of researchers to identify water scarce areas and to plot these against the location of fresh produce suppliers for a major retailer in South Africa. This researched form a core component of the companies Sustainability Strategy.

DFID funded project to assess progress towards meeting the water relater targets of the Millennium Development Goals, DIFD, Zambia, 2004
Mr Heather-Clark was the Country Coordinator for Zambia on this project. The project included detailed stakeholder surveys secondary data analysis to establish the countries progress towards meeting the Millennium Development Goals, specifically related to water supply and sanitation.

Roll-out of ISO14001 and OHSAS18001 management systems to 2 industrial sites in South Africa, Confidential, South Africa, 2004.
As Project Manager Mr Heather-Clark was responsible for undertaking ISO14001 training at two industrial sites. The project formed part of a global initiative to have several industrial sites throughout Africa and Europe ISO14001 certified.

National Oil Spill Contingency Plan for Cameroon, funded by the World Bank, Cameroon Government, Cameroon, 2003
Mr Heather-Clark was part of the team that compiled a comprehensive Oil Spill Contingency Plan for Cameroon (OSCP). The OSCP form a core component of the Chad Cameroon Pipeline and included contingency plans for both onland and marine based spills. The OSCP was compiled according to the IPEACA guidelines and was reviewed by the World Bank.

Oil Spill Contingency Plan, Agip Angola oil operations, Angola, 2002
Mr Heather-Clark was a member of the team to develop an oil spill contingency plan according to the IPEICA International Guidelines.

Legal, Technical and Economic Feasibility Study for the Commercialisation of the SSF Association Milnerton Tank Farm and its links to the Port of Cape Town, SFF, Cape Town, 2001
Mr Heather-Clark was the Project Manager for this project.

Presentations and Lectures

2014: EIA Project Management Course. University of Freestate, South Africa. Masters Course.
2013: EIA Project Management Course. University of Freestate, South Africa. Masters Course.
2012: EIA Project Management Course. University of Freestate, South Africa. Masters Course.
2011: EIA Project Management Course. University of Freestate, South Africa. Masters Course.
2011: EIA Project Management Course, Impacto, Mozambique.

2010: EIA Project Management Course. University of Freestate, South Africa. Masters Course.
2009: EIA Project Management Course. University of Freestate, South Africa. Masters Course.
Equator Principles and IFC Performance Standards Training
2008: EIA Project Management Course. University of Freestate, South Africa. Masters Course.
2007: EIA Project Management Course. University of Freestate, South Africa. Masters Course.
2006: Corporate Social Responsibility course to University of Cape Town Masters Students
2005: Corporate Social Responsibility course to University of Cape Town Masters Students
EIA Course presenter to Masters Students at the University of the Freesate. A 3 day course focusing on EIA Project Management
EIA Course presenter to Masters Students at the University of the Western Cape
2004: SEA course facilitator and presenter. Training workshop in Mozambique on Strategic Environmental Assessment for the countries of eastern Africa and the Western Indian Ocean Island States, funded by SEACAM.2004:
Course facilitator for the EIA Project Management Course at the University of Freestate and University of Stellenbosch.
Course facilitator for the EIA Project Management Course at the University of Freestate and University of Stellenbosch.
2003: Guest Speaker at the "Successfully Conducting Environmental Impact Assessments" conference held in Midrand on the 24 to 26 November 2003. Presented a paper titled "Moving from EIA to SEA: Proactive integration of biophysical, social and economic issues into the planning stages of the development cycle.
2003: Presenter for the IAIA International SEA Training Course for China funded by the World Bank: Presented the case study of the SEA for the Port of Cape Town (Video presentation).
2002: Various presentations on environmental assessment and management to Peninsula Technikon, Univ. of Stellenbosch (Planning, Environmental and Public Admin Departments), and Univ. of Free State, Amatola District Council.
2001: Various presentations on environmental assessment and management to Cape Tech, Pen Tech, Univ. of Stellenbosch, Univ. of Cape Town and Univ. of Free State.
2000: Introductory Course on Environmental Impact Assessment and Management, presented to the Ethiopian Environmental Protection Authority and other regional authorities – Dire Dawa and Harar, Ethiopia. Various EIA/SEA presentations to Cape Tech, Univ. of Stellenbosch and Univ. of Free State.
1999: Introductory Course on Environmental Impact Assessment and Management, presented to the Ethiopian Environmental Protection Authority - Addis Ababa, Ethiopia.
1999: Various Integrated Environmental Management courses presented to the Department of Health - EIA process and regulations.

Debbie Donkin

Principal Consultant, Impact Assessment and Planning

Debbie Donkin is a Principal Consultant in the Impact Assessment and Planning Team within ERM Southern Africa, based in Durban, South Africa.

She has over 13 years' consultancy experience in sustainable and environmental management, including the management of environmental & social impact assessments (ESIAs), production and implementation of environmental management plans (EMPs); and management of public participation processes. She has experience in due diligence assessments, strategic environmental assessments, the production of integrated environmental programs and spatial development frameworks as well as the production of strategic plans for the removal of alien invasive vegetation.

Debbie's recent experience has focused on major infrastructure developments, ranging from pre-feasibility studies through to feasibility, approvals and implementation. In all these phases, her role has been to ensure that environmental and sustainability criteria are taken into account and that the projects have complied with the relevant environmental legislation and international best practice.

Fields of Competence

- Environmental impact assessment
- Environmental audits/reviews/due diligence
- General environmental management and advisory
- Public participation
- Environmental assessment and feasibility
- Environmental management programs and plans
- Wetland delineation and functionality assessment

Education

- MSc (Environmental Biology), University of Natal, Durban, 2000.
- BSc (Hons) (Ecology), University of Natal, Durban, 1997.
- BSc Environmental and Cellular Biology, University of Natal, Durban, 1996.

Languages

- English
- Afrikaans

Key Industry Sectors

- Infrastructure development
- Transport (road, rail, port)
- Urban & rural development

Professional Affiliations & Registrations

- International Association for Impact Assessment-South African Affiliate (IAIAsa)
- Founding member of the Environmental Assessment Practitioners Association of SA (EAPASA)
- Environmental Law Association, SA

Publications

- Donkin, D.A. & Butler, G.W. 2011. From economic to holistic focus, an EIA success. IAIA International, Puebla, Mexico, May 2011. (Presenting author)
- Van Rooyen, M. & Donkin, D.A. 2012. Environment, Health & Safety Lessons learnt from the Southern African Context. IAIA International, Porto, Portugal, May 2012. (Co-author)

KEY PROJECTS

Kusipongo Coal Reserve Scoping and EIA (Kangra Coal), South Africa (2014-2015)
Kangra Coal submitted a mining right application to expand their current mining operations outside Piet Retief, Mpumalanga, South Africa. Environmental and public participation manager responsible for the development of the scoping report as well as the public consultation processes involved with the scoping and the EIA phases.

EIA: Haliburton Completion Tools (HCT) Facility, Takoradi, Ghana (2014)
As part of their operations in Ghana, Haliburton sought to construct an HCT Facility on an undeveloped site in Takoradi. Environmental manager responsible for the appointment and management of the local consultant undertaking the EIA as well as for providing inputs to the EIA and reviewing the studies produced by the specialists. Also responsible for review of designs to ensure compliance and alignment to the EIA.

EIA: Liquid Mud Plant Extension, Takoradi, Ghana (2014)
Haliburton intend to extend their existing Liquid Mud Plant in Takoradi, Ghana. Environmental manager responsible for the appointment and management of the local consultant undertaking the EIA as well as for providing inputs to the EIA and reviewing the studies produced by the specialists. Also responsible for review of designs to ensure compliance and alignment to the EIA.

Due diligence: Concentrated Solar Power Plants (Lender's Technical Advisors) (2012)
Team member responsible for the assessment of the environmental licensing and permitting requirements for the proposed development and construction of two CSP facilities in Northern Cape, South Africa.

Due diligence: Photovoltaic Power Plants (Lender's Technical Advisors) (2012)
Team member responsible for the assessment of the environmental licensing and permitting requirements for the proposed development and construction of six PV facilities across South Africa.

Feasibility for Biomass Combustion Power Plant (2012)
A study was undertaken to determine the feasibility of developing a solid biomass combustion power plant, which would use timber waste from sawmilling operations and possibly alien invasive biomass to generate power. Responsible for compilation of the report which detailed an environmental feasibility assessment of the two sites under consideration; an assessment of the impacts associated with the routing of the power line from the biomass combustion power plant to the nearest substation; and, information on the legal framework applicable to the proposed development of the biomass combustion power plant and associated infrastructure.

Design, Environmental and Social Impact Assessment, and Supervision of the Construction of 8 COSDECs in Namibia (Millennium Challenge Account: Namibia) (2012-2014)
The project involved the design of eight community skills development centres across Namibia following the completion of environmental and social assessments for each site. Environmental manager responsible for compiling the environmental assessment reports for each site as well as the site specific Environmental Management Plans, Public Health & Safety Plans and HIV/AIDS Awareness Plans for the construction phase as well as management of the Environmental Officer during the construction phase.

Development of an Arts & Crafts Centre, Swakopmund, Namibia (Millennium Challenge Account: Namibia) (2012-2014)
The project involves the design of an Arts & Crafts Centre in Swakopmund, Namibia, preceded by the completion of an environmental and social assessment for the site. Environmental manager responsible for compiling the environmental assessment report for the site as well as the site specific Environmental Management Plan, Public Health & Safety Plan and HIV/AIDS Awareness Plan for the construction phase.

EIA: Sibaya Node 4 (Tongaat Hulett Developments) (2011-2014)
Project manager for the EIA for the development of a 116Ha area for residential, community, commercial and retail developments. Responsible for overall management of the EIA process, including managing the production of environmental scoping and impact reports and management plan; for the public participation process including facilitation of public meetings, focus group sessions and one-on-one meetings.

EIA: Expansion of the Gateway Theatre of Shopping (Old Mutual Life Assurance SA) (2011-2013)
Project manager for the EIA for the expansion of the Gateway Theatre of Shopping. Responsible for overall management of the EIA process, including managing the production of environmental scoping and impact reports and management plan; for the public participation process including facilitation of public meetings, focus group sessions and one-on-one meetings. Positive authorisation received.

Basic Assessment: Expansion of the Mpungose Water Scheme (BJFC Consulting Engineers) (2012)
Project manager for the basic assessment for expansion of the Mpungose Water Scheme. Responsible for overall management of the basic assessment process, including managing the production of the basic assessment report

and environmental management plan; for the public participation process including facilitation of public meetings, focus group sessions and one-on-one meetings. Positive authorisation received.

Basic Assessment: Mpungose Reticulation Scheme (BJFC Consulting Engineers) (2013)
Project director for the basic assessment for the Mpungose Reticulation Scheme. Responsible for client liaison, staff training and quality assurance. Positive authorisation received.

Swaziland Rail FEL 2, South Africa & Swaziland (Transnet Group Planning & Monitoring) (2012-2013)
The principal requirement of this project is to provide an alternative link for general freight traffic from South Africa, via Swaziland, to Richards Bay. Environmental and sustainability manager responsible for overall management of the Environmental and Social assessment required the analysis of the proposed route (including alternatives), identifying the environmental and social impacts and opportunities, identification of sensitive ecological habitats, development of a stakeholder engagement strategy as well as development of environmental and sustainability design criteria.

Swaziland Rail Link FEL3, South Africa & Swaziland (Transnet Capital Projects) (2013-2014)
Transnet commissioned Mott MacDonald PDNA to undertake the Feasibility study (FEL-3) for the engineering component of the new proposed rail link between Lothair in the Republic of South Africa to Sidvokodvo in Swaziland. This study forms part of a greater scheme linking the Coal Line with the Ports of Maputo and Richards Bay through a new western connection to the Swaziland network. Environmental and sustainability manager responsible for overall management of the Environmental & Community and Sustainability deliverables associated with the FEL3 stage, i.e. finalisation of environmental and sustainability design criteria, route reviews in line with these criteria as well as the outcomes of the EIAs being carried out in SA and Swaziland, interface between client environmental team and our design team.

Eastern Cape Infrastructure, South Africa (Transnet Capital Projects) (2012-2014)
The contract involves the establishing of a team to manage the full programme of projects required at Port Elizabeth, Port of Ngqura and East London. This incorporates port infrastructure and building works including Admin Craft Basin, the associated works for a new Tank Farm Facility with two new berths, the relocation of two ship-to-shore (STS) cranes from Durban to Port Elizabeth, as well as the provision of foreshore protection and the dismantling of a Grain Elevator Export Gantry at East London. Environmental Discipline Lead responsible for the management of the environmental team appointed to the project; review and quality control of documentation and, ensuring the incorporation of Equator Principles and IFC performance Standards as well as advising on international best practice.

Nacala Port & Rail Outline Design, Mozambique (Eurasian Natural Resources Corporation) (2011-2013)
Environmental manager responsible for the management of the environmental sub-consultant carrying out the EIAs for the 1,200km rail and new port developments associated with the export of coal from Tete province, Mozambique. Apart from managing the consultant, responsibilities include co-ordination of input from the design team to the sub-consultant and identification of environmental constraints and opportunities.

Ithaca Rail Pre-feasibility Study (Ithaca Resources) (2012-2013)
Ithaca Resources proposed the development of a coal project in the Wahau area of the East Kalimantan, Indonesia. The Pre-feasibility Study aimed to identify potential coal transportation options from the project site to ship loading facilities as well as to identify other issues that need to be addressed during the Feasibility Studies to follow. Environmental manager responsible for developing a framework (Equator Principles and Legal) for the environmental and social assessment of the routes, undertaking the assessment, outlining key assumptions and limitations inherent at pre-feasibility stage and recommendations on the way forward. Further responsibilities included identification of sustainability benchmarks, development of sustainability objectives and KPIs.

High-Level Transport Infrastructure Logistics Study (Bushveld Minerals Ltd) (2013)
Team was appointed to investigate and propose supply chain solutions relating to the transportation of materials from mine to port. The Bushveld Iron Ore project comprises two prospecting licences covering a total of almost 7,500Ha in Limpopo Province, South Africa. As this area is located approximately 45km from existing rail and road transport infrastructure and there was a need to evaluate the corridors connecting the site to seaports in Maputo, Mozambique and Richards Bay, South Africa. The project involved the assessment all of the services required to provide the infrastructure to develop the appropriate logistics solution associated with transporting magnetite from the mine to a suitable port terminal, via rail. Environmental manager responsible for undertaking an environmental and social fatal flaws and hot spots analysis based on outputs from route assessments as well as for capturing environmental and sustainability criteria (for mine, rail and port) for future consideration.

Liberia Port & Rail Assessment (ENRC) (2012)
High-level review of two proposed routes for railway lines linking the interior of Liberia with the coast, to transport ore from various mines to the Ports of Monrovia and Buchanan.

Durban Point Car Terminal (Transnet Capital Projects) (2007-2010)
Environmental manager for the Durban Point Car Terminal suite of projects which involved providing an integrated solution to the Client for the transport, handling and holding of motor vehicles for import and export. Environmental management responsibilities included the implementation of the Environmental Management System (EMS) for the construction phase, compilation and adjudication of the environmental portion of construction tenders; and management of the environmental assessment practitioner undertaking the basic assessment for development of the Isipingo Vehicle Staging Area.

Container Terminal Strategy (Transnet Capital Projects) (2011)
Management and compilation of the environmental assessment component of the feasibility study undertaken to determine the opportunities and constraints related to various sites proposed for the development of container terminals for Transnet.

Durban Container Terminal Re-engineering (Transnet Capital Projects) (2007-2011)
Environmental manager for the construction phase of the Durban Container Terminal (DCT) Re-engineering project, the aim of which was to expand Port functionality through the re-engineering of the DCT to maximise the container stacking area available. This involved the relocation of three workshops, materials storage facilities, waste water treatment works and numerous staff facilities, from the DCT to an area referred to as the Y-site. Once the new facilities were constructed and commissioned, the existing buildings were demolished. Responsibilities included implementing the EMS as well as compilation and adjudication of the environmental portion of construction tenders; development and roll out of training for the client's site staff and the contractors.

Durban 2005 (Transnet Capital Projects) (2007-2009)
Environmental manager for the Port of Durban Development 2005 suite of projects which were aimed at expanding and improving the functionality of the Port of Durban. Environmental management responsibilities included the implementation of the EMS for the construction phase as well as compilation and adjudication of the environmental portion of construction tenders.

Pier 1 Tunnel Repairs (Transnet Capital Projects) (2010)
Environmental officer monitoring the contractor's compliance with the projects construction environmental management plan and standard environmental specifications during repairs to the service tunnels on Pier 1, Durban Harbour.

KwaDukuza Climate Change Response Strategy (CCRS) (KwaDukuza Local Municipality) (2012-2013)
Project director overseeing the overall project execution, quality control and client liaison as required, for the development of the KwaDukuza CCRS.

Ugu Environmental Management Framework (EMF) (Ugu District Municipality) (2012-2014)
Project director overseeing the overall project execution, quality control and client liaison as required, for the development of the Ugu EMF. Also responsible for producing the Air Quality report for the Status Quo phase and drafting of the Desired State Report.

Present Ecological Status and EMPr: ACSA Offices, OR Tambo (ACSA) (2013)
Project entailed determining the present ecological status (PES) of a wetland system situated adjacent to a service road at O.R Tambo International Airport, as well as the development of an Environmental Management Programme (EMPr) to recommend mitigation measures for managing the construction of upgraded stormwater infrastructure adjacent to the service road. Project director responsible for undertaking the PES, managing the development of the EMPr and ensuring quality assurance on the project.

Msunduzi Spatial Development Framework (SDF) (Msunduzi Municipality) (2014)
Appointed as a sub-consultant to Iyer Urban Design Studio to provide environmental inputs into the development of the SDF (i.e. status quo (mapping and report), vision development, SDF and implementation, monitoring and evaluation process). Internal project director responsible for overseeing the environmental status quo phase followed by direct project involvement from the vision development phase onwards.

Programme Management Support for the Implementation of the Neighbourhood Development Grant (NDPG) in Msunduzi Municipality (Greater Edendale Area) (Msunduzi Municipality) (2014)
Appointed as a sub-consultant to Iyer Urban Design Studio to undertake the environmental, engineering and funding assessment and proposals for the Msunduzi NDPG project for the Edendale area. Internal project director responsible for quality assurance and review of reports. Specific responsibility for development of the Environmental Status Review Report and the ICT Status Review Report.

Ekurhuleni Integrated Rapid Public Transport Network (Ekurhuleni Metropolitan Municipality) (2011-2012)
Strategic assessment of the legislative framework and environmental risks and constraints which would apply to the construction and implementation of the proposed Ekurhuleni Integrated Rapid Public Transport Network, including roads and associated infrastructure, passenger stations and holding depots.

eThekwini Integrated Rapid Public Transport Network (eThekwini Transport Authority) (2011-2013)
Strategic assessment of the legislative framework and environmental risks and constraints which would apply to the construction and implementation of the proposed eThekwini Integrated Rapid Public Transport Network, including roads and associated infrastructure, passenger stations and holding depots.

Msunduzi Integrated Rapid Public Transport Network (Msunduzi Municipality) (2012–2013)
Environmental manager overseeing the strategic assessment of the legislative framework and environmental risks and constraints which would apply to the construction and implementation of the proposed Msunduzi Integrated Rapid Public Transport Network, including roads and associated infrastructure, passenger stations and holding depots.

Environmental Compliance Monitoring: Expansion of the Mpungose Water Scheme (BJFC Consulting Engineers) (2012-2013)
Project manager responsible for introducing the environmental management system, initial site audit, providing training to the Environmental Control Officer and quality assurance.

Due diligence: Establishment of a Women and Children's Hospital (FMO: American Hospital Ltd, Nigeria) (Lender's Technical Advisors) (2014)
Team member responsible for the review of available documentation (EIA Report and specialist studies), and an evaluation of the documentation and processes thus far against the requirements of the local legislation, the Equator Principles and the IFC Performance Standards.

Due diligence: Establishment of a Specialist Hospital (ICD, Nigeria) (Lender's Technical Advisors) (2014)
Team member responsible for the review of available documentation (EIA Report and specialist studies), and an evaluation of the documentation and processes thus far against the requirements of the local legislation, the Equator Principles and the IFC Performance Standards.

Due Diligence: Mamba cement - 2800tpd cement plant, SA (Technical Lender's Advisors) (2012-2014)
The first phase of the project entailed undertaking an E&S due diligence assessment of the proposed project to determine the extent to which the Developer complied with environmental legislation governing the establishment of the plant and the quarries as well as a high level review with respect to compliance with the Equator Principles. The second phase (currently underway) entails undertaking audits of the construction site to ensure compliance with the environmental authorisation and EMP.

Due Diligence: Mamba cement plant, Tanzania (Standard Chartered) (Technical Lender's Advisors) (2013-2014)
Team member responsible for the E&S due diligence assessment and risk review of the proposed project to determine the extent to which the Developer complies with environmental legislation governing the establishment of the cement plant and the quarries as well as a review with respect to compliance with the Equator Principles and IFC Performance Standards.

Due diligence: Business Plan Review: CamTel Cameroon – National Broadband Network (Lender's Technical Advisors) (2012-2013)
Project entailed the establishment of a broadband network in Cameroon. Team member responsible for the review and assessment of environmental impact reports and approvals for the project in light of Equator Principles and the IFC Performance Standards.

CamTel Environmental & Social Action Plan (CamTel) (2013-2014)
Project manager responsible for the development of an Environmental and Social Action Plan, in line with IFC Performance Standards, for an optic fibre network in the Cameroon.

Due Diligence: ESIA Manufacturing Plant, Kenya (Frontier Market Fund Managers) (2012)
Due diligence assessment of a manufacturing company to determine if it met the IFC Performance Standards with respect to its environmental and social policies regarding business as usual and a proposed expansion project. Project manager responsible for the review and assessment of the relevant documentation related to current operations and proposed expansion in light of the relevant Kenyan legislation as well as the Equator Principles and the IFC Performance Standards. Outcomes included proposed improvements to meet the standards and review and acceptance of the company's action plan.

Due Diligence: Glass manufacturing plant), Tanzania (Lender's Technical Advisors) (2012)
Team member responsible for the assessment of the proposed project to determine the extent to which the Developer complied with environmental legislation governing the establishment of the plant as well as a high level review with respect to compliance to the Equator Principles.

Due diligence: Johannesburg Broadband (Rand Merchant Bank) (2012)
Team member responsible for the assessment of the environmental and permitting requirements involved in the development and construction of a broadband network within the greater Johannesburg area.

Vryheid Urban Design Framework (Abaqulusi Municipality) (2012-2014)
The Abaqulusi municipality in South Africa requires a framework to guide future planning and development in their local economic hub – the town of Vryheid. MMPDNA was appointed as sub-consultants to IYER Urban Design Studio to evaluate the current environmental constraints and opportunities for the study area in order to inform the development of this framework. Internal project director overseeing (report reviews and quality assurance) the environmental constraints mapping for the Vryheid town area and local precinct planning as well as the municipal open space planning and the creation of development setback lines.

Ilembe Regional Spatial Development Plan (ILembe District Municipality) (2012)
The IRSDP involved 5 reporting phases, from status quo to implementation planning. MMPDNA were part of a multi-disciplinary team that completed: environmental constraints mapping, constraints reporting, the identification of climate change adaptation opportunity areas through spatial planning, programming of environmental projects for the 2050 horizon and drafting the Scope of Works for several 'top priority' environmental programs as triggers for sustainable development over the next 10 year municipal planning cycle. Opportunities for the green economy were also explored across all sectors. Specific project role was as internal project director responsible for report reviews and quality assurance.

Coastal Management Programme Review (uThungulu District Municipality) (2011-2012)
Project manager for the Review of the Uthungulu Coastal Management Programme, involving the compilation of a Situational Analysis Report, as well as the revision of the existing Coastal Management Programme to include the incorporation of current issues and updating listed projects.

EIA: Inanda Road Petrol Filling Station (Private) (2008)
Management of EIA for the establishment of a petrol filling station. Responsibilities included management of the public participation process, production of reports including the development of an environmental management plan.

EIA: Assagay Retirement Village (C'Est La Vie) (2009-2011)
Management of EIA for the establishment of a retirement village associated with the CareNet group. Responsibilities included management of the public participation process, production of reports including the development of an environmental management plan. A positive environmental authorisation was received.

Basic Environmental Assessment: Warehouse Development, New Germany (Leith Trading cc) (2008)
Management of a basic assessment for the establishment of a warehouse and associated offices. Responsibilities included management of the public participation process; production of reports including the development of an environmental management plan. A positive environmental authorisation was received.

Basic Environmental Assessment: Waterways Residential Development, Tongaat (Cedar Point Trading 20 cc) (2008-2009)
Management of a basic assessment for the establishment of a low to middle income residential development aimed at providing accommodation in close proximity to the airport under construction at La Mercy. Responsibilities included management of the public participation process, production of reports including the development of an environmental management plan.

Environmental Compliance Monitoring, Kindlewood Residential Estate (various individual property owners/ developers) (2010-2012)
Monitoring numerous contractors for compliance with an approved environmental management plan, reporting to the estate management committee as well as to the responsible provincial department.

EIA: Sibaya Precinct (Moreland Developments, now known as Tongaat Hulett Developments) (2006-2007)
Responsible for the production of reports and an environmental management plan for the proposed Sibaya Precinct. The development covers an area of 855Ha, and includes residential, commercial and retail developments. A large proportion of the site will fall under a conservation servitude to be protected and maintained in the long term. A positive environmental authorisation was received for the development of two nodes of the development in the short term.

EIA: Taxi rank, Isipingo (eThekwini Transport Authority) (2007)
Management of EIA for the establishment of a taxi rank in Isipingo. Responsibilities included management of the public participation process, production of reports including the development of an environmental management plan. A positive environmental authorisation was received.

Environmental Management Plan, Richards Bay Industrial Development Zone (uMhlathuze Municipality) (2006)
Responsible for the production of an environmental management plan commissioned by the uMhlathuze Municipality for the construction phase of the Richards Bay Industrial Development Zone.

EIA: P50 Upgrade (KZN Department of Transport) (2003)
Project entailed the upgrading of the P50/15 through the Nkandla Forest. Project assistant responsible for the production of reports, aspects of public participation and site inspections.

Environmental Compliance Auditing: Mtomuhle Low Cost Housing, Verulam (eThekwini Municipality, Housing Department) (2003-2004)
ECO responsible for auditing contractor compliance with the approved EMP and environmental authorisation for the development of 400+ houses in Verulam.

Environmental Compliance Auditing: Waterloo Low Cost Housing, Verulam (eThekwini Municipality, Housing Department) (2003-2004)
ECO responsible for auditing contractor compliance with the approved EMP and environmental authorisation for the development of 400+ houses outside Verulam.

uMhlathuze Water Alien Vegetation Removal Programme (uMhlathuze Municipality) (2003)
Team member involved in the production of a strategic plan for the removal and control of alien invasive plants within the uMhlathuze River catchment. Tasks involved data collection, information ground truthing and mapping culminating in the production of the strategic plan.

Environmental Impact Assessment, Umhlanga College (Moreland Developments, now known as Tongaat Hulett Developments) (2002-2003)
Management of EIA for the establishment of a private school in Umhlanga. Responsibilities included production of reports including the development of an environmental management plan. A positive environmental authorisation was received.

Annex B

Stakeholder Engagement

- B1 - I&AP Database
- B2 - Initial Notification Material
- B2.1 – Notification Letter
- B2.2 - Adverts
- B2.3 - Background Information Document
- B3 - Open House Meeting
- B3.1 - Attendance registers
- B3.2 - Presentation
- B3.3 – Meeting Notes
- B4 – Comments and Responses Report
- B4.1 - Comments Received

B1 I&AP DATABASE

Name	POSITION	INSTITUTION
National Authorities		
Ms Nosipho Ngcaba	Director General	Department of Environmental Affairs
Milicent Solomons	Director: Integrated Environmental Authorisation	Department of Environmental Affairs
Mohammed Essop	Assistant Director - Strategic Infrastructure Developments	Department of Environmental Affairs
Nitasha Baijnath-Pillay	CWDP	Department of Environmental Affairs
Tshililo Aubrey Ramaru	CWDP	Department of Environmental Affairs
Lucas Mahlangu	Waste	Department of Environmental Affairs
Mark Gordon	Chief Director: Integrated Env Authorisations	Department of Environmental Affairs
Dr Monde Mayekiso	Deputy Director General	Department of Environmental Affairs : Oceans and Coasts
Mr Lindelani Mudau	Chief Directorate: Integrated Coastal Management	Department of Environmental Affairs : Oceans and Coasts
Potlako Khati	Chief Director: Integrated Coastal Management and Development (CD: ICM&D).	Department of Environmental Affairs : Oceans and Coasts
Alan Boyd	Oceans and Coasts	Department of Environmental Affairs : Oceans and Coasts
Andy Cockroft	Ocean and Coasts	Department of Environmental Affairs : Oceans and Coasts
Dr Yazeed Peterson		Department of Environmental Affairs : Oceans and Coasts
Professor Edith Vries	The Director General: Agriculture	Department of Agriculture, Forestry and Fisheries
Ms S. Ndundane	(Acting) DDG: Fisheries Management	Department of Agriculture, Forestry and Fisheries
Ms Fatima Samodien	Assistant Director	Department of Agriculture, Forestry and Fisheries

Ms Margaret-Anne Diedricks	Director General	Department of Water and Sanitation
Mr A Starkey	Chief Director	Department of Water and Sanitation
Mr Hopewell Mkhize	Principle Officer	South African Maritime Safety Authority (SAMSA) (Durban)
Cpt. Lobo	Principle Officer	South African Maritime Safety Authority (SAMSA) (Richards Bay)
David Manley	Principle Officer	South African Maritime Safety Authority (SAMSA)
Mr Paseka Nku	Acting Chief Executive Officer	National Energy Regulator of South Africa (NERSA)
Mr Pule Godfrey PG Selepe	Director General	National Government: Department of Transport
Ms Rene de Kock	Statutory Control	South African National Roads Agency Ltd
Dr. Wolsey Barnard	Acting Director General	Department of Energy
Dr Thibedi T Ramontja	Director-General	Department of Mineral Resources
Mr Mziwonke Dlabantu	Director-General	Department of Public Works
Mr Malcolm Nelson		SA Navy Hydrographic Office
Provincial Authorities		
Vishnu Govender	Managing Director	Cooperative Governance and Traditional Affairs
Jeffrey Maivha		Department of Agriculture, Forestry and Fisheries
Tandaza Ntikinca	General Manager	Department of Human Settlements
Mayo Sosibo	Lands Claim Commissioner	Department of Land Affairs
Thembheka Ndlovu	Deputy Director	Department of Land Affairs
Karoon Moodley	Deputy Director	Department of Mineral Resources
Nkosazana Maseko	Regional Director	Department of Mineral Resources
Zanele Gwala	Assistant Director	Department of Mineral Resources
Nonkululeko Khumalo	Environmental Officer	Department of Mineral Resources
Thembeka Ndlovu	District Manager	Department of Rural Development and Land

		Reform
Coleen Moonsamy	Environmental Officer	Department of Water Affairs
Athalia Sebayana	Water Quality Officer	Department of Water Affairs
Nompumelelo Mdlalose	Environmental Officer	Department of Water Affairs
Omar Paruk	Env. Manager	DEDTEA: Coastal Management
Muzi Mdamba	Environmental Director	Dept of Agriculture and Environmental Affairs
Nelisa Mchunu	Head: Economic Development	Dept of Economic Development
Ross Hoole	Spatial Planning	Dept of Land Affairs
Dejond Chetty	Applications	Dept of Traditional Affairs and Local Govt
Chris Davel	Deputy Director	DWAF - Forestry
Sbusiso Gumbi	Regional Director	KZN Department of Transport
Bongiwe Ndlovu	Head: Transport	KwaZulu-Natal Department of Transport
Local Authorities		
Dr. Nhlanhla J. Sibeko	Municipal Manager	uMhlathuze Local Municipality
Cllr Mduduzi Mhlongo	Mayor	uMhlathuze Local Municipality
Mthokozisi Mhlongo	Project Manager	uMhlathuze Local Municipality
Sharin Govender	Planning and Development Manager	uMhlathuze Local Municipality
Nkosi Sibiya	PA to Municipal Manager (uMhlathuze)	uMhlathuze Local Municipality
Thendeka Mchunu	Mayor	Uthungulu District Municipality
Mandla Nkosi	Municipal Manager	Uthungulu District Municipality
Nozipho Khathi	AQ officer	Uthungulu District Municipality
Ward Councillors		
Frederik Bosman	Ward 1	uMhlathuze Local Municipality
Alen Viljoen	Ward 2	uMhlathuze Local Municipality
David Merryweather	Ward 3	uMhlathuze Local Municipality
Nicholas Madondo	Ward 4	uMhlathuze Local Municipality
John Cele	Ward 12	uMhlathuze Local

		Municipality
Cyprian Kweyama	Ward 13	uMhlathuze Local Municipality
Traditional Leaders		
Tulisiwe Ncube		Dube Traditional Authority
Charles Chili	Chairperson	Dube Traditional Council
Jowel Dube	Member	Dube Traditional Council
Zandile Chili	Secretary	Dube Traditional Council
Sarah Dube	Member	Dube Tribal Authority
Qobile		Kwamonambi Traditional Authority
Wilson Zungu	Trustee	Mkhwanazi Traditional Council
Nikeziwe Mthinyane	Secretary	Sokhulu Traditional Authority
C S Kweyama		Kwa-Dube Tribal Authority
Bhejane Mkhamango		Bhejane Tribal Authority
Mkusawabathethwa Mthethwa		Mhlana Tribal Authority (Kwambonambi)
NGOs and Interest Groups		
Lawrence Mkhaliphi	Outage facilitator	Biowatch South Africa
Martin Taylor	Manager -Avi Tourism	Birdlife South Africa
Barbara Chedzey		Coast Watch / Mtunzini Conservancy
D P Cyprus	Director	Coastal Research Unit
Ken Findlay		Earthwatch/UCT
Chris Ballot	Managing Director	Exxaro
Dominic Wieners	IEM Process/Development Planner	Ezemvelo KZN Wildlife
Tania Dunne		Foskor
Tokoloho Masilo		Mhlathuze Water
Rob Buller		Mhlathuzi water
Chris Burchmore	Environmental Manager	Mondi Forest
Gladys Naylor		Mondi Kraft
Beverley Terry	National Manager	National Association for Clean Air
David Lemmer	Project Manager	Pulp United
Sandy Camminga	Chairman EIA Sub-committee	RB Clean Air Association

Jeremy Smith	Managing Director	Richards Bay Ratepayers & Residents Association
Rita Gopalkista		SA Portal Operation
Gerhard de Beer		Spoornet
Eben Scholtz	Planning and Development Manager	Ticor South Africa/Exxaro KZN sands
Andrew Venter	CEO	Wildlands Trust
Carolyn Schwegman		Coastwatch
B. B. Biyela	Chairperson	Zululand Chamber of Business
Magugu Rapuleng	C.E.O	Zululand Chamber of Business
Frans van der Walt		Zululand Chamber of Commerce and Industry
Debbie Smith		Zululand Environmental Alliance (ZEAL)
Digby Cyrus		Zululand Environmental Alliance (ZEAL)
Tim Condon		Zululand Wildlife Forum
Theo Graham		Mhlathuze Water
Vishnu Govender		Cooperative Governance and Traditional Affairs (COGTA)
Mnyamezile Dlamini		Regional Land Claims Commission
RBIDZ		
Sihle Ngcamu	Executive Manager : Business Development and Strategy	RBIDZ
Percy Langa	Environmental Manager	RBIDZ
Khanyi Dlamini	Specialist planner in the office of the CEO	RBIDZ
Eskom		
Ed Bunge		Eskom
Troyd Govender	Senior Environmental Advisor, Eastern Region	Eskom
Transnet National Ports Authority Richards Bay		
Preston Khomo	Port manager	TNPA
Basil Ngcobo	Port engineer	TNPA
Vumani Ndlovu	Environmental Manager	TNPA
Sabelo Mdlalose	Port captain	TNPA
Cobie Snyman	Real estate	TNPA
Interested and Affected Party		
Russell Stow		

Darryl Hunt		Dynamic Energy Consultants cc
Danie van Wyk	Director	Motla Consulting Engineers (Pty) Ltd
Daniele Ventura	Project Design Engineer	Canopus Energy (Pty) Ltd
Izel van Rooy	Town Planner	Canopus Energy (Pty) Ltd
Sonia Miszczak	Analyst	Atlantic Renewable Energy Partners (Pty) Ltd
David Peinke	Director	Atlantic Renewable Energy Partners (Pty) Ltd
Nomvula Mthembu	Office Administrator	Magnacorp 367
Jacolette Adam	Resident	
Mr Nathi Mthethwa	Chief Operations Officer	uMhlathuze Local Municipality
Dominic José Goncalves	Business Development Manager (Africa)	Abengoa
Robert Løseth		Blystad Energy Management
Vumani Ndlovu	Environmental Manager	Transnet National Ports Authority (TNPA)
Hiadee von Well	Environmental Consultant	Ages (Pty) Ltd
Engela Grobler	EAP	Ages Limpopo (Pty) Ltd
Gladys Naylor	Environmental Manager	Mondi
Riaan Swart		Mondi
Mark Miller		Mondi
Sandy Camminga	Director	Richards Bay Clean Air Association
Wendy Forse		Mtunzini Conservancy and Mtunzini Residents' Association (MRA)
Neil Davies Evans		
Barbara Chedzey		
Jim Chedzey		
Doggy Kewley		
Barbara Kewley		
Anne Balmer		
Bruce Hopwood		
Jeremy Nottingham		Mtunzini Residents' Association (MRA)
George Flook		
Steve Hermann		

Marlene Smit		
Gael Muir		
Paul S Venter		
Nigel Rossouw	Environmental Planner	Shell South Africa (Upstream International Integrated Gas)
Londeka Ngcobo	Control Environmental Officer	DEA: uThungulu District Municipality
André Smuts	Operations Specialist	CNFO & Submarine Networks
Wayne Glossop	Business Development Manager Energy Solutions	Wärtsilä South Africa (Pty) Ltd.
Jeffrey Maivha		Department of Agriculture, Forestry and Fisheries
Frans van der Walt	Quantity Surveyors & Project Managers	QS2000 Plus
IPP Stakeholders		
Seiji Iijima	Head of Business Development Power & Energy	ITOCHU Corporation
Eiichi Takahashi		ITOCHU Corporation
Tebogo More	Business Development	GDF SUEZ Energy Southern Africa (Pty) Ltd
David Peinke	Director	Atlantic Renewable Energy Partners (Pty) Ltd
Sonia Miszczak	Analyst	Atlantic Renewable Energy Partners (Pty) Ltd
Giovanni Serra		ENEL Power
Taf Mhlanga		Tirsano Partners
Mluleki Majola		MOGS
Vi Truong Dinh	Business development	EDF South Africa
Public Meeting 03 November 2015		
David Merryweather		Umhlatuze Councillor Ward 3
Wendy Forse	Chee Member	Mtunzini Conservancy and Coastwatch
Izel van Rooy		Canopus Energy (Pty) Ltd
Antonino Strand		

Daniele Ventura	PM	Canopus Energy (Pty) Ltd
Vumani Ndlovu	Environmental Manager	Transnet National Ports Authority (TNPA)
Solomon	Manager	Magnacorp 367
Alen Viljoen	Ward 2	uMhlathuze Local Municipality
Engela Grobler	Consultant	Ages
Preston Khomo	Manager	TNPA
Basil Ngcobo	Port engineer	TNPA
Frans van der Walt	Quantity Surveyors & Project Managers	QS2000 Plus
Mia Moererof	Jounalist	Zululand Observer
Sharin Govender	Environmental Manager	uMhlathuze Local Municipality
Sabelo Mdlalose	Harbour Master	TNPA

B2 INITIAL NOFICATION MATERIAL

B2.1 NOTIFICATION LETTER

Figure 2.1 Notification letter to stakeholders

Environmental
Resources
Management

2nd Floor
Great Westerford
240 Main Road, Rondebosch
7700, Cape Town, South Africa

Postnet Suite 90
Private Bag X12
Tokai, 7966
Cape Town, South Africa

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www.erm.com

21 October 2015

ERM Ref: 0320839

Dear Stakeholder

Independent Power Producer Programme: EIA for a Floating Power Plant and EIA for LNG Import Facilities, Port of Richards Bay

The Department of Energy (DoE) plans to procure power from a Floating Power Plant to be located within the Port of Richards Bay to help meet South Africa's electricity requirements. Transnet SOC Ltd (Transnet) will need to grant the rights in the Port for this project and, in collaboration with the DoE, also plans to enable the development of Liquefied Natural Gas (LNG) import facilities within the Port of Richards Bay to support the DoE's gas-to- power programme.

The Floating Power Plant and LNG Import Facilities each require Environmental Authorisation through an Environmental Impact Assessment (EIA) in terms of the National Environmental Management Act (NEMA), 1998, as amended. This notification serves to announce the commencement of the separate EIA processes for each Project. For further information about the EIAs, the associated public participation process and how you can register as an Interested and Affected Party (I&AP), please refer to the attached Background Information Document.

ERM invites you to an open house event to find out more, raise issues and pose questions to the Project team.

When: 3 November 2015
Where: Premier Hotel The Richards, 3 Hibbert Drive, Meerensee, Richards Bay
Time: The Project Team will be available at the venue from 14:30 to 19:00 and a presentation will be given at 17:00.

To RSVP or register as an I&AP contact Stephanie Gopaul of ERM:
Tel: 031 265 0033
Fax: 031 265 0150
Email: G2Prichardsbay.eia@erm.com
Postal address: Postnet Suite 59, Private Bag X21,Westville, 3630
Visit the Project website: www.erm.com/gastopower

Yours sincerely

Tougheeda Aspeling

Figure 2.2 Proof of email to stakeholders

To: Tougheeda Aspeling
Cc: Lindsey Bungartz; Debbie Donkin; Nadia Mol
Bcc: ngcaba@environment.gov.za; msolomons@environment.gov.za; MEssop@environment.gov.za; NBPillay@environment.gov.za; taramaru@environment.gov.za; lmahlangu@environment.gov.za; mgordon@environment.gov.za; mmayekiso@environment.gov.za; lmudau2@environment.gov.za; pkhati@environment.gov.za; ajboyd@environment.gov.za; AndrewC@daff.gov.za; ypeterson@environment.gov.za; DG@daff.gov.za; SiphokaziN@daff.gov.za; fatimaS@daff.gov.za; fsamodien@gmail.com; pa.ddgfisheries@daff.gov.za; Centralp@dwa.gov.za; StarkeyA@dws.gov.za; mmpisana@samsa.org.za; wlobo@samsa.org.za; DManley@samsa.org.za; paseka.nku@nersa.org.za; selepeg@dot.gov.za; Dekockr@nra.co.za; Wolsey.Barnard@energy.gov.za; nwabisa.qwanyashe@dmr.gov.za; dg.pa@dow.gov.za; hydrosan@iafrica.com; vishnu.govender@kzncogta.gov.za; JeffreyMA@daff.gov.za; sli.zwane@kzndhs.gov.za; smsosibo@dla.gov.za; tpndlovu@dla.gov.za; karoon.moodley@dmr.gov.za; nkosazana.maseko@dme.gov.za; zanele.qwala@dmr.gov.za; nonku.khumalo@dmr.gov.za; thembeka.ndlovu@drdlr.gov.za; moonsamyc@dws.co.za; sebeyana@dws.gov.za; mdlalosen2@dws.gov.za; omar.paruk@kzndae.gov.za; mdambam@enviroe.kzntl.gov.za; mchunun@kzncted.gov.za; RJHoole@dla.gov.za; dejondchetty@kznlgta.gov.za; davelc@dws.gov.za; Sbusiso.Gumbi@Kzntransport.gov.za; sphiwe.thusi@richemp.org.za; GovendS@umhlathuze.gov.za; sibiyafn@umhlathuze.gov.za; sibiyat@uthungulu.co.za; nkosim@uthungulu.co.za; khathin@uthungulu.co.za; Frik.bosman@gmail.com; BosmanFG@umhlathuze.gov.za; alchris@mweb.co.za; VilioenA@umhlathuze.gov.za; MerryweatherDJ@umhlathuze.gov.za; MadondoNM@umhlathuze.gov.za; CeleJN@umhlathuze.gov.za; KweyamaCS@umhlathuze.gov.za; charleskhumba20chile@yahoo.com; bwsalm@mweb.co.za; taita@birdlife.org.za; jbchedz@global.co.za; dcyms@pan.uzulu.ac.za; kenfin@cetus.co.za; chris.ballot@eoyaro.co.za; wienersd@kznwildlife.com; tmasilo@mhlathuze.co.za; rbuller@mhlathuze.co.za; david.lemmer@pulpunited.com; camminge@iafrica.com; jeremy.smith@absamail.co.za; rita@sportops.co.za; andrew@wildlands.co.za; afromatz@telkomsa.net; sceo@uthungulu.co.za; maququ@zululandchamber.co.za; frans@qs2000plus.co.za; 2009zeal@gmail.com; dcyrus@pan.uzulu.ac.za; tim.condon@ishaw.ca; dfgraham@mweb.co.za; vishnu.govender@kzncogta.gov.za; mnyamezeli.dlamini@drdlr.gov.za; Sihle.Ngcamu@rbidz.co.za; Percy.Langa@rbidz.co.za; Khanyi.Dlamini@rbidz.co.za; troy.govender@eskom.co.za; preston.khomo@transnet.net; basil.ngcobo@transnet.net; vumani.ndlovu2@transnet.net; sabelo.mdlalose@transnet.net; cobie.snyman@transnet.net; russells@gcs-sa.biz; ijima@itochu.co.za; takahashi-e@itochu.co.jp; tebogo.more@gdfsuez.com; david@atlanticep.com; giovanni.serra@enel.com; tafi@tirisanopartners.com; mlulekit@mogs.co.za
Subject: Independent Power Producer Programme: EIA for a Floating Power Plant and EIA for LNG Import Facilities, Port of Richards Bay
Date: 21 October 2015 04:38:00 PM
Attachments: Richards Bay BID 21-10-15.pdf
image001.png

Dear Stakeholder

The Department of Energy (DoE) plans to procure power from a Floating Power Plant to be located within the Port of Richards Bay to help meet South Africa's electricity requirements. Transnet SOC Ltd (Transnet) will need to grant the rights in the Port for this project and, in collaboration with the DoE, also plans to enable the development of Liquefied Natural Gas (LNG) import facilities within the Port of Richards Bay to support the DoE's gas-to- power programme.

The Floating Power Plant and LNG Import Facilities each require Environmental Authorisation through an Environmental Impact Assessment (EIA) in terms of the National Environmental Management Act (NEMA), 1998, as amended. This notification serves to announce the commencement of the separate EIA processes for each Project. For further information about the EIAs, the associated public participation process and how you can register as an Interested and Affected Party (I&AP), please refer to the attached Background Information Document.

ERM invites you to an open house event to find out more, raise issues and pose questions to the Project team.

When: 3 November 2015
Where: Premier Hotel The Richards, 3 Hibbert Drive, Meerensee, Richards Bay
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Figure 2.3 Proof of postage

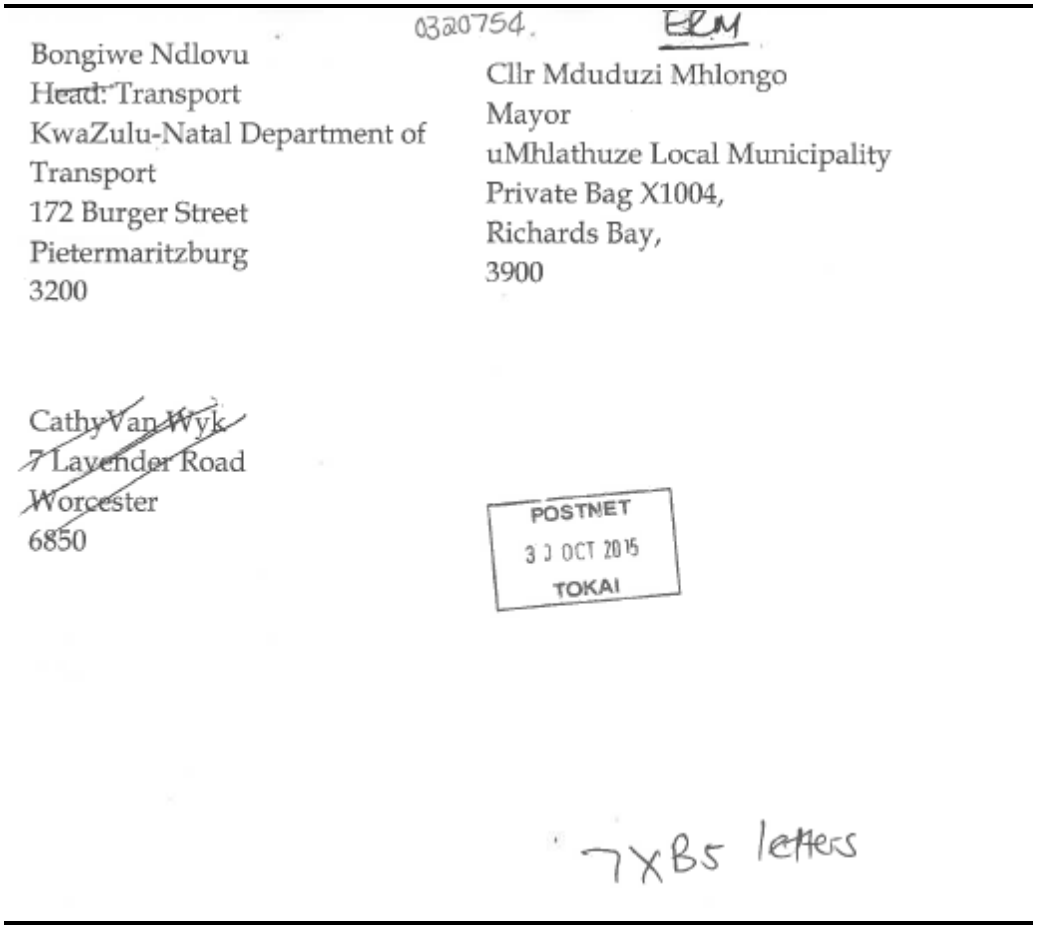

Figure 2.4 Advertisement that was published

ERM Reference Number: 0320839

Environmental Impact Assessment for a Floating Power Plant and LNG Import Facilities in the Port of Richards Bay

INVITATION TO REGISTER AND COMMENT

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The following additional permits may be required: a Water Use Licence in terms of the National Water Act, 1998 (Act No. 36 of 1998); an Air Emissions Licence in terms of the National Environmental Management: Air Quality Act, 2004 (Act No. 39 of 2004); a permit in terms of the National Forest Act, 1998 (Act No. 84 of 1998), and/ or the National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004), for the removal of protected species; and a Coastal Water Discharge Permit in terms of the National Environmental Management: Integrated Coastal Management Act, 2008 (Act No. 24 of 2008).

The competent authority for the two (2) EIAs is the National Department of Environmental Affairs (DEA). Environmental Resources Management (ERM) has been appointed as the independent Environmental Assessment Practitioner (EAP) to undertake the EIAs and associated Public Participation Processes.

Stakeholders are invited to register as Interested and Affected Parties (I&APs) and to participate in the EIA processes by identifying issues of concern and providing suggestions to enhance benefits. A draft Scoping Report and draft Environmental Impact Assessment Report will be made available for comment during each EIA process. Registered I&APs will be kept informed about the Projects and will be notified when these reports are available for comment.

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You are welcome to come at any time to ask your questions and find out more about the **project.**
RSVP to Stephanie Gopaul (details below)

To register as an I&AP, submit comments, and to obtain more information, please contact ERM:

energy
Department:
Energy
REPUBLIC OF SOUTH AFRICA

Stephanie Gopaul
Tel: 031 265 0033 Fax: 031265 0150
Postnet Suite 59, Private Bag X21,Westville, 3630
Email: G2Prichardsbay.eia@erm.com
Project website: www.erm.com/gastopower

TRANSNET

19 October 2015

Figure 2.5 The Mercury published on 19 October 2015

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News

The Mercury MONDAY OCTOBER 19, 2015 3

AGENCY STRUGGLES TO FILL POSTS

Ezemvelo board salaries rocket

Tony Carnie

SALARIES and allowances for Ezemvelo KwaZulu-Natal Wildlife board members have almost quadrupled at a time when the conservation agency is struggling to fill vacant posts and pay its burgeoning salary bill.

Figures in the latest annual report show Ezemvelo budgeted R1.8 million for the remuneration and allowance packages for 12 board members and three independent audit committee members – compared to R1.22 million in the previous financial year (2014).

A financial footnote to these figures states: "The increase in the emoluments from the prior year was due to the alignment of board salaries by the MEC (Mike Mabuyakhulu, MEC for Economic Development, Tourism and Environmental Affairs)."

The steep hike in board remuneration costs has raised several eyebrows at a time when Ezemvelo is still recovering from what acting chief executive David Mabunda has described as "a year of dark clouds".

Last year, former chief executive Bandile Mkhize was suspended by Mabuyakhulu following a government task team report which led to several senior staff having to pay back approved salary hikes because of insufficient funds to pay for the increases.

The latest annual report is also littered with expressions of concern from senior staff about Ezemvelo's apparent inability to fill numerous vacant posts. In his report, acting chief executive Mabunda noted that the marine patrols along the northern KwaZulu-Natal coastline were woefully inadequate.

This unit had shrunk from around 25 staff members in the late 1990s to just five members today.

Vacant

Elsewhere in the report, senior managers of the Isimangaliso Wetland Park reported that "many critical posts were left vacant for the whole financial year".

Ezemvelo's rhino security report notes "there are critical manpower shortages (numbers and capacity) within rhino reserves".

Overtime budgets were also inadequate and poachers were targeting specific reserves perceived to have inadequate staff capacity.

The Mercury sent a list of questions to Mabuyakhulu's office last week. The MEC was asked whether the motivation to increase remuneration emanated from the board members, or whether it was the MEC who personally took the initiative to increase their packages to align with National Treasury guidelines. He was also asked whether such large increases could be justified at a time of financial constraints in Ezemvelo.

In response, his spokesman Bheko Madlala said: "Please note that the rate at which board members of public entities are paid is determined by National Treasury in line with specific guidelines such as the asset base of the entity."

Comfort Ngidi, the chairman of the Ezemvelo board, was also invited to comment on the matter, but no response has been received from his office. Speaking at a recent media briefing, Ngidi made a point of noting that his salary from the board did not accrue to him personally – but to his legal firm, Ngidi and Co, on the basis that the firm needed to be remunerated for his time while conducting Ezemvelo business.

He also noted that board salaries were determined by the MEC and national finance minister.

Neck And Neck

Durban spectators of the Tsogo Sun Amashova cycle challenge give the cyclists encouraging claps and shouts as they make their way to the finish line. The fine weather gave spectators the chance to gather along the road and cheer, especially for some of the cyclists who went the extra mile to make the race fun, such as the one who cycled in a giraffe costume. ▶P10

PICTURE: SHELLEY KJONSTAD

SCANS

Baby deaths probed

PARLIAMENT'S health portfolio committee yesterday expressed sadness at the death of several babies, most likely of klebsiella, at a hospital in Welkom in the Free State.

"A full investigation will be conducted ... Health care establishments must adhere to the national core standards so we do not have a repetition of such incidents," the Office of Health Standards Compliance said. – ANA

Durban car chases

TWO suspects were injured and one was wounded in separate car chases in the Durban Northern area, police said.

Spokesman Colonel Jay Naicker said that during an incident on Friday, the suspects shot at a passing vehicle.

A case of attempted murder was opened. – ANA

Murder suspect held

POLICE officers from the K9 unit and national intervention unit arrested a 45-year-old murder suspect in Melmoth on Saturday, police said.

The man was wanted for a case of murder committed in Cato Manor on November 29, 2014, after a fight between him and another man, Colonel Jay Naicker said. – ANA

Kidnap rescue

JOHANNESBURG central police rescued a kidnap victim and arrested the two alleged kidnappers, aged 28 and 29, at a house in Fordsburg about 2pm yesterday.

"It is alleged that suspects kidnapped a 23-year-old male," Warrant Officer Xoli Mbele said. Relatives received a R20 000 ransom demand – ANA

Bees delay flight

DALLAS: An American Airlines flight at Dallas/Fort Worth International Airport was delayed for more than hour by bees that were swarming under a wing.

A local beekeeper was called in to handle them. When he left another swarm arrived, so he returned. – Reuters

LOTTO WINNING NUMBERS 8 17 22 34 38 47 + 10

LOTTO PLUS WINNING NUMBERS 2 9 20 29 36 41

Richie to say Hello to Durban

Billy Suter

Lionel Richie is to perform at Durban's Moses Mabhida Stadium on Sunday, March 13.

LIONEL Richie, a four-time Grammy Award winner whose many chart-toppers include *All Night Long*, *Dancing on the Ceiling*, *Hello* and *Penny Lover*, will perform his biggest hits in Durban next year.

Big Concerts and East Coast Radio are bringing the American's All The Hits All Night Long tour to the Moses Mabhida Stadium on Sunday, March 13.

Tickets, ranging from R600 to R950, go on sale online at www.bigconcerts.co.za and Computicket outlets at 9am this Wednesday.

The Durban concert marks Richie's first stop on a South African tour that visits Port Elizabeth's Nelson Mandela Bay Stadium on March 16, the Cape Town Stadium on March 18 and Johannesburg's Ticketpro Dome on March 20 and 21.

The worldwide tour has already sold out in Europe, Australia, New Zealand, Asia, the US and the Middle East, according to Big Concerts.

Richie has sold more than 100 million albums and has had enormous success as both a solo artist and as lead vocalist with the Commodores, with whom he recorded the hits *Three Times a Lady*, *Still* and *Easy*.

He wrote *Lady* for Kenny Rogers, had a hit duet with *Endless Love* sung with Diana Ross, and his self-titled debut album earned him his first Grammy for the single, *Truly*.

The diamond-certified Album of the Year winner, *Can't Slow Down*, followed in 1983. Among the 66-year-old's other hits are *You Are*, *Stuck on You*, *Ballerina Girl*, *Running With the Night* and *Say You, Say Me*.

Anger as bridge collapse families wait for support

Gabi Flanga

THE family of one of the people injured when the scaffolding of a bridge over the M1 highway in Johannesburg collapsed are upset that Murray & Roberts, the company responsible for constructing the bridge, still has not contacted them.

Bryce Carlinsky, 19, was trapped under a huge steel pole after the scaffolding collapsed on the taxi he was in on Wednesday afternoon. Two people, including the driver of the taxi, were killed and 21 others were injured.

Since then, Carlinsky has been at the Charlotte Maxeke Hospital in an induced coma with bleeding on the brain, a fractured pelvis and head injuries.

His older brother, Given Mothoa, says they have not received any support from Murray & Roberts, despite the company's promise to assist the victims' families.

"Now the anger is starting to creep in. We came in (at the hospital) and they said someone from Murray & Roberts left flowers. But they haven't left a card or any details. We don't know what's the story, what's going on," he said yesterday.

A statement released by the company on Thursday states: "We have also spoken with a number of the injured and will ensure they, and all affected parties, are receiving the necessary care and monitor their recovery. Over the next period, we will work closely with a team of independent counselling and trauma practitioners to ensure they are given all appropriate assistance."

Mothoa said his brother was still in ICU, and while his physical injuries were starting to heal, brain scans taken on Saturday indicated that the bleeding on his brain had not subsided.

On Saturday more than 3000 people gathered to bid another victim of the incident, Adrian Doorduth, 28, farewell at a moving ceremony in Mount Edgecombe.

Doorduth was with his wife, Chantel, mother, Indrani, father, Ashley, and cousin Jason Perumal when the Toyota Fortuner in which they were was crushed by the bridge. Doorduth's wife and mother were not hurt, but his father and cousin were injured.

The family had gone to Johannesburg early on Wednesday for business.

Mother to appear on human trafficking charge

Sharika Regchand

A 20-YEAR-OLD mother who allegedly tried to sell her 19-month-old toddler on Gumtree will appear again in the Pietermaritzburg Magistrate's Court next Monday charged with contravening the Human Trafficking Act.

Zama Madlala, of Azalea Township, near Imbali, made a brief appearance in the Pietermaritzburg Magistrate's Court on Friday and was remanded.

The woman was arrested the day before at a chicken takeaway in Chief Albert Luthuli Road.

She had allegedly posted an advert on the online classifieds website Gumtree. A visitor to the site alerted police and the trap was set.

The city's police spokesman, Constable Mthokozisi Ngobese, confirmed that a trap had been set by officers in the organised crime unit in conjunction with members of the local criminal record centre, the police radio control unit, the Department of Social Development and himself.

The mother went to the takeaway where she met two undercover police officers. She told them she was selling the child because his father was not supporting him and she could not raise the child on her own.

The woman was paid R5 000 in duplicated notes by the officers, who took the baby.

She was arrested soon afterwards.

The baby is now in the care of social workers.

A local newspaper reported that Madlala told her family members, with whom she lived, that she was taking the child to see his father.

The baby might not come back because the father wanted to keep him, she told the family.

Zimbabwean minister's daughter dies in Cape Town

POLICE have yet to determine how Zimbabwean Minister of Higher and Tertiary Education Professor Jonathan Moyo's daughter, University of Cape Town student Zanele Nakidi Nombitodiwa Moyo, 20, died before her body was found in her flat on Saturday.

The university has contacted the family to offer assistance with funeral arrangements and counselling.

"On behalf of the UCT community I extend condolences to Professor and Mrs Moyo and their family, as well as to Zanele's friends, lecturers and classmates," said UCT spokeswoman Gerda Kruger.

Police spokesman Frederick Van Wyk said there were no signs of external harm on Moyo's body and that a post-mortem would be conducted to determine the cause of death. – Mercury Correspondents

Figure 2.6 Ilanga Newspaper published on the 19 October 2015

ILANGA >> OCTOBER 19-21, 2015
Ezikaqedisizungu 7

UBonang udube umcimbi ngenxa kaDJ Zinhle

LWAZY MBUTHO

UBONANG "Queen B" Matheba uqome ukungawuhambeli umcimbi wesitolo semfashini iH&M, obuseV&A Waterfront eCape Town ngoLwesine ebusuku, ngoba engafuni ukuba sendaweni eyodwa noNtombezinhle "DJ Zinhle" Jiyane **(osesithombeni)** kulandela ingxabano yabo eqhubeka enkundleni yezokuxhumana, iTwitter, kubangwa u-AKA uyise wengane kaDJ Zinhle ongumculi we-*hip hop*.

UBonang obekulindeleke ukuthi abe ngomunye wezitatanyiswa kulo mcimbi, ukhansele ngomzuzu wokugcina ebika ukuthi unesimo esiphuthumayo ekhaya.

Abahleli balo mcimbi bathe ngemuva kokudalula ukuthi uDJ Zinhle uzonandisa kulo mcimbi, kube khona ukungabaza kuBonang okugcine ngokuthi ngoLwesithathu axolise ethi ngeke akwazi ukushiya izinto zimapeketwane ekhaya aye eCape Town.

Kuzokhumbuleka ukuthi uDJ Zinhle ubhale enkundleni yokuxhumana iTwitter ngezinsolo zokuthi uBonang uthandana noyise wengane yakhe u-AKA, futhi banezinyanga eziyisihlanu bethandana.

UDJ Zinhle ugxekwe ngabalandeli bakaBonang ngeledlule, bancoma uBonang ngokuziphatha kahle kwakhe angaphikisani naye (uDJ Zinhle). Kule nkulumo uDJ Zinhle uphendule ngokuthi akanaso isikhathi sokudlala, unezinto ezibalulekile angazenza ngesikhathi sakhe, esho umndeni nomsebenzi athi kudinga isikhathi sakhe Kosaziwayo abebekulo mcimbi kubalwa uBonnie Mbuli, uJoAnn Strauss, uKurt Darren, uJeannie D nabanye. IH&M ivulelwe umphakathi ngoMgqi-

ESEZWE UKUTHI KUNANDISA UZINHLE UTHE AKASEZI.

USOMAHLAYA waseNingizimu Afrika, uTrevor Noah, akakaphenduli ngezinsolo zokweba ihlaya lomunye wosomahlaya baphesheya, uDave Chappelle. **ISITHOMBE: SITHUNYELWE**

BAWUHLABE INHLALI NGEHLAYA

LWAZY MBUTHO

AKAPHENDULI nakancane uTrevor Noah ongusomahlaya ngezinsolo zokuntshontsha ihlaya ngesikhathi emenywe ohlelweni iPoliticon eLos Angeles.

Kubonakala sengathi ngeke bamnike ithuba lokuzikhombisa uNoah njengoba sebeqalile ukubheka izinto ezincane abazomcofa ngazo selokhu eqalile ukwethula uhlelo lwaphesheya kwezilwandle, iThe Daily Show, ekhonjiswa kumabonakude iComedy Central.

UNoah ungene kulolu hlelo ngemuva kokushiya kukaJon Stewart obengumethuli walo, obeselethule iminyaka.

Kusaphele amasonto amathathu kuphela uNoah engenile kulolu hlelo kodwa usebhekene nokugxekwa ngokuntshontsha ihlaya likasomahlaya wase-United states of America, uDave Chappelle, alenze ngowe-1986 elidume nge-"Racism Connoisseur".

Yize uNoah eshintshe izinto ezimbalwa kuleli hlaya kodwa liyefana nelikaChappelle.

IPoliticon wuhlelo olwenziwa izinsuku ezimbili, lusakazwa bukhoma, luhlanganisa osomahlaya nosopolitiki, okulapho uNoah enze khona leli hlaya elimdonsele amanzi ngomsele.

UNoah wamukelwe kakhulu ngabalandeli bakhe baseNingizimu Afrika ngesikhathi eqala kwiThe Daily Show, bemhalalisela ngokuthola ithuba elikhulu kwazise kalandile.

Kuqhamuke imibiko yokuthi kumele enze isiqiniseko sokuthi ujabulisa ababukeli baloku hlelo abase-United States of America njengoba bekukhona idlanzana ebelingeneme ngokungena kwakhe kulona.

Lezi zinsolo zokuntshontsha ihlaya kukaNoah ziza ngemuva kokuba abahleli baloku hlelo bedalule ukuthi selokhu kungene le nsizwa uhlelo lwehle ngezibalo ezingama-33% wababukeli.

Sekuphele isonto kuphumile lezi nsolo kodwa uNoah nabahleli beThe Daily Show kabakaze baphawule ngazo.

Figure 2.7 Zululand Observer published on the 19 October 2015

ZO CLASSIFIEDS 19 OCTOBER 2015

• PUBLIC / LEGAL NOTICES •

Environmental Impact Assessment for a Floating Power Plant and LNG Import Facilities in the Port of Richards Bay
INVITATION TO REGISTER AND COMMENT

ERM

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Postnet Suite 59, Private Bag X21, Westville, 3630
Email: G2Prichardsbay.sa@erm.com
Project website: www.erm.com/gastopower

TRANSNET

MTHONJANENI MUNICIPALITY

Tender Reference 12 /10 / 2015 (LOV)

Request for Proposals to Lease 14 New Vehicles for the period of 36 months

Experienced, qualified, reputable and professional service providers are hereby requested to submit proposals, to assist the Mthonjaneni Municipality with the lease of 14 new vehicles for a period of 36 months as per section 25 (1) of the Municipal Systems Act (no. 32 of 2000) and in terms of Section 110 of the MFMA Act 56 of 2003, read with clause 12d (i) of the Mthonjaneni Municipality SCM Policy.

Any enquiries should be directed to Mr. N. Zikhali – Tel 0354502082 ext 248 during hours 08h00 – 12h30 and 13h00 – 15h15 Monday to Thursday and Fridays 08h00 – 13h00

Tender documents can be obtained from the SCM Department at Mthonjaneni Municipality's Main Offices. An amount of R 379.00 (Three Hundred and Seventy Nine Rand only) cash deposit must be paid in advance, to the cashier in the cashier's hall. **No documents will be issued, unless the tenderer pays the deposit.**

Any proposal submitted by a person(s) who is in the service of the State or if that person(s) is not a natural person, of which any director, manager, principal shareholder or stakeholder is a person in the service of the State or who is an advisor or a consultant contracted with the Municipality, shall not be considered in terms of Regulation 44 of the Municipal Supply Chain Regulations.

Neatly, completed tender documents and attachments, must be placed in an envelope and sealed. The tender reference must be clearly printed on the front of the envelope. This envelope must be deposited in the Tender Box of Mthonjaneni Municipality, on or before 18 November 2015 at 11h00. Tenders will be opened immediately after the closing date and time of the proposal in public.

All writing will be in the English Language. Facsimile, electronic and late bids will not be accepted. Mthonjaneni Municipality will not accept any responsibility for the delivering of bids by courier services or any other means that are not placed in the Tender Box, on or before the closing date and time of bid.

Mthonjaneni Municipality does not bind itself to accept the lowest bid, or any bid.

Mr. R. Mnguni
Municipal Manager
Mthonjaneni Municipality

NOTICE OF WATER USE LICENCE APPLICATION

GREATER MTHONJANENI SSA – 2 BULK WATER SUPPLY PROJECT, UTHUNGULU DISTRICT MUNICIPALITY, KWAZULU-NATAL

Proponent: uThungulu District Municipality

The Greater Mthonjaneni SSA – 2 Bulk Water Supply Project is located primarily within Wards 2 and 3 of the Mthonjaneni Local Municipality. The project, proposed by the uThungulu District Municipality, is aimed at supplying water to the areas south-west of Melmoth. The supply area is remote with many of the households, identified to receive water, having no access to potable water.

Water Use Licence Application
In terms of Chapter 4 of the National Water Act, 1998 (Act No 36 of 1998), in particular, Section 40(4), the proposed project requires a water use licence from the Department of Water and Sanitation (DWS). The applicable water uses are as follows:

- Section 21(c): Impeding or diverting the flow of water in a watercourse. (This section applies because the bulk water pipeline will be built across several wetlands and drainage lines).
- Section 21(i): Altering the bed, banks, course and characteristics of a watercourse. (This section applies because the bulk water pipeline will be built across ephemeral drainage lines and within 500 m of several wetlands).

Invitation to Participate
To register as an interested and/or Affected Party and to obtain further information related to the Water Use Licence Application, please contact the Public Participation Office by 07 January 2016:

ACER (Africa) Environmental Consultants
Keagan Kruger • P O Box 503, Mtunzini, 3867 • Tel: 035 340 2715
Fax: 035 340 2232 • E-mail: mthonjaneni@acerafrica.co.za

19 October 2015

acer AFRICA

ISAZISO SESICELO SEMVUME YOKUSEBENZISA AMANZI

I GREATER MTHONJANENI SSA – AMAPROJECT AMABILI OKUSATSHALALISWA KWAMANZI AMANINGI , KUMASIPALA WESIFUNDA UTHUNGULU, KWAZULU-NATALI

Umthuthukisi: uMasipala wesiFunda uThungulu

Isicelo Semvume Yokusebenzisa Amanzi

Isimemo sokubambiqhaza

ACER (Africa) Environmental Consultants
Keagan Kruger • P O Box 503, Mtunzini, 3867 • Ucingo: 035 340 2715

19 October 2015

acer AFRICA

TENDER NOTICE AND INVITATION TO TENDER

Jozini

Tender No: JMC002/10/15

Renovation and Extension to the Existing Jozini Municipal Offices

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Childline
0800 055 555
Calls are free and

HIV
"I thought it could never

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Department:
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Background Information Document

Independent Power Producer Programme: EIA for a Floating Power Plant and EIA for LNG Import Facilities, Port of Richards Bay:

ERM Ref Number: 0320839

Purpose of this Background Information Document and ERM's Role

The Department of Energy (DoE) plans to procure power from a Floating Power Plant to be located within the Port of Richards Bay to help meet South Africa's electricity requirements. Transnet will need to grant the rights in the port for this project and also plans to enable the development of Liquefied Natural Gas (LNG) import facilities within the Port of Richards Bay to support the DoE's gas-to- power programme. The DoE and Transnet are considering similar projects in the Ports of Saldanha Bay and Ngqura.

The Floating Power Plant and LNG Import Facilities each require Environmental Authorisation through Environmental Impact Assessments (EIAs) from the National Department of Environmental Affairs (DEA) in terms of the National Environmental Management Act (NEMA), 1998 (Act No. 107 of 1998), as amended. This document provides background information on both projects and EIA processes. It aims to assist interested and affected parties to understand the background to the projects, and to provide guidance on getting involved.

Interested and affected parties can play a very important role in the EIA processes and therefore we encourage you to register as an interested and affected party. This will help us to keep you informed throughout the EIA processes. You will have opportunities to engage in discussions on issues, provide comment on the draft Scoping Reports, various specialist study findings as well as the draft EIA Reports that will be produced through the EIA processes. Your input will inform the report's content, and will also be included in the final submissions to DEA, the body that will take the environmental decision on the proposed developments.

ERM's Role in the FPP and LNG Facilities

The DoE has appointed Environmental Resources Management Southern Africa (Pty) Ltd (ERM) as the independent Environmental Assessment Practitioner for the EIAs for both the Floating Power Plant and the LNG Import facilities in Richards Bay. The EIA will be undertaken in several steps, scoping issues and alternatives, coordinating specialist studies and compiling Environmental Impact Reports that set out the anticipated impacts and how these might be mitigated. The EIA reports are prepared to inform an environmental authorisation decision to be taken by the DEA, the competent authority. A further crucial part of ERM's role is to facilitate the active involvement of interested and affected parties in the process.

Get involved. Register as an interested and affected party.

Please complete the enclosed registration/comment sheet or contact ERM to register as an I&AP.

Stephanie Gopaul

Tel: 031 265 0033 • Fax: 031265 0150 • Email: G2Prichardsbay.eia@erm.com

Postal address: Postnet Suite 59, Private Bag X21, Westville, 3630

Project website: www.erm.com/gastopower

The Gas to Power Programme

The National Development Plan (NDP) identifies the need for South Africa to invest in a strong network of economic infrastructure designed to support the country's medium- and long-term economic and social objectives. This requires the development of 10 000 MW of additional electricity capacity to be established by 2025. To achieve this, the DoE has developed a 20-year energy plan for South Africa, the Integrated Resources Plan 2010-2030 (IRP 2010), which encourages the participation of independent power producers (IPPs) in electricity generation in South Africa.

The Independent Power Producers (IPP) Office was established by the DoE, the National Treasury and the Development Bank of Southern Africa (DBSA) to facilitate the involvement of IPPs in the generation of electricity. The IPP Office has to date successfully procured 6 327 megawatts (MW) under the Renewable Energy IPP Procurement Programme. It is currently intended that a further 3126 MW of new generation capacity will be generated from natural gas. For the Gas IPP Procurement Programme, the DoE through the IPP Office has, in collaboration with Transnet, developed a two-phased approach. The first phase is to introduce Floating Power Plants in three of South Africa's commercial ports – Saldanha Bay, Ngqura and Richards Bay. The second phase is to facilitate the import of Liquefied Natural Gas (LNG) in the same three ports, to allow for the development of medium- to long-term gas power plants outside of the port boundaries.

Separate applications and studies are being undertaken by private parties for gas power plants and related infrastructure near the Port. Following a competitive bidding process to be conducted by the DoE through the Independent Power Producer (IPP) Office, the DoE plans to select only one of these parties to develop a gas power plant outside the Port boundary. The competing bidders need to conduct EIAs for their respective project proposals.

Project Description

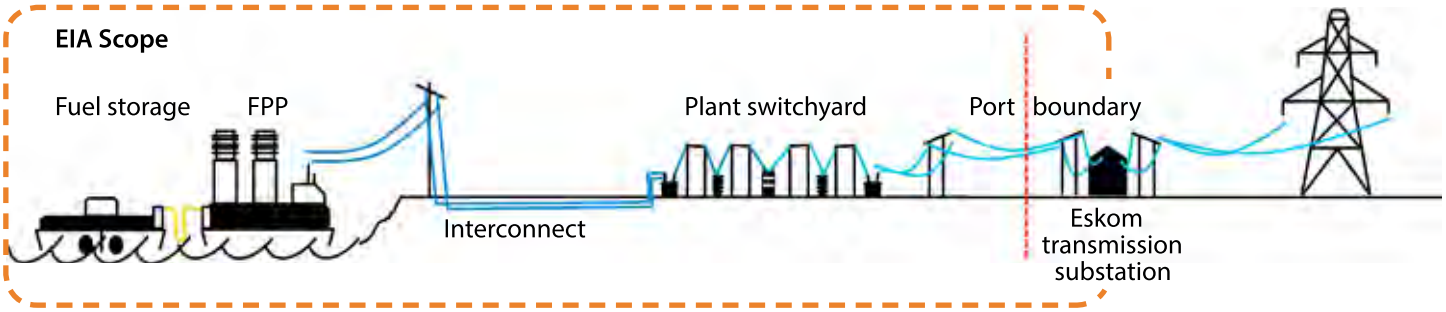
Floating Power Plants

Floating Power Plants are special purpose marine vessels which incorporate power generation equipment and only require a land based switchyard to distribute power. The proposed Floating Power Plant Project has both land-based (terrestrial) and marine-based components, including the following:

- Floating Power Plant which may be a power barge or a self-propelled powership (marine);
- Mooring infrastructure in the form of anchors, dolphin structures and a piled temporary access jetty;
- Floating fuel storage facilities (marine);
- Connection of the fuel storage facility to the Floating Power Plant for the transfer of liquid fuel/gas on board (marine);
- Underground or aboveground power lines connecting the Floating Power Plant to a floating or terrestrial switchyard for the conversion of the power to a higher voltage (marine and terrestrial);
- Transmission line to either the Bayside or Impala substation for distribution into the national power grid (terrestrial).

Several Floating Power Plants could be moored within each port depending on the power generation capacity, the capacity of the relevant substation to distribute this power and space within the Port. There is currently 820 MW capacity available at the Bayside substation.

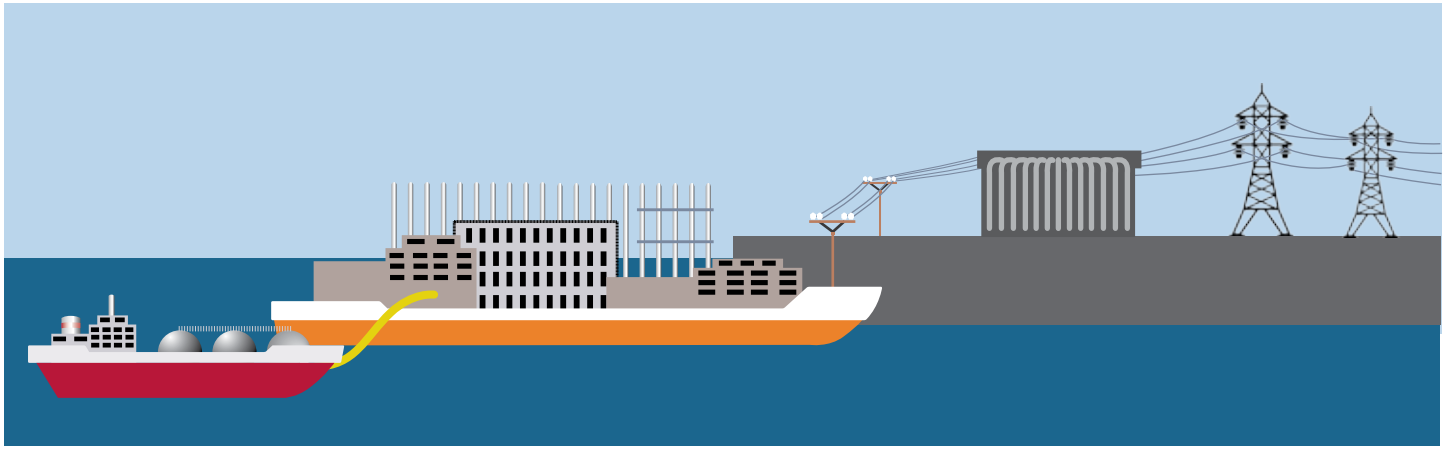
The Floating Power Plant will be powered by liquid fuel and may be converted to a gas powered facility at a later date. Fuel is typically supplied from a bunker barge or tanker vessel moored close to the Floating Power Plant. Refuelling the fuel storage vessel typically takes place once a week via a fuel supply vessel. The Floating Power Plant will operate 24 hours per day for 365 days per year. The Floating Power Plant would be moored within the Port of Richards Bay. Power would be evacuated via a switching yard and a 132 kV transmission line (approximately 2.5 km) to the Bayside or Impala substation, both of which are managed by Eskom.



An illustration of the proposed FPP and the associated infrastructure required to supply power into the national grid

LNG Import Facilities

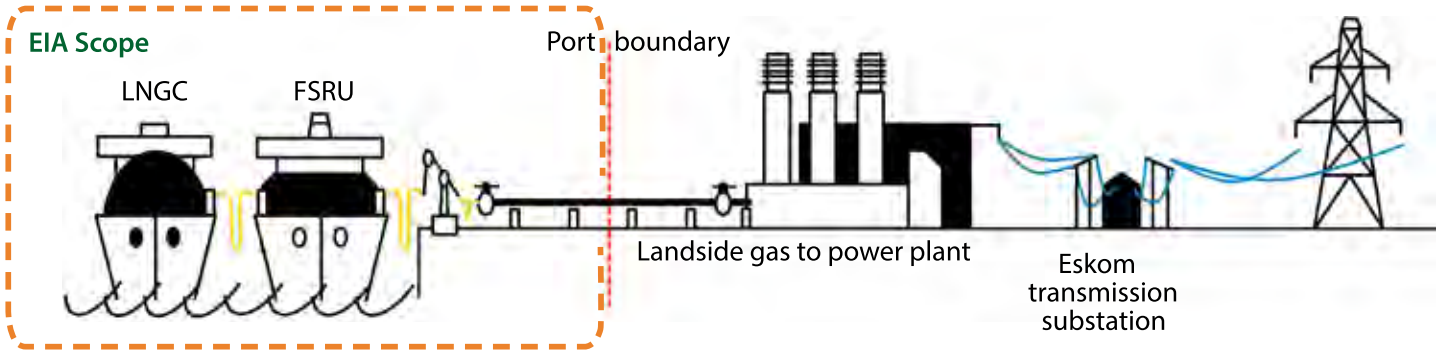
The proposed LNG Import Facilities aim to secure gas supplies to feed to land-based gas power plants, other industrial users and FPPs. The facilities will provide for the importation, storage, regasification and the transmission of natural gas to a distribution hub, and will include both land-based (terrestrial) and marine-based components. There are currently two (2) infrastructure technologies under consideration for this, including the following::



Floating Regasification

The option would consist of the following components:

- A marine import facility consisting of a loading quay, berthing and mooring dolphins, access and services trestle and pipeline;
- A permanently moored Floating Storage and Regasification Unit (FSRU) (marine); and
- A gas pipeline connecting the fuel storage and regasification facility to a common gas distribution hub from which the gas will be distributed to the power plant and domestic users via pipeline.

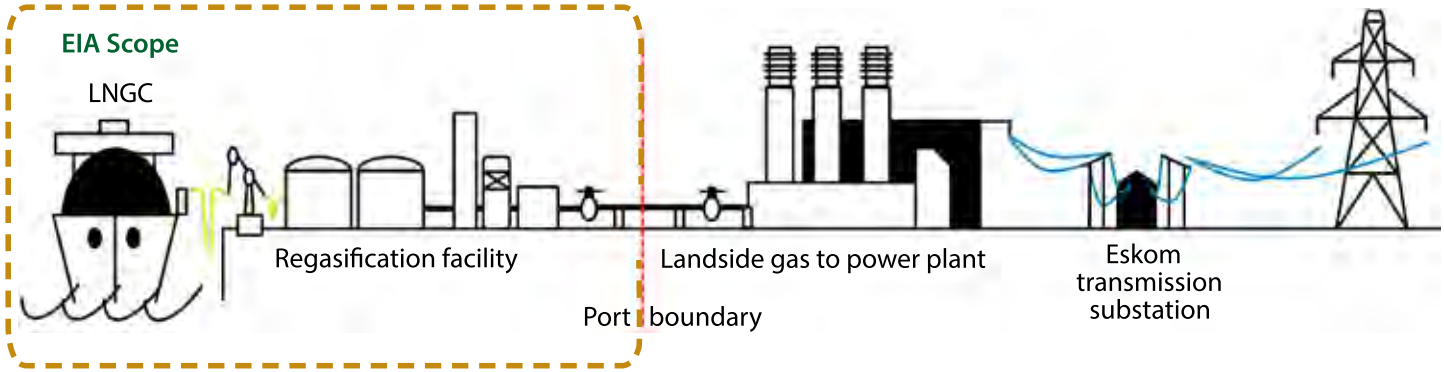


An illustration of the floating egasifi ation technology and how this would link to a landside gas to power plant

Land-based Regasification

The option would consist of the following components:

- A marine import facility consisting of a loading quay, berthing and mooring dolphins, access and services trestle and pipeline;
- A dock at an existing facility in the port or a special purpose docking facility to be constructed for an LNG transport ship;
- A cryogenic gas pipeline connecting the LNG carrier to storage and regasification facilities on land;
- A gas pipeline from the regasification facility to a gas distribution hub which will then distribute the gas further to a power plant and other gas users. Electricity is connected from the power plant to the national grid.



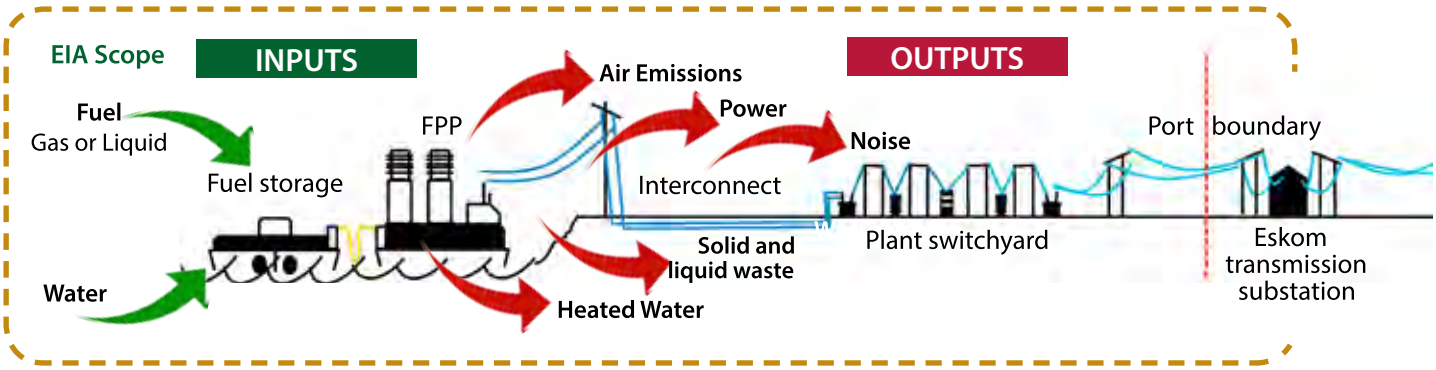
An illustration of the land-based regasifi ation technology and how this would link to a landside gas to power plant

Once operational, LNG carriers will supply the LNG Import Facility which will discharge the LNG load to the FSRU/FSO over a period of approximately 24 hours. It is envisaged that the LNG Import Facility will operate for 24 hours per day for 365 days per year. The location of the LNG import facility would be within the Port of Richards Bay.

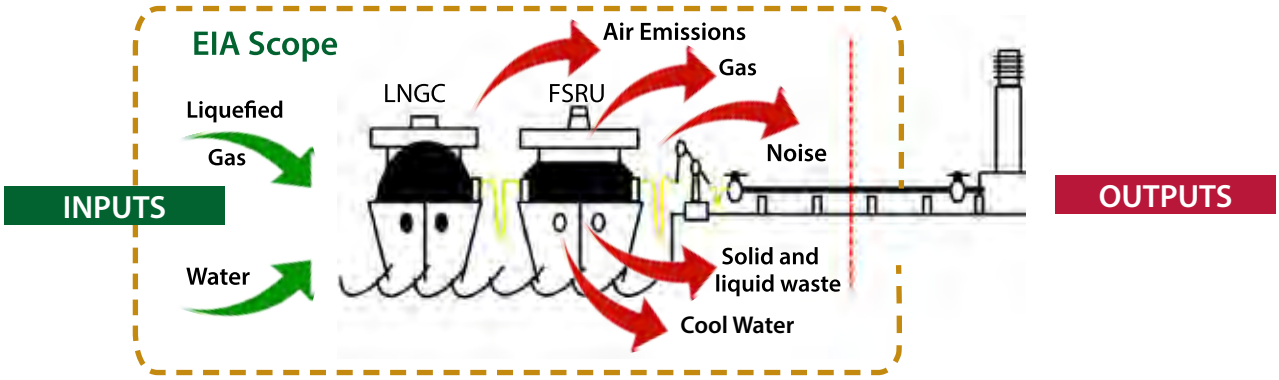
Project Inputs, Outputs and and Potential Concerns

There are a number of activities associated with the construction and operation of a Floating Power Plant and an LNG Import Facility that may result in environmental and social impacts. At this stage the issues of concern shown below will be addressed as part of the EIA process. Additional issues and concerns will be identified during the public participation process.

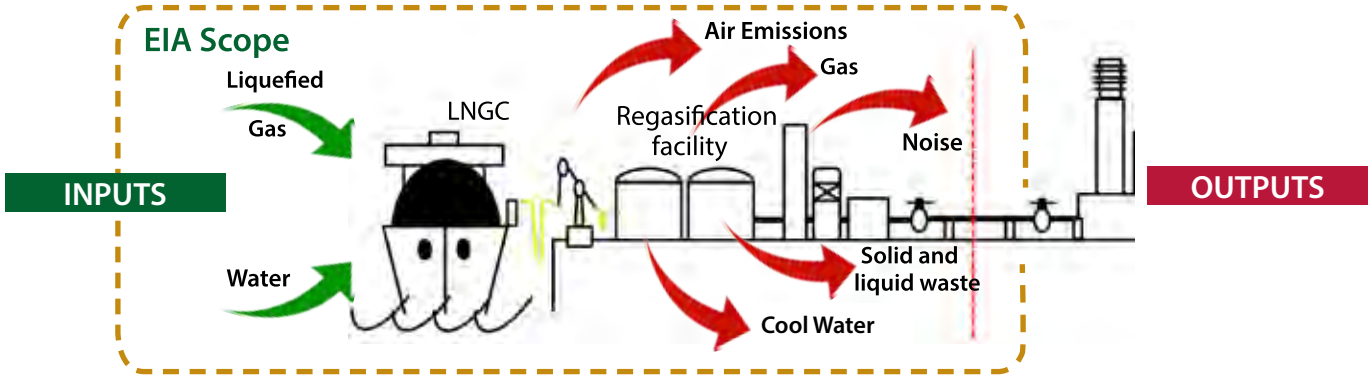
- The potential impact of noise and air emissions associated with each Project, and what this means for people and the broader environment in the area.
- The potential impact of the Projects on terrestrial animals and plants.
- The potential impact of the Projects on marine life.
- The management of waste during the Project lifespan.
- The benefits associated with the Projects, such as increased energy production for the country, and employment creation.



Project Inputs and Outputs for the FPP



Project inputs and outputs for the LNG Facilities using a Floating Storage and Regasifi ation Unit



Project inputs and outputs for the LNG Facilities using land-based regasifi ation

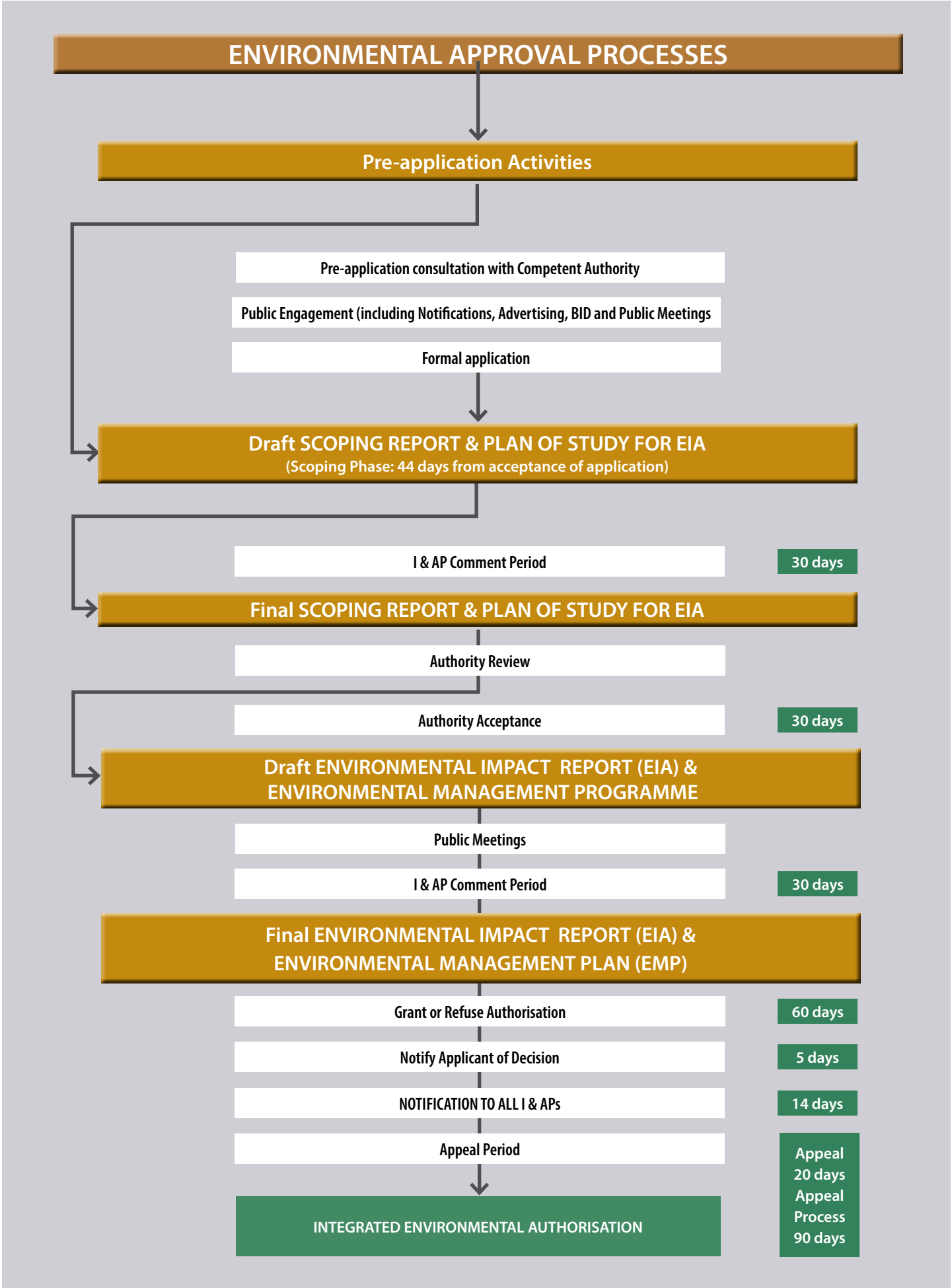
The EIA Processes

- The two (2) Environmental Impact Assessments (EIA) for the proposed Floating Power Plant and LNG Import Facility are being conducted in terms of the National Environmental Management Act, 1998, (Act No. 107 of 1998), as amended (NEMA). The proposed Projects trigger listed activities in EIA Regulations Listing Notice 1 (GNR R983), Notice 2 (GNR 984) and Notice 3 (GNR 985), as well as activities listed in the National Environmental Management: Waste Act, 2008. Therefore, these Projects will require full Scoping and EIA Processes to support any environmental authorisation decisions. A typical full Scoping/EIA Process is explained below.
- **Scoping Phase** – The purpose of the scoping phase is to communicate the proposed project to interested and affected parties, to identify possible positive and negative impacts, alternatives, as well as to determine the terms of reference for specialist studies to be conducted in the EIA phase. This will be set out in the Scoping Report. **The Draft Scoping Reports for the projects will be made available for a thirty (30) day public comment period.**
- **EIA Phase** – The possible positive and negative impacts identified in the scoping reports will be assessed in the EIA Reports. The significance of the impacts will be rated using a prescribed methodology. As the preferred design and technology has not been selected for the projects, an envelope of project description options and impacts will be assessed. The Environmental Impact Reports arising from this phase will include Environmental Management Programmes, which will detail proposed management measures to minimise negative impacts and enhance positive impacts. **The draft EIAs will be made available for a thirty (30) day public comment period.**

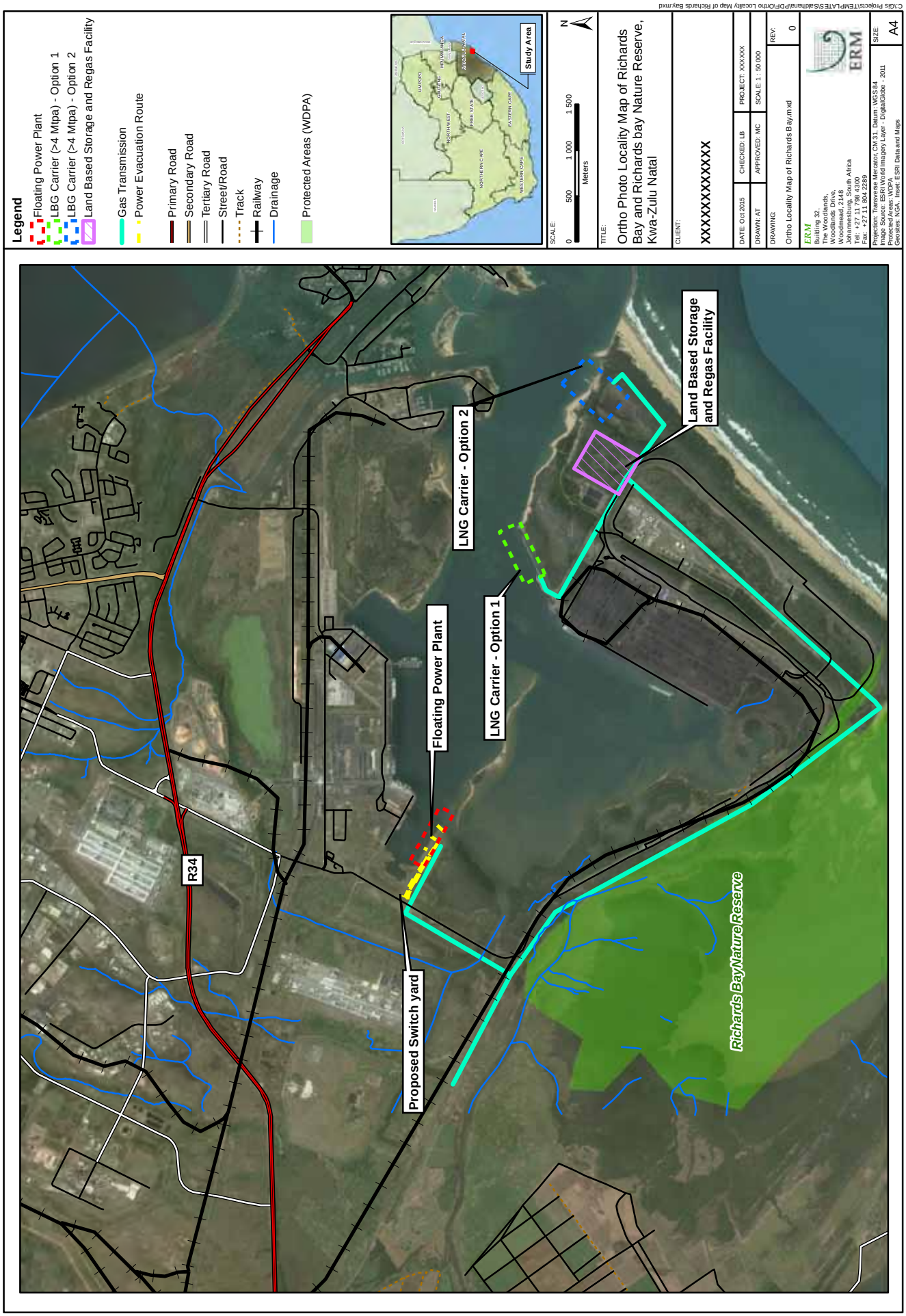
In addition to environmental authorisation being applied for through NEMA, the following permits may be required:

- Water Use Licences in terms of the National Water Act, 1998 (Act No. 36 of 1998);
- Air Emissions Licences in terms of the National Environmental Management: Air Quality Act, 2004 (Act No. 39 of 2004); and
- Coastal Water Discharge Permits in terms of the National Environmental Management: Integrated Coastal Management Act, 2008 (Act No. 24 of 2008).

The National Department of Environmental Affairs (DEA) is the competent authority for both EIAs. The Final Scoping Reports and EIA Reports, along with all stakeholder comments, will be submitted to the DEA for decision making.


ENVIRONMENTAL APPROVAL PROCESSES
Pre-application Activities
Pre-application consultation with Competent Authority
Public Engagement (including Notifications, Advertising, BID and Public Meetings
Formal application
Draft SCOPING REPORT & PLAN OF STUDY FOR EIA
(Scoping Phase: 44 days from acceptance of application)
I & AP Comment Period
30 days
Final SCOPING REPORT & PLAN OF STUDY FOR EIA
Authority Review
Authority Acceptance
30 days
Draft ENVIRONMENTAL IMPACT REPORT (EIA) & ENVIRONMENTAL MANAGEMENT PROGRAMME
Public Meetings
I & AP Comment Period
30 days
Final ENVIRONMENTAL IMPACT REPORT (EIA) & ENVIRONMENTAL MANAGEMENT PLAN (EMP)
Grant or Refuse Authorisation
60 days
Notify Applicant of Decision
5 days
NOTIFICATION TO ALL I & APs
14 days
Appeal Period
Appeal 20 days Appeal Process 90 days
INTEGRATED ENVIRONMENTAL AUTHORISATION

General Port and Substation Overview



EIA for a Floating Power Plant and LNG Import Facility, Port of Richards Bay

Registration and Comment Sheet

October 2015

Send your queries, comments or suggestions on the proposed project to us. You can email, fax, post or hand them to us.

Stephanie Gopaul

Tel: 031 265 0033; Fax: 031265 0150

Postnet Suite 59, Private Bag X21,Westville, 3630

Email: G2Prichardsbay.eia@erm.com

Project website: www.erm.com/gastopower

Comments

Please fill-in our contact details below for the stakeholder database.

Title and Name:			
Organisation:			
Telephone:		**Position:**	
Cellphone:		**Email:**	
Postal Address:			

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Examples of Floating Power Plants

Example of a Liquid Natural Gas Import facility

B3 OPEN HOUSE MEETING

B3.1 ATTENDANCE REGISTERS

EIA for a Floating Power Plant and LNG Import Facility
03/11/2015

ATTENDANCE REGISTER

Title, First name & Surname	Organisation Name	Position in Organisation	Telephone / Cellphone Numbers	Fax Number	Postal Address	Email Address
DAVID MERRYWEATHER	UMHLATUZE COUNCILLOR WARD 3.	Councillor. Ward 3	083 425 2508		P.O BOX 20446 RICHARDS BAY.	
Wendy Forse	Mtunzini Conservancy & Coastwatch	Cttee member	035 3402586 0827223333	-	P.O. Box 611 Mtunzini 3867	twiga@iafrica.com
Izel van Rooy	Canopus Energy		0824197126		—	planwize@telkomsa.net canopusenergy@gmail.com
ANTONINO STRANO	"		0737367000			antonino.strano@[illegible]
DANIELE VENTURA	CANOPUS ENERGY	PM	071 905 2480			DEVELOPMENT@LEWTON.CO.ZA

EIA for a Floating Power Plant and LNG Import Facility
03/11/2015

ATTENDANCE REGISTER

Title, First name & Surname	Organisation Name	Position in Organisation	Telephone / Cellphone Numbers	Fax Number	Postal Address	Email Address
Mr Vumani Ndlovu	TNPA	Environmental Manager	035 905 3362 081 031 3635	—	Box 181 Richards Bay 3900	vumani.ndlovu2@transnet.net

EIA for a Floating Power Plant and LNG Import Facility
03/11/2015

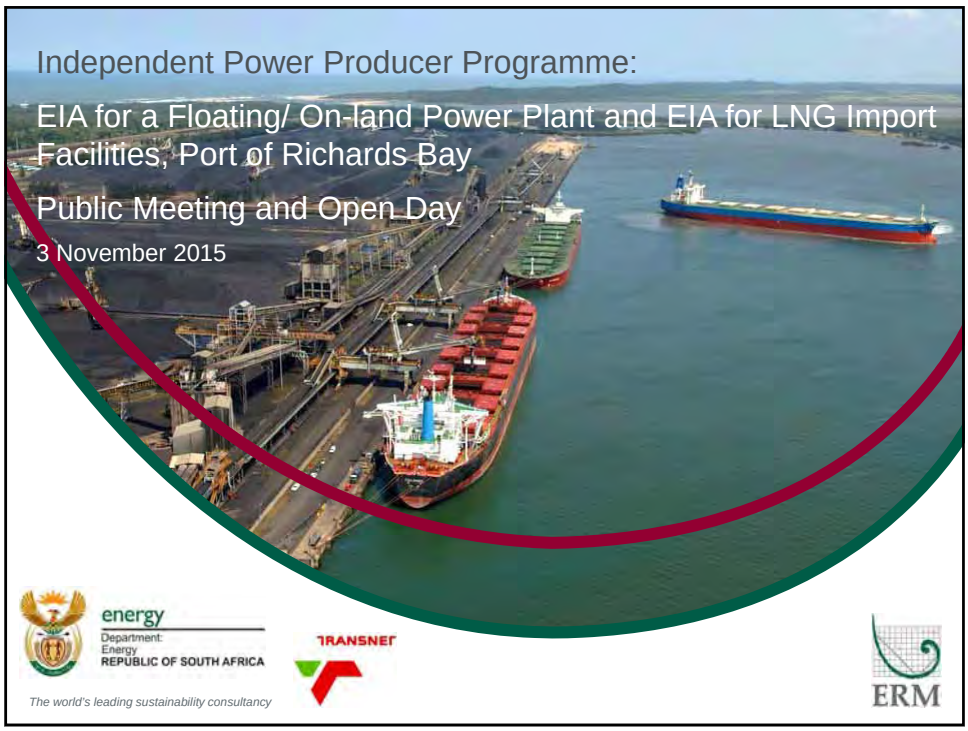
ATTENDANCE REGISTER

Title, First name & Surname	Organisation Name	Position in Organisation	Telephone / Cellphone Numbers	Fax Number	Postal Address	Email Address
FRANS VAN DER WALT	QS2000 PLUS	PRINCIPAL MEMBER	(035) 7534184 0824600875	(035) 7534185	P.O. Box 10376 MEERENSEE 3901	frans@qs2000plus.co.za
Mia Moorcroft (email copy of presentation)	Zululand Observer	Journalist	060 526 6550 035 799 0500		Suite 2 Lira Link Richards Bay	mia@zululandobserver.co.za
Sharin Govender	City of uMhlathuze	Environmental Manager	082450 4187		5 Mark Strasse Richards Bay CBD	Sharin.Govender@umhlathuze.gov.za
SABELO. MDLALOSE	TNPA	HARBOUR MASTER	035-905 3131/3080	035-905 4728	P.O. Box 181 RICHARDS BAY 3900	SABELO.MDLALOSE@TRANSNET.NET

EIA for a Floating Power Plant and LNG Import Facility
03/11/2015

ATTENDANCE REGISTER

Title, First name & Surname	Organisation Name	Position in Organisation	Telephone / Cellphone Numbers	Fax Number	Postal Address	Email Address
SOLOMON	MAGACORP367	MANANGER	0823483322		DOLLADRIVE	magnacorp 367 @ telkomsa.NET
	Council		0824981426			
Engela Grobler	AGES	consultant	0152911577	0152911577	Box 2526 Polokwane 0700	egrobler@ ages-group.com.
Preston Khomo	TNPA	Manager	0359053201		preston.khomo @ transnet.net	
BASIL MCCOTSO	TNPA	MANAGER	0837085906 0359053035		~~PORT OF RBAY~~ PO BOX 181 RBAY 3900	EMAIL.MCCOTSO @ TRANSNET.NET



Independent Power Producer Programme:

EIA for a Floating/ On-land Power Plant and EIA for LNG Import Facilities, Port of Richards Bay

Public Meeting and Open Day

3 November 2015

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Welcome & Intro

- Welcome and introduction.
- The Department of Energy (DoE), the IPP Office, and Transnet.
- Three-phased project:
  1. Floating Power Plants
  2. Import of Liquefied Natural Gas (LNG)
  3. Land-based power plant

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Agenda

Agenda Item	Objectives
Welcome & Introduction (including meeting objectives)	• Introductions by ERM
The Gas to Power Programme	• Overview of the G2P Programme and why its needed
Project Description FPP	• Description of Floating Power Plant and associated infrastructure.
Project Description LNG Import Facilities	• Description of LNG Import Facilities and associated infrastructure.
EIA Process	• Legislative requirements • Process • Current status • Future engagement – opportunities to comment • Stakeholders identified
Issues to be addressed in the EIA	• Potential impacts. • Proposed studies to address the impacts
Next steps and contact details	

3

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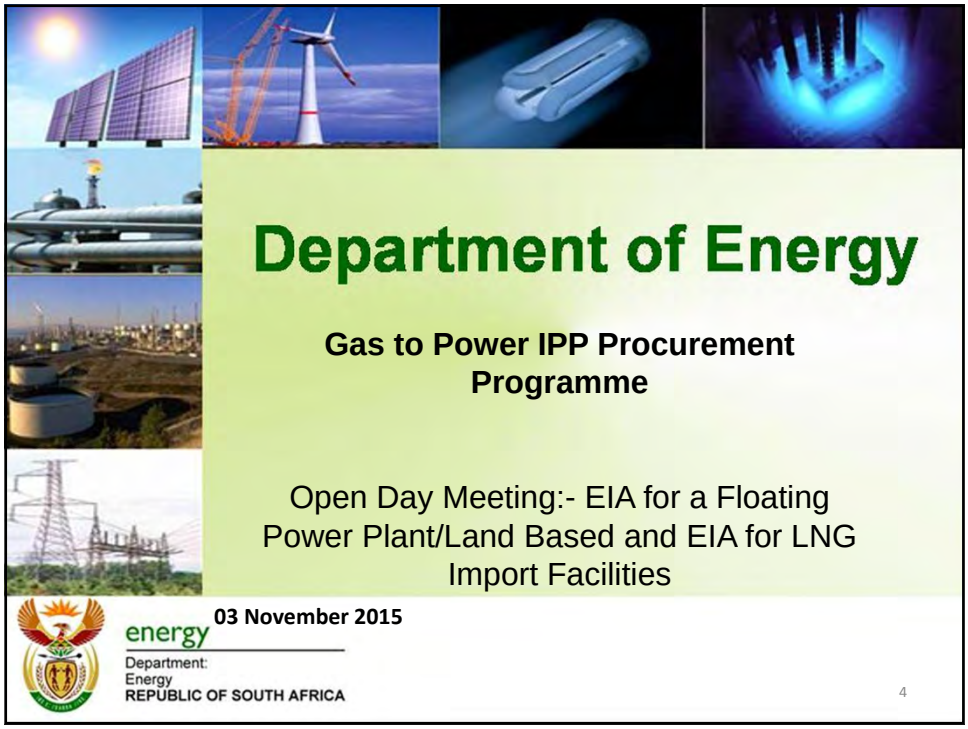

Background

South Africa - overall strategic context

- The South African economy needs to diversify primary energy sources to ensure optimal economic growth and development, both the short and long term.
- Emerging requirement for “load-following” capability to support expansion of the Renewable Energy strategy.
- The National Development Plan (“NDP”), the draft Integrated Energy Plan (“IEP”) and the Integrated Resources Plan 2010-2030 (“IRP 2010”), acknowledges gas as key to economic growth of the country.
- As part of achieving the objectives of the IEP, the IRP 2010 explicitly requires natural gas as an alternative energy source for electrical power generation.

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Background

- The Department also recognises the need to fast-track the short term power projects from all economically viable generation sources.
- This would use a different fuel source in the short term but the technology would be convertible to gas as fuel source as soon as it is available.

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Background

- The Ministerial determination of 18 August 2015 in respect of the Gas IPP Procurement Programme (the "Determination") provides for procurement of 3126MW, which represents years between 2019-2025 of the IRP.
- The gas industry will maximise the socio-economic benefit to South Africa and ensure energy security and primary energy diversification.

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Why Gas?

- Gas is cleaner with less CO2 emissions compared to burning coal or other petroleum fuels.
- Combined Cycle Gas Turbines (CCGT's) generate electricity with 55 to 60% efficiency compared to coal at 32% – 37%.
- The logistics of gas supply is becoming more flexible and internationally available.

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Objectives of Programme

- Early Power which is convertible to gas.
- Timely, reliable and affordable power and gas.
- Delivery and funding through the private sector.
- Minimising the burden on the National balance sheet.
- Ensuring that our actions facilitate the longer term development of the power and gas industry in South Africa – providing an anchor demand for gas and stimulating economic growth.
- Having appropriate involvement and participation of South Africa State.
- Taking an approach that will involve “least regrets”.

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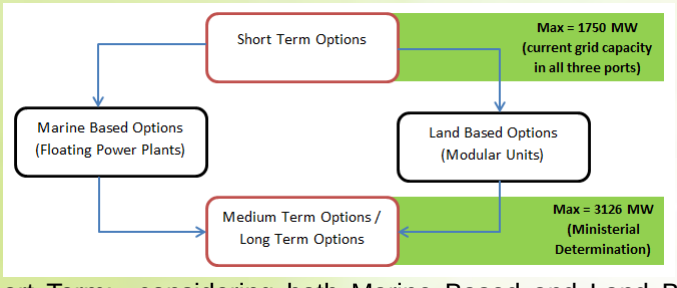
Short, Medium and Long Terms



- Short Term: considering both Marine Based and Land Based Power Generation Options, with a view that neither options should foreclose any of the Medium Term Power Generations Options.
- Medium Term: LNG terminals in ports.

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10

Independent Power Producer Programme

Floating Power Plant		LNG Import Facilities for Gas to Power
Floating Power Plant (Barge/Ship)	Power Plant	Land Based Power Station
5 - 15 years	PPA Contract	20 -25 years
320/600/**820** MW	Target Supply	3126 MW
Liquid Fuels /LPG → Natural Gas	Fuel Type	Natural Gas from LNG terminal
SB | Ng | **RB**	Ports	SB | Ng | **RB**


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Floating Power Plants (FPP)

Special purpose marine vessels requiring limited landside infrastructure

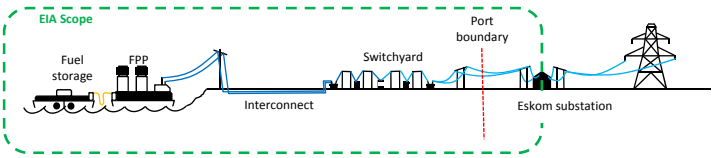
Project components include:

- Floating Power Plant (i.e. more than one FPP required in port)
- Mooring infrastructure
- Floating fuel storage (e.g. Bunker barge)
- Connection between fuel storage and FPP
- Power evacuation (Cables or overhead power line)
- Switchyard (for multiple FPP's)
- Transmission line to the Eskom substation (Bayside or Impala)


Bunker barge servicing multiple FPP

The FPP will operate continuously (24/7; base load)

Seawater may be used for cooling and warmer water discharged into the bay



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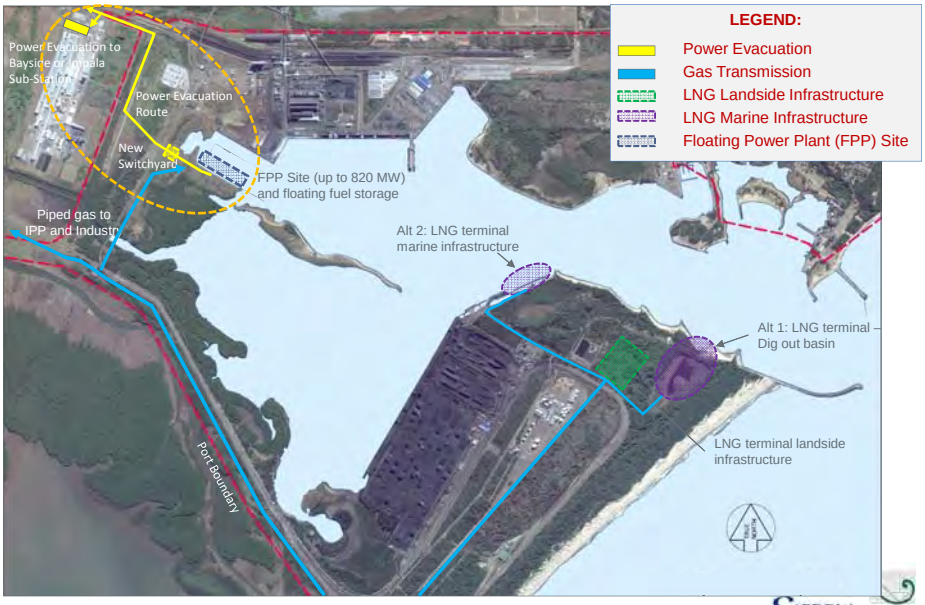
Richards Bay FPP Location



FPP Options

- FPP can be barges or self propelled ships
- FPP capacities range from 50 MW to 500 MW
- Engines or Turbines
- Engines and turbines can run on liquid fuels and/or gas
- Engines and turbines can run in open (simple) cycle configurations or in combined cycle
- Combined cycle includes a steam turbine that uses heat from the Engine/Turbine (most efficient)
- Steam turbines require significant cooling infrastructure

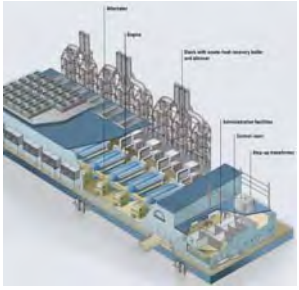
Barge with single gas turbine

Barge

Ship

Engine

Gas Turbine



Barge with multiple engines

LNG Import Facilities

- The LNG import facilities in the port will feed a land-based gas power plant outside the port and other potential gas users

- Main project components include:
  - LNG import berth
  - Storage and regasification facilities
  - Gas transmission via pipelines
  - (Land based power plant)

- The storage and regasification facility can be either:
  - Floating storage and regasification unit (FSRU)
  - or Land-based storage and regasification

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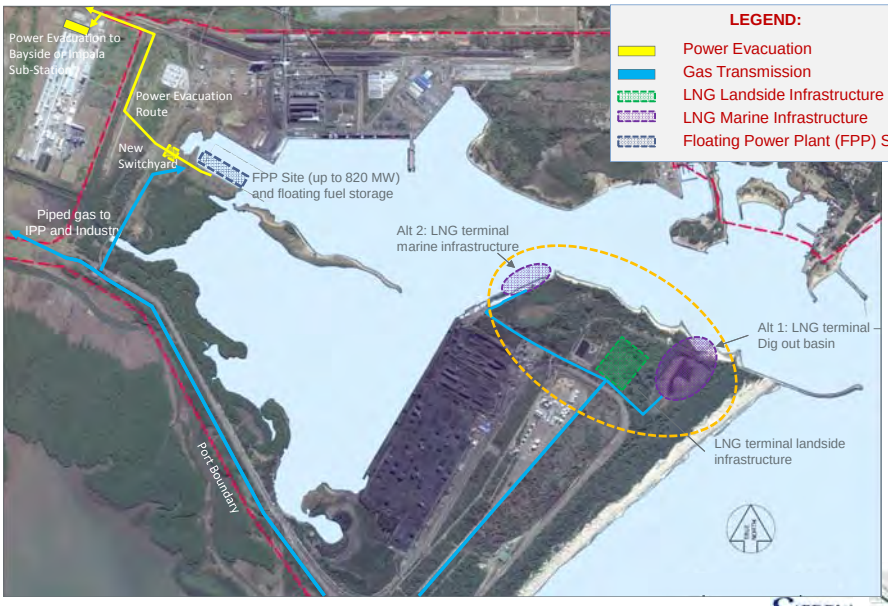
Richards Bay LNG Terminal Location



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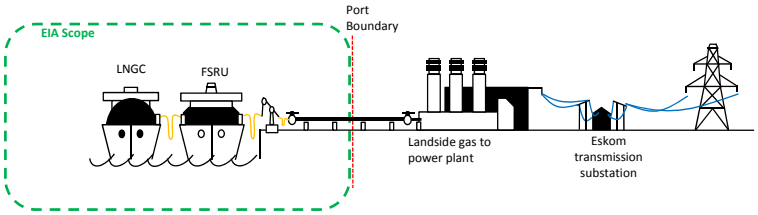
LNG Import Facilities – FSRU Terminal

Floating Storage and Regasification (FSRU) Terminal Option

- Main project components include:
  - LNG and FSRU berth
  - Permanently moored floating storage and regasification unit (FSRU)
  - Access, services and pipeline jetty
- Gas distribution pipeline



LNG Import Facilities – FSRU Terminal

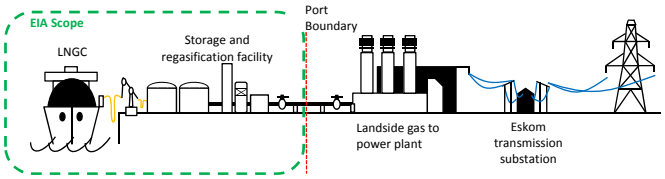
- LNG carriers will supply LNG to the terminal
- LNG discharge will take approximately 24 hours
- LNG import facilities will be available to operate 24/7
- Plan to develop the terminal and start operations in 3 to 5 yrs
- Terminal will operate for 20 to 25 yrs
- Dredging will be required for the dig out berth option
- Seawater may be used in the FSRU regasification process. Discharge water will be 5 to 10 degrees colder

LNG Import Facilities – Land based Terminal

Land-based Storage and Regasification Terminal Option

Main project components include:

- LNG import berth
- Access, services and pipe jetty
- Cryogenic pipeline
- Storage and regasification terminal
- Gas distribution pipeline.



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Environmental Assessment Practitioner

- Environmental Resources Management Southern Africa (Pty) Ltd (ERM) is the independent Environmental Assessment Practitioner.
- ERM will undertake three EIAs.
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Postal address: Postnet Suite 59, Private Bag X21, Westville, 3630
Project website: www.erm.com/gastopower

20

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EIA Process

- Full Scoping and EIA Processes in terms of:
  - National Environmental Management Act, 1998, (Act No. 107 of 1998), as amended (NEMA)
  - EIA Regulations Listing Notice 1 (GNR R983), Notice 2 (GNR 984) and Notice 3 (GNR 985)
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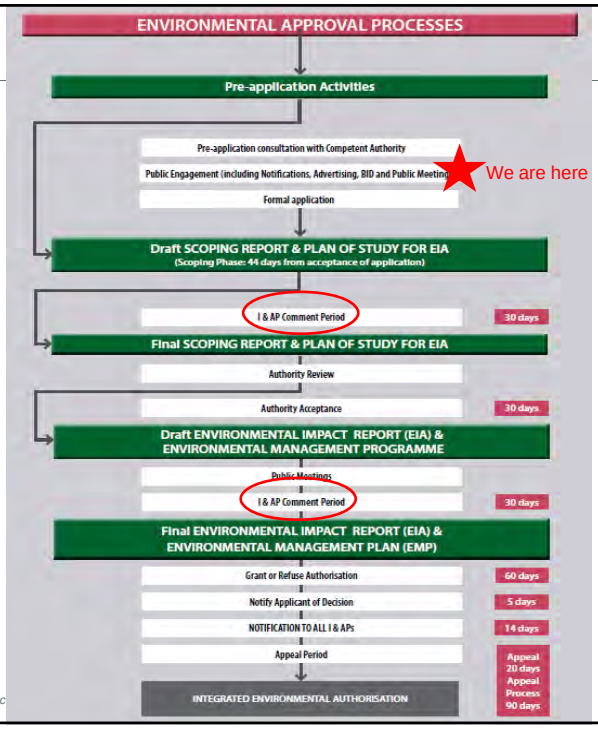
EIA Process

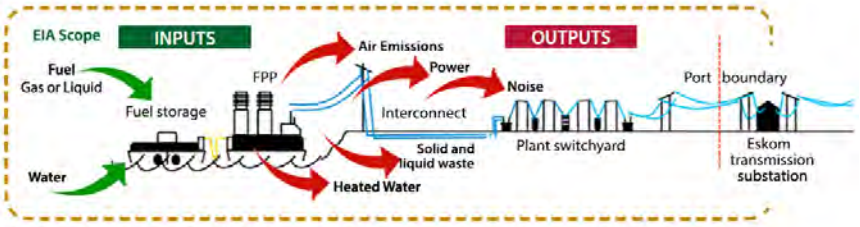
- EIA Phase Objectives
  - Assess possible positive and negative impacts identified
  - Rate significance of the impacts
  - Environmental Management Programmes will detail proposed management measures



EIA Process - Opportunity for public comment

- Register as an I&AP:
  - receive notification when reports are available for comment
  - submit your comments, questions or suggestions to the Project team and receive a response as part of the EIA Report
  - receive updates throughout the EIA process and invitations to further public engagements
  - receive notification when the DEA has made a decision about the Project
- The Draft Scoping Report and Draft EIA will each be available for a 30 day public comment period

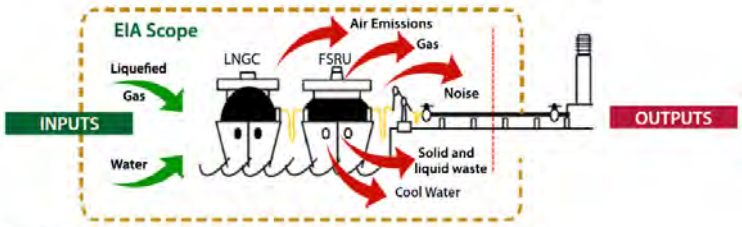
Issues to be addressed in the EIA



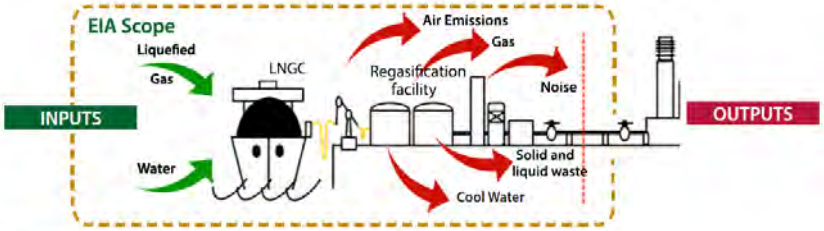
Project Inputs and Outputs for the FPP

ERM

Issues to be addressed in the EIA



Project inputs and outputs for the LNG Facilities using a Floating Storage and Regasification Unit



Project inputs and outputs for the LNG Facilities using land-based regasification

ERM

Issues identified in the public domain

- Air quality impacts
- Source of water
- Cumulative impacts with developments in the area
- Increased number of vessels in the port and collision and marine traffic impacts
- Increased safety risks
- Impact of the transmission lines
- Impact on the aquaculture industry
- Local benefits to communities in the area
- Suggestion of project alternatives

Issues to be addressed in the EIA

Proposed studies to address the impacts include:

- Air Quality
- Noise
- Cultural and Heritage
- Palaeontology
- Terrestrial Ecology
- Marine Ecology
- Marine Modelling
- Qualitative Risk Assessment
- Socio-economic

Next steps

- FPP
  - Draft Scoping Report will be released mid-November 2015
  - Specialists will commence their studies in 2015
  - Final Scoping Report will be submitted to the DEA in early 2016
- Land-based Power Plant
  - Develop project description
  - Initiate scoping exercise
  - Draft Scoping Report to be released at end of 2015
- LNG
  - Draft Scoping Report will be released in early 2016
  - Final Scoping Report will be submitted to the DEA in early 2016

Further comment

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Independent Power Producer Programme:

EIAs for a Floating Power Plant, On-land Power Plant and LNG Import Facilities, Port of Richards Bay

ERC Presentation

10 November 2015

energy
Department:
Energy
REPUBLIC OF SOUTH AFRICA

TRANSNET

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Contents

Item	Objectives
The Gas to Power Programme	• Overview of the G2P Programme and why its needed
Project Description FPP	• Description of Floating Power Plant and associated infrastructure.
Project Description: On-land Early Power	• Description of On-land Power Plant and associated infrastructure.
Project Description LNG Import Facilities	• Description of LNG Import Facilities and associated infrastructure.
EIA Process	• Legislative requirements • Process • Current status
Issues to be addressed in the EIA	• Potential impacts
Next steps and contact details	

Background

South Africa - overall strategic context

- The South African economy needs to diversify primary energy sources to ensure optimal economic growth and development, both the short and long term.
- Emerging requirement for “load-following” capability to support expansion of the Renewable Energy strategy.
- The National Development Plan (“NDP”), the draft Integrated Energy Plan (“IEP”) and the Integrated Resources Plan 2010-2030 (“IRP 2010”), acknowledges gas as key to economic growth of the country.
- IRP 2010 explicitly requires natural gas as an alternative energy source for electrical power generation.
- However, until gas readily available, other fuel sources to be used with technology would be convertible to gas as fuel source.

Why Gas?

- Gas is cleaner with less CO2 emissions compared to burning coal or other petroleum fuels.
- Combined Cycle Gas Turbines (CCGT's) generate electricity with 55 to 60% efficiency compared to coal at 32% – 37%.
- The logistics of gas supply is becoming more flexible and internationally available.

Objectives of Programme

- Early Power which is convertible to gas.
- Timely, reliable and affordable power and gas.
- Delivery and funding through the private sector.
- Minimising the burden on the National balance sheet.
- Ensuring that our actions facilitate the longer term development of the power and gas industry in South Africa – providing an anchor demand for gas and stimulating economic growth.
- Having appropriate involvement and participation of South Africa State.
- Taking an approach that will involve “least regrets”.

Independent Power Producer Programme

On-land & Floating Power Plant		LNG Import Facilities for Gas to Power
Modular units & Floating Power Plant (Barge/Ship)	Power Plant	Land Based Power Station
5 - 15 years	PPA Contract	20 -25 years
320/600/**820** MW	Target Supply	3126 MW
Liquid Fuels /LPG → Natural Gas	Fuel Type	Natural Gas from LNG terminal
SB | Ng | **RB**	Ports	SB | Ng | RB

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Floating Power Plants (FPP)

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Project components include:

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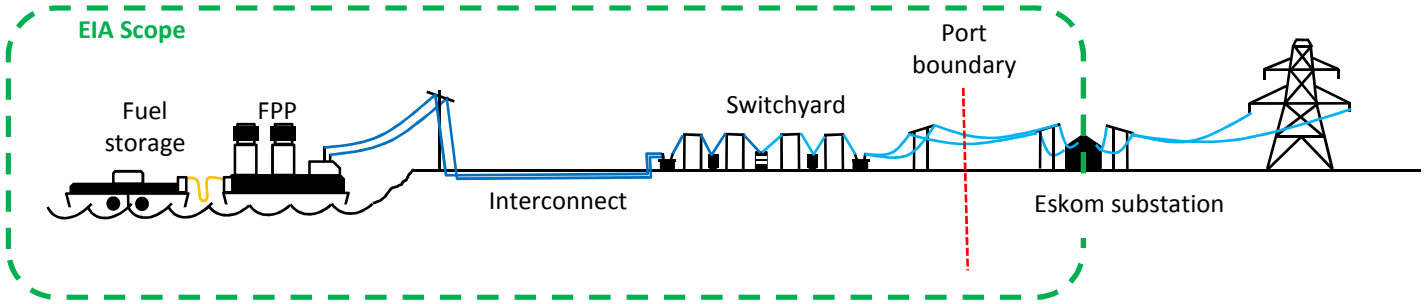
- Connection between fuel storage and FPP
- Power evacuation (Cables or overhead power line)
- Switchyard (for multiple FPPs)
- Transmission line to the Eskom substation (Bayside or Impala)

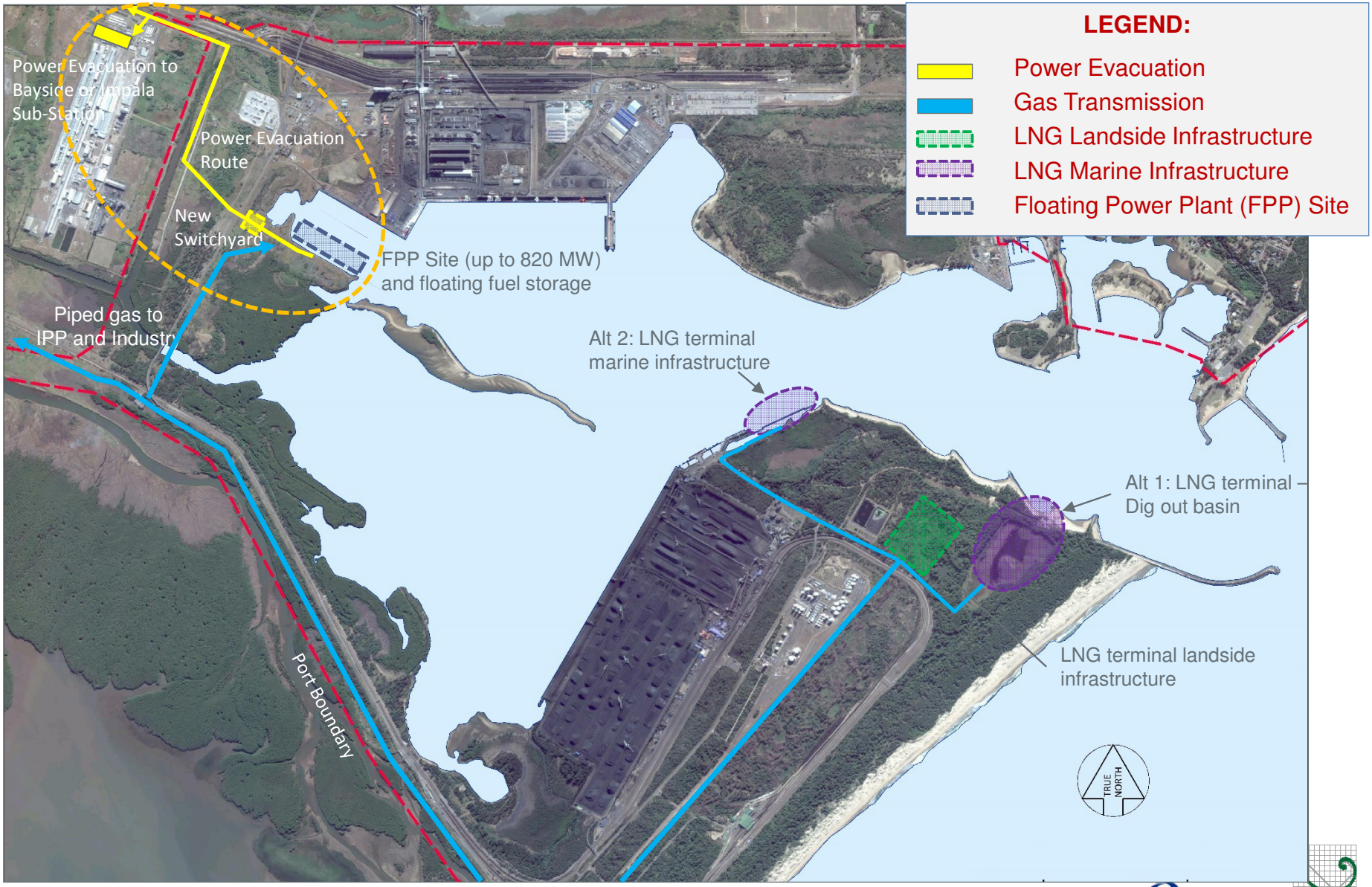
Bunker barge servicing multiple FPP

The FPP will operate continuously (24/7; base load)

Seawater may be used for cooling and warmer water discharged into the bay



Richards Bay FPP Location



PRDW Consulting Port and Coastal Engineers

ERM

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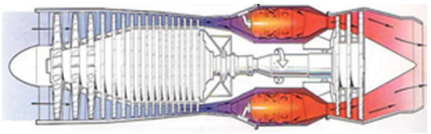
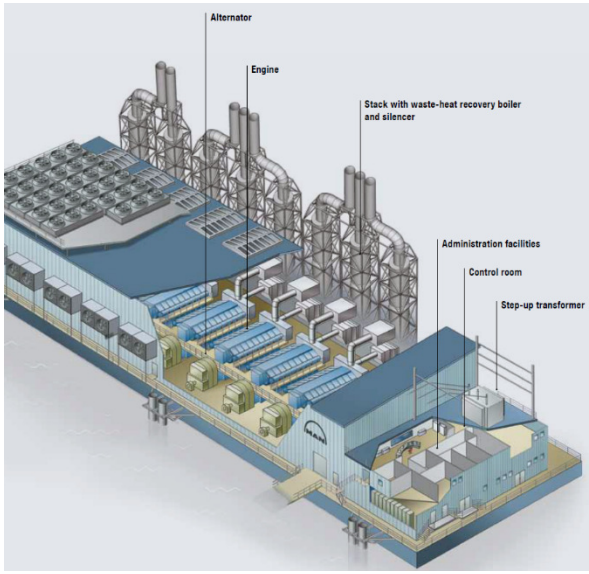
Barge

Ship

Engine



Gas Turbine



Barge with multiple engines

Barge with single gas turbine

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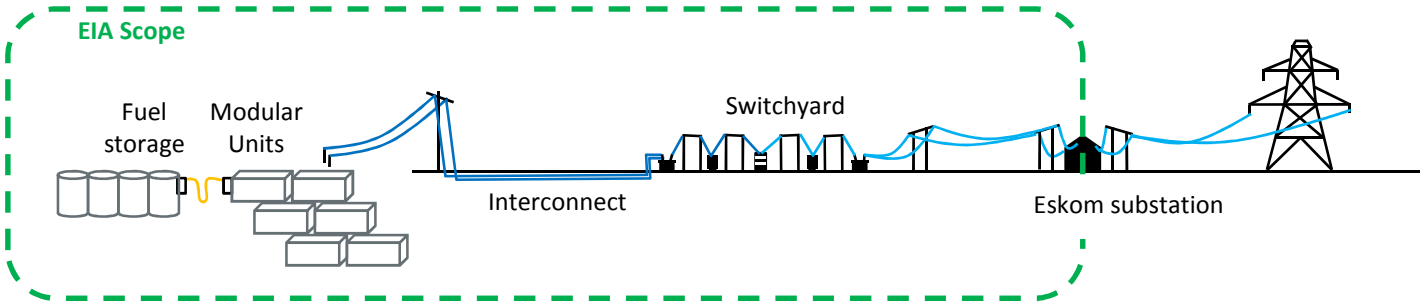
On-land Early Power Project

Project components include:

- Modular units with engines or aero derived Gas Turbine (GT) based generation sets
- Fuel storage
- Connection between fuel storage and modules
- Switchyard (for multiple modules)
- Transmission line to Bayside substation (existing)

The On-land Early Power Project will operate on a 2 shift basis (mid-merit demand)

Generating capacity – max 200MW



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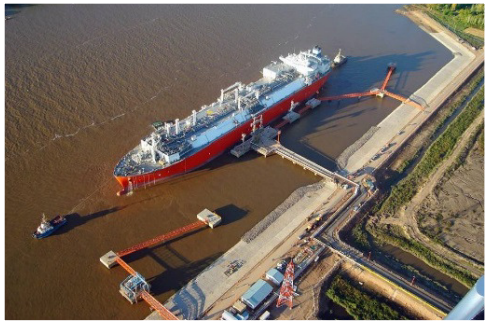
- The LNG import facilities in the port will feed a land-based gas power plant outside the port and other potential gas users



- Main project components include:
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- The storage and regasification facility can be either:
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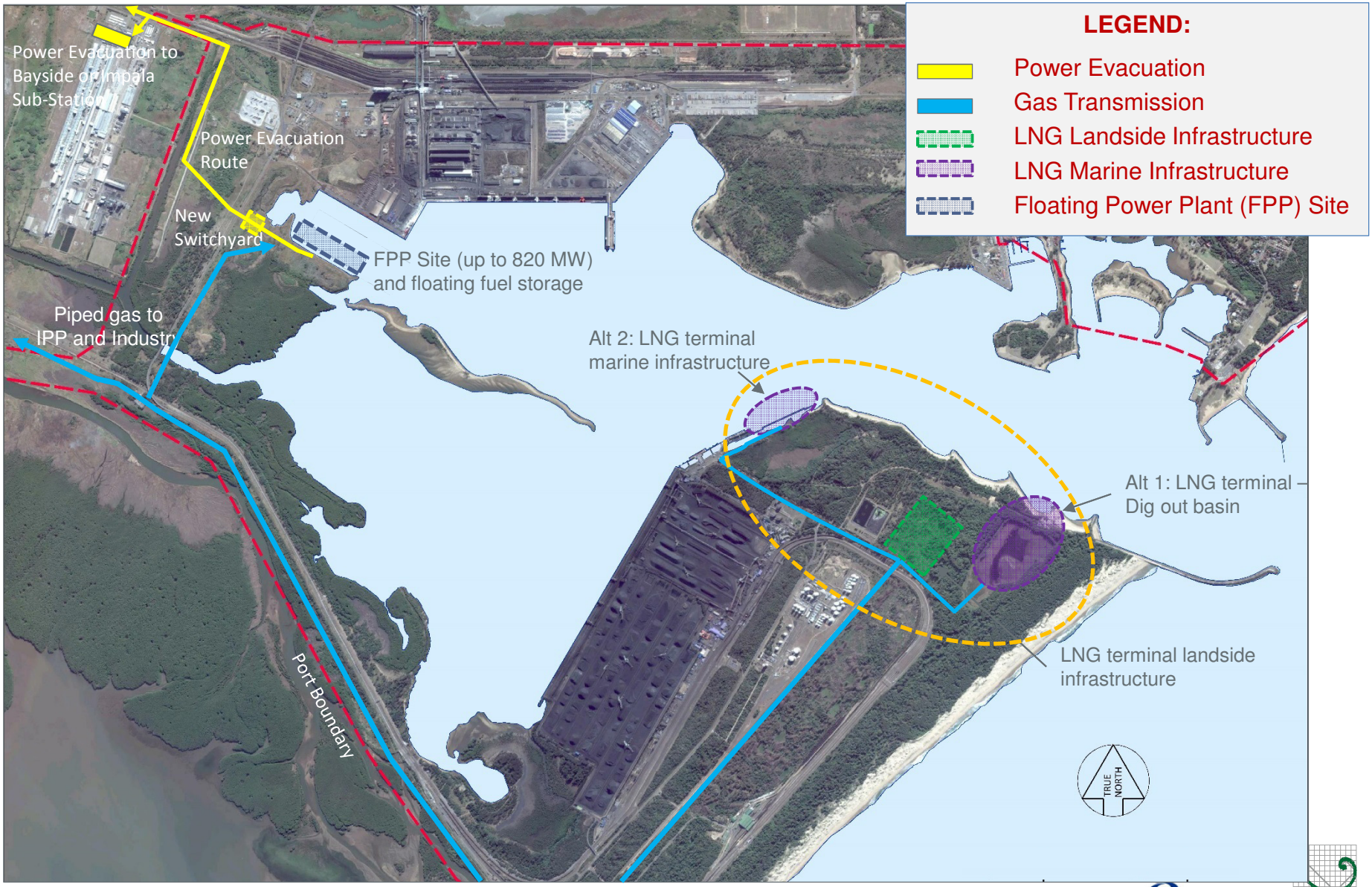
Richards Bay LNG Terminal Location



LNG Import Facilities – FSRU Terminal

Floating Storage and Regasification (FSRU) Terminal Option

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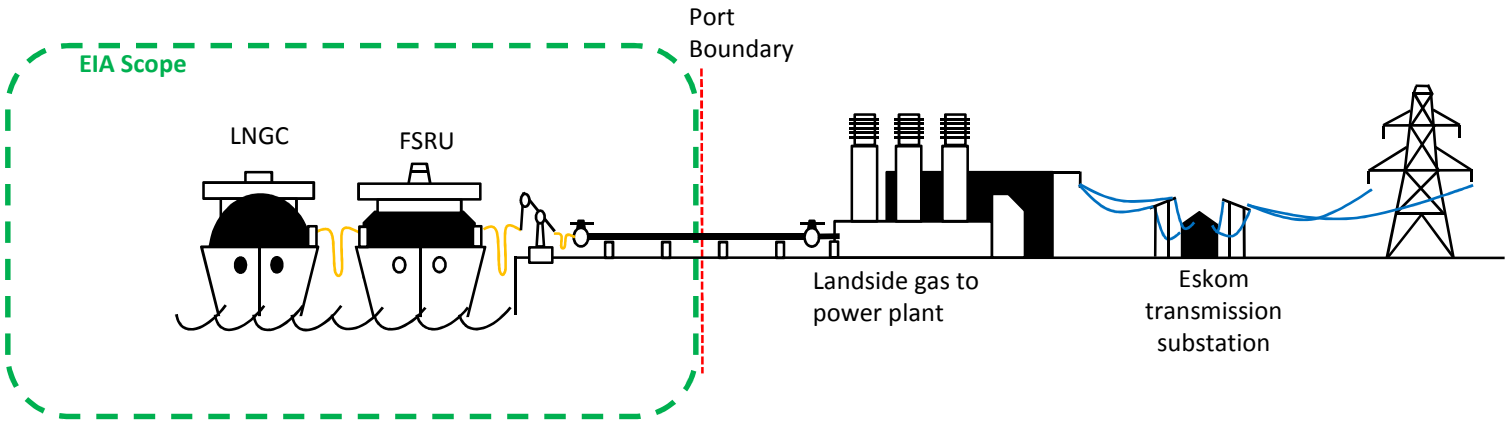

PRDW Consulting Port and Coastal Engineers

ERM

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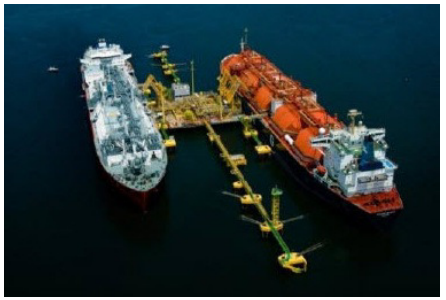

LNG Import Facilities – Land based Terminal

Land-based Storage and Regasification Terminal Option

Main project components include:

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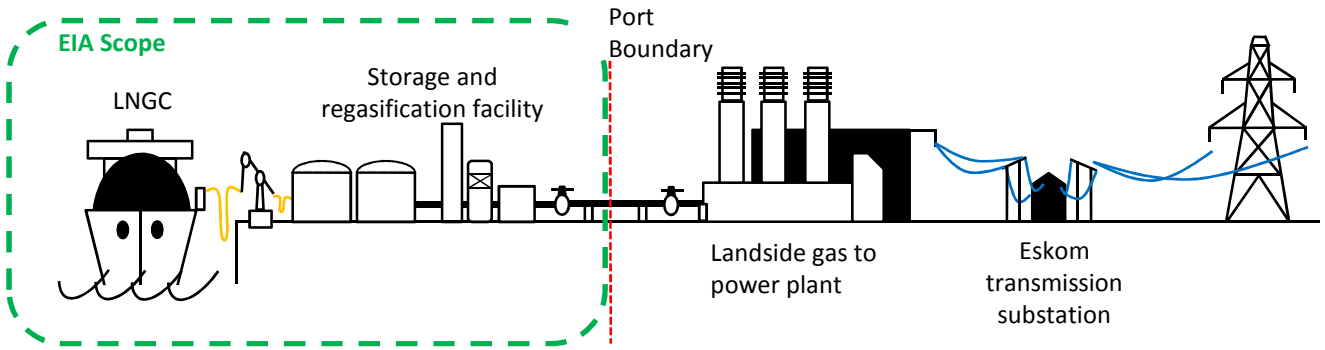
- Access, services and pipe jetty
- Cryogenic pipeline
- Storage and regasification terminal
- Gas distribution pipeline.



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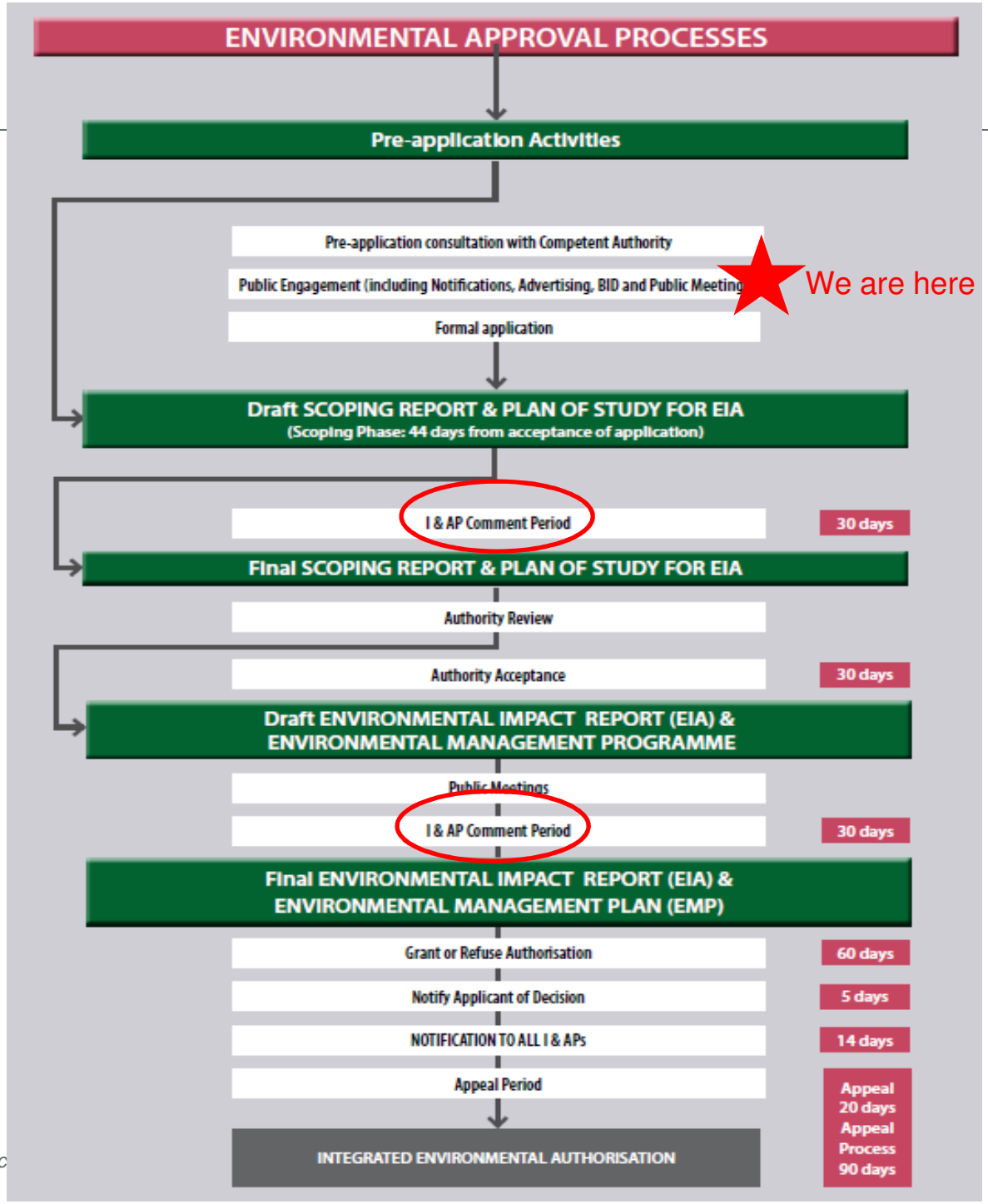
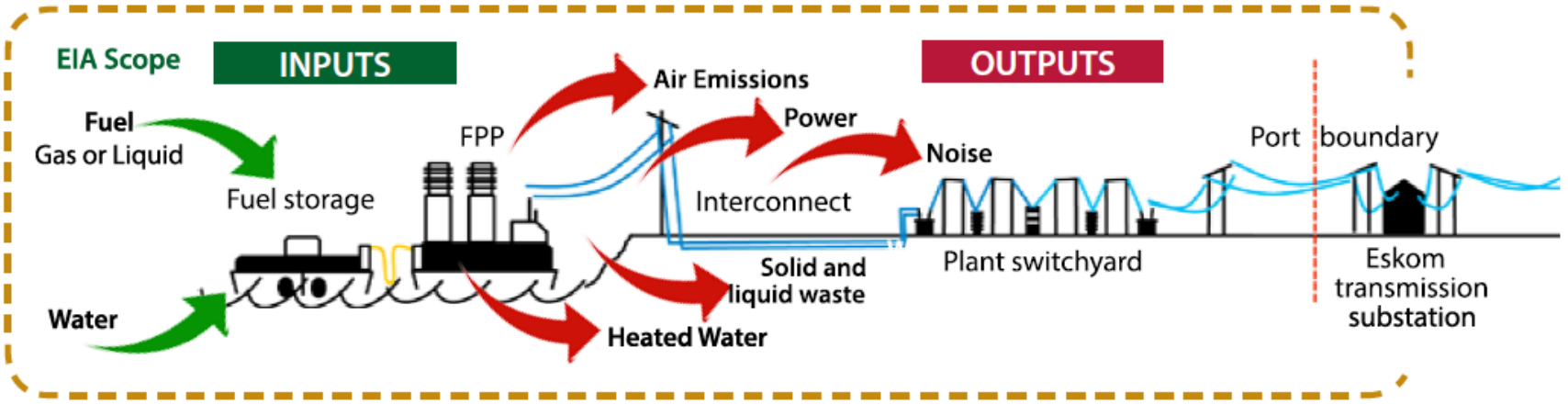
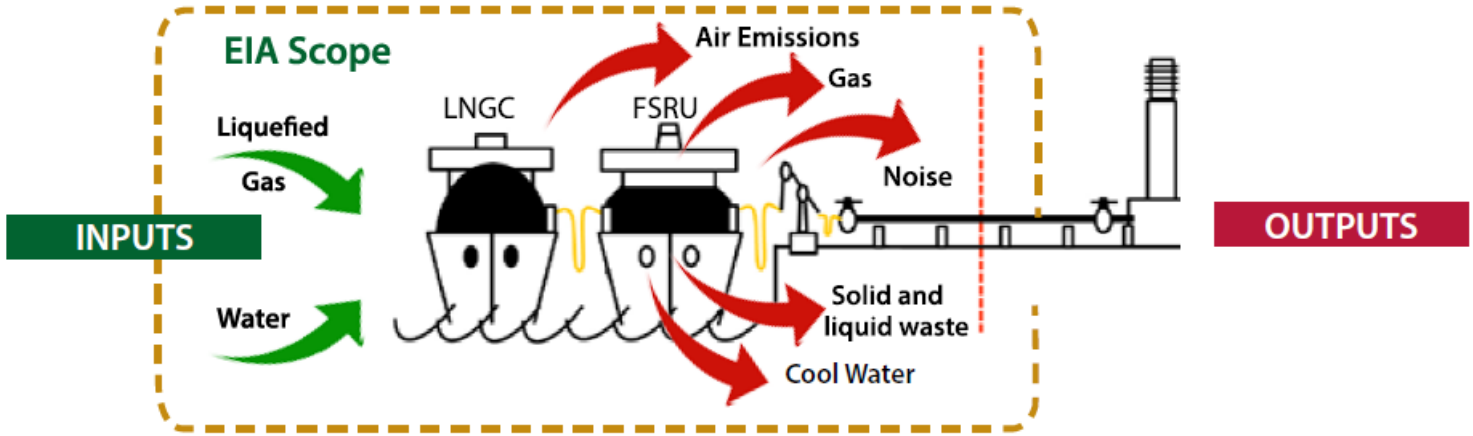

ENVIRONMENTAL APPROVAL PROCESSES
Pre-application Activities
Pre-application consultation with Competent Authority
Public Engagement (including Notifications, Advertising, BID and Public Meeting
Formal application
We are here
Draft SCOPING REPORT & PLAN OF STUDY FOR EIA
(Scoping Phase: 44 days from acceptance of application)
I & AP Comment Period
30 days
Final SCOPING REPORT & PLAN OF STUDY FOR EIA
Authority Review
Authority Acceptance
30 days
Draft ENVIRONMENTAL IMPACT REPORT (EIA) & ENVIRONMENTAL MANAGEMENT PROGRAMME
Public Meetings
I & AP Comment Period
30 days
Final ENVIRONMENTAL IMPACT REPORT (EIA) & ENVIRONMENTAL MANAGEMENT PLAN (EMP)
Grant or Refuse Authorisation
60 days
Notify Applicant of Decision
5 days
NOTIFICATION TO ALL I & APs
14 days
Appeal Period
Appeal 20 days Appeal Process 90 days
INTEGRATED ENVIRONMENTAL AUTHORISATION

Issues to be addressed in the EIA

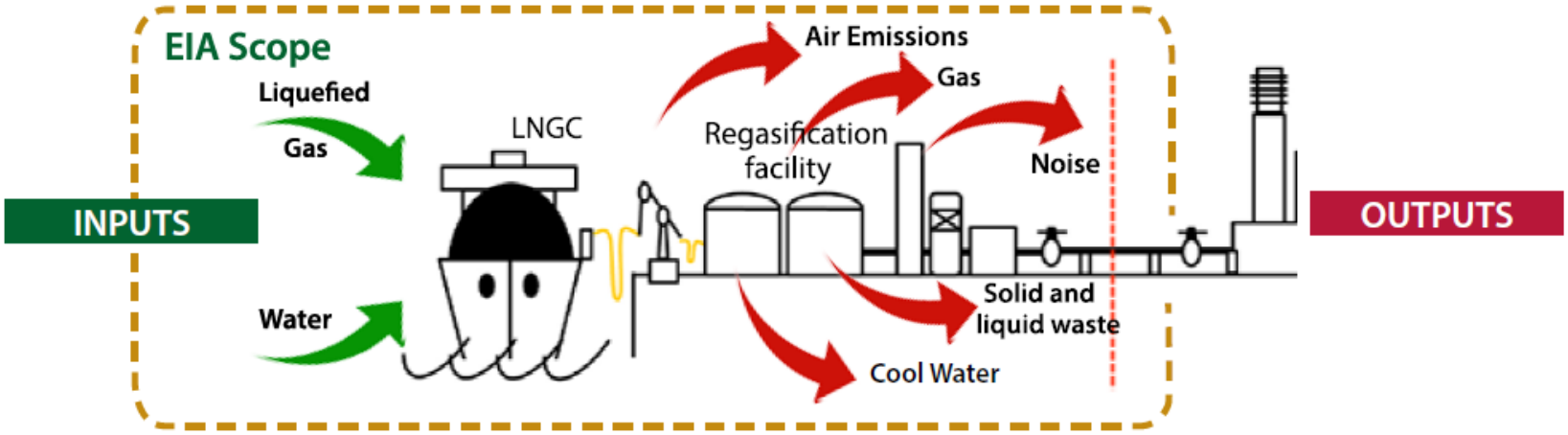


Project Inputs and Outputs for the FPP

Issues to be addressed in the EIA



Project inputs and outputs for the LNG Facilities using a Floating Storage and Regasification Unit



Project inputs and outputs for the LNG Facilities using land-based regasification

Next steps

- FPP
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  - Specialists will commence their studies in 2015
  - Final Scoping Report will be submitted to the DEA in early 2016

- Land-based Power Plant
  - Initiate scoping exercise
  - Draft Scoping Report to be released November 2015

- LNG
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Further comment

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Meeting Notes

Environmental Resources Management

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Durban
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http://www.erm.com

	DoE Floating Power Plant, DoE On-land Early Power Project & LNG Import Facility: Richards Bay
Subject/Ref	Richards Bay IDZ Environmental Review Committee meeting notes
Venue	RBIDZ Office , Richards Bay
Date of Meeting	10/11/2015
Attendance	Debbie Donkin, ERM ERC
Date	10/11/2015

Issues Raised

1. Air pollution and the cumulative impact of all three studies
2. Dredging not supported
3. LNG Import Facility: proposed locations would lead to total transformation of the area.
4. Are biodiversity offsets being considered? These are not supported as there are no successful case studies.
5. Asked if Transnet have been a part of the site selection process.

Meeting Notes

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	DoE Floating Power Plant & LNG Import Facility: Richards Bay
Subject/Ref	TNPA Meeting Notes
Venue	TNPA Offices, Richards Bay
Date of Meeting	10/15/2015, 14:00
Attendance	ERM: Debbie Donkin TNPA: Preston Khomo, Basil Ngcobo, Vumani Ndlovu, Cobie Snyman and Sabelo Mdlalose
Date	15/10/2015

Issues raised

1. Asked if there will be wayleaves between the port and substation and who is dealing with those landowners
2. Vumani:
    a. Are we doing a WULA?
    b. What are the emissions? Air emissions could be a fatal flaw for the FPP in RB given the limited "air space" available. Against HFO use.
    c. What specialist studies are we doing? Have we included geohydrology?
    d. FSRU – no specialist studies done so far.
    e. Have alternatives been considered?
    f. Safety concerns.
3. Basil:
    a. Supportive.
4. Cobie:
    a. Aquaculture project planned for exact location of FPP. However, only running to November 2016.
    b. Said we must flag the contractual agreements that will need to be entered into now so that the legal dept can start preparing documentation now (could be common across all three ports) so that when the time comes to roll out the project there is not suddenly a delay while these things are sorted out.
    c. Is Eskom ready for this?
5. Sabelo:
    a. The FPP will require a safety buffer.

Meeting Notes

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	DoE Floating Power Plant & LNG Import Facility: Richards Bay
Subject/Ref	uMhlathuze Municipality – Environmental Management Dept Meeting Notes
Venue	ICC, Durban
Date of Meeting	10/16/2016
Attendance	Debbie Donkin, ERM Sharin Govender, uMhlathuze Municipality
Date	16/10/2015

Issues raised

1. Concerned about loss of environmentally sensitive habitats.
2. Air pollution.
3. Asked about the location of the FPP and what alternatives had been considered.

Meeting Notes

Environmental Resources Management

17 The Boulevard, Suite S005
Westway Office Park,
Westville
Kwazulu Natal, 3629
Durban
T: +27 31 265 0033
F: +27 31 265 0150
http://www.erm.com

	DoE Floating Power Plant & LNG Import Facility: Richards Bay
Subject/Ref	Ezemvelo KZN Wildlife Meeting Notes
Venue	Teleconference
Date of Meeting	16/10/2016
Attendance	Debbie Donkin, ERM Dominic Wieners, Ezemvelo KZN Wildlife
Date	16/10/2015

Issues raised

1. Concerned about loss of environmentally sensitive habitats (South Dunes Corridor of concern).
2. Air pollution.
3. Cumulative impacts of all the developments proposed in the port.

B4.1 COMMENTS RECEIVED

Tougheeda Aspeling

From: Russell Stow <russells@gcs-sa.biz>
Sent: 21 October 2015 09:10 AM
To: ERM South Africa EIA Mailbox
Cc: ERM South Africa EIA Mailbox
Subject: gastowpower

Dear Tougheeda

I have received notification of the EIAs for the gas to power projects in Richards Bay and Saldanha.

Please add me to your I&AP list and send me your available information. The links on your webpage do not work.

Regards
Russell Stow

Tougheeda Aspeling

From: Sandy Camminga <camminga@iafrica.com>
Sent: 21 October 2015 09:42 AM
To: ERM South Africa EIA Mailbox
Cc: Debbie Donkin; Stephanie Gopaul
Subject: IAP REGISTRATION - Floating Power Plant
Attachments: EIA Notice - Floating Power Plant DoE.pdf

Dear Stephanie

The attached EIA Notice which appeared in the Zululand Observer 19 October, has reference.

Kindly register the **Richards Bay Clean Air Association** (RBCAA) as an Interested & Affected Part.

Please may we receive the Background Information Document.

Thank you.

Kind regards,

Sandy Camminga | Director | **Richards Bay Clean Air Association** [NGO]
P O Box 10299, Meerensee, 3901, Office A6-A7, Smart Plan Building, 95 Dollar Drive, Richards Bay
T: +27 (35) 786 0076 | **C:** +27 (83) 515 2384 | **E:** camminga@iafrica.com | www.rbcaa.co.za

"IMPROVING THE ENVIRONMENT FOR ALL"

From: Debbie Donkin [mailto:Debbie.Donkin@erm.com]
Sent: 13 October 2015 12:08 PM
To: Sandy Camminga
Subject: RE: RBCAA \ ERM Information Session

HI Sandy,

I will be coming up again and will send you the BID once it has been signed off by the client.

Our open house has been scheduled for 3 or 4 November to enable us to meet our programme. However, we could have a more formal meeting with you prior to the open house to present what we will be presenting on the day?

Kind regards,
Debbie

From: Sandy Camminga [mailto:camminga@iafrica.com]
Sent: Tuesday, October 13, 2015 11:59 AM
To: Debbie Donkin
Subject: RE: RBCAA \ ERM Information Session

Hi Debbie

Thank you for the update.

Unfortunately I am out of town from tomorrow for the remainder of the week.

Are you coming up again before the open day, or we could have a telephonic discussion?

In deciding on a date for your open day, please would you consider that I will not be available 3, 4 & 5 November.

Thank you.

Kind regards,

Sandy Camminga | Director | **Richards Bay Clean Air Association** [NGO]
P O Box 10299, Meerensee, 3901, Office A6-A7, Smart Plan Building, 95 Dollar Drive, Richards Bay
T: +27 (35) 786 0076 | **C:** +27 (83) 515 2384 | **E:** camminga@iafrica.com | www.rbcaa.co.za

"IMPROVING THE ENVIRONMENT FOR ALL"

From: Debbie Donkin [mailto:Debbie.Donkin@erm.com]
Sent: 13 October 2015 11:37 AM
To: Sandy Camminga
Subject: RE: RBCAA \ ERM Information Session

Hi Sandy,

Thank you for meeting with Stephanie and I a few weeks ago. We're finally on the verge of going public with two EIAs for the Department of Energy and Transnet. We will be holding an open day in early November, but I would like to meet with you prior to the event to provide you with the strategic overview and get your thoughts on our proposed approach to the public participation.

I will be in Richards Bay tomorrow and Thursday so if you have a gap it would be great to meet up for another discussion.

I will also be contacting Frans van der Walt so not sure if we should try for a combined meeting?

Kind regards,
Debbie

-----Original Appointment-----
From: Sandy Camminga [mailto:camminga@iafrica.com]
Sent: Monday, September 21, 2015 10:20 AM
To: Debbie Donkin; franz.schmidt@tskzn.co.za; Michelle Boshoff; Chetty, Yogen (BHA)
Cc: Stephanie Gopaul
Subject: RBCAA \ ERM Information Session
When: 23 September 2015 12:00 PM-01:30 PM (UTC+02:00) Harare, Pretoria.
Where: RBCAA Boardroom, Smart Plan Building, 95 Dollar Drive, Richards Bay

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Please visit ERM's web site: http://www.erm.com

Tougheeda Aspeling

From: Darryl Hunt <darryl.hunt@dynamicenergy.co.za>
Sent: 22 October 2015 10:00 AM
To: Tougheeda Aspeling
Subject: Registration as IAAP: Saldanha Bay & Richards Bay Gas-to-Power

Importance: High

Hi Tougheeda

Please register me as an IAAP for the following:

RICHARDS BAY
- FPP
- LNG IMPORT

SALDANHA BAY
- FPP
- LNG IMPORT

Thanks
Darryl Hunt

o : +27 (0) 21 553 0440
c : +27 (0) 82 804 3907
e : darryl.hunt@dynamicenergy.co.za
: darryl.hunt1
www.dynamicenergy.co.za

Dynamic Energy Consultants cc
4 Star Fish Way
Atlantic Beach Golf Estate
Melkbosstrand
7441 SOUTH AFRICA

Tougheeda Aspeling

From: Debbie Donkin
Sent: 21 October 2015 02:31 PM
To: Danie van Wyk
Cc: Tougheeda Aspeling
Subject: RE: DoE and Transnet: Gas to power projects in the Port of Richards Bay

Hi Danie,

Thank you for registering as an IAP. My colleague will send you the background information document and information on our upcoming open house event planned for 3 November.

Kind regards,
Debbie

Debbie Donkin
Principal Consultant

ERM Southern Africa (Pty) Ltd
Suite S005 | 17 The Boulevard | Westway Office Park | Westville | 3635 | Durban | South Africa
T +27 31 265 0033 | **F** +27 31 265 0150 | **M** +27 83 556 4087
E debbie.donkin@erm.com | **W** www.erm.com

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From: Danie van Wyk [mailto:Daniev@motla.co.za]
Sent: Wednesday, October 21, 2015 2:29 PM
To: Debbie Donkin
Subject: DoE and Transnet: Gas to power projects in the Port of Richards Bay

Hi Debbie

I received your information from Frans van der Walt and would like to register as an interested party for the above proposed project.

Please confirm registration by return e-mail.

Kind regards
Danie van Wyk (B Eng; Hons B Com) Pr Eng
Director
Motla Consulting Engineers (Pty) Ltd

daniev@motla.co.za
t +27 35 789 8510
f +27 86 622 5729
m +27 79 260 4921
www.motla.co.za

Tougheeda Aspeling

From: Frans Van Der Walt <frans@qs2000plus.co.za>
Sent: 21 October 2015 05:31 PM
To: Tougheeda Aspeling
Cc: Lindsey Bungartz; Debbie Donkin; Nadia Mol
Subject: RE: Independent Power Producer Programme: EIA for a Floating Power Plant and EIA for LNG Import Facilities, Port of Richards Bay
Attachments: 20151016 - Zululand Observer - EIA's.pdf

Hallo Tougheeda,

Thank you for the information and Invitation to the Open House and as Interested and Affected Party.

You may not be aware of very recent happenings in the region, with exiting announcements ?
1. http://zululandobserver.co.za/86983/global-investors-bank-on-local-oil-hub/
2. Refer the advert which was published last week (Richards Bay had and extremely busy week !!!)
3. I assume you are aware of the **Vopak-Reatile** plans at South Dunes, next to RBCT ?

Refer the document hereunder which also reflect most known developments on the cards.
https://drive.google.com/file/d/0B05Dyk4DM783dWxiblNoX0VNaFE/view?usp=sharing

The document is on my website and is updated as and when I become aware of a Development. I must confess that the last few weeks I have been extremely busy and have not updated it, but the next "release" is imminent. It therefor always recommend that people preferably not print it, because it is only accurate to the date on the cover. (but, I did "cheat" by updating Phangela's value to the current.)

Regards,

Frans van der Walt (B.Sc (QS), Pr.QS (2167), PMAQS, MRICS)
QS2000 Plus (Quantity Surveyors & Project Managers)

Contact numbers : Tel : +27 (35) 753 4184 / 5, Fax : +27 (35) 753 4185, Cell : +27 82 4600 875
E-mail : frans@qs2000plus.co.za
Postal : P.O. Box 10376, MEERENSEE, 3901
Physical : 22 Pompano Place, MEERENSEE, 3901
Web-site : www.qs2000plus.co.za
Skype : fransvanderwalt

From: Tougheeda Aspeling [mailto:Tougheeda.Aspeling@erm.com]
Sent: 21 October 2015 16:40 PM
To: Tougheeda Aspeling <Tougheeda.Aspeling@erm.com>
Cc: Lindsey Bungartz <Lindsey.Bungartz@erm.com>; Debbie Donkin <Debbie.Donkin@erm.com>; Nadia Mol <Nadia.Mol@erm.com>
Subject: Independent Power Producer Programme: EIA for a Floating Power Plant and EIA for LNG Import Facilities, Port of Richards Bay

Dear Stakeholder

The Department of Energy (DoE) plans to procure power from a Floating Power Plant to be located within the Port of Richards Bay to help meet South Africa's electricity requirements. Transnet SOC Ltd (Transnet) will need to grant the rights in the Port for this project and, in collaboration with the DoE, also plans to enable the development of Liquefied Natural Gas (LNG) import facilities within the Port of Richards Bay to support the DoE's gas-to- power programme.

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When: 3 November 2015
Where: Premier Hotel The Richards, 3 Hibbert Drive, Meerensee, Richards Bay
Time: The Project Team will be available at the venue from 14:30 to 19:00 and a presentation will be given at 17:00.

To RSVP or register as an I&AP contact Stephanie Gopaul of ERM:
Tel: 031 265 0033
Fax: 031 265 0150
Email: G2Prichardsbay.eia@erm.com
Postal address: Postnet Suite 59, Private Bag X21,Westville, 3630
Visit the Project website: www.erm.com/gastopower

Yours sincerely

Tougheeda Aspeling

ERM Southern Africa (Pty) Ltd
2nd Floor | Great Westerford | 240 Main Road | Rondebosch | 7700 | Cape Town | South Africa
T +27 21 681 5400 | **F** 086 5404 072 | **M** +27 84 2066187
E Tougheeda.Aspeling@erm.com| **W** www.erm.com

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Tougheeda Aspeling

From: Frans Van Der Walt <frans@qs2000plus.co.za>
Sent: 21 October 2015 05:57 PM
To: Tougheeda Aspeling
Cc: Lindsey Bungartz; Debbie Donkin; Nadia Mol
Subject: RE: Independent Power Producer Programme: EIA for a Floating Power Plant and EIA for LNG Import Facilities, Port of Richards Bay

PS : I must add that I am not a fan of "Open House" events, simply because then Stakeholders do not hear the same (different people convey different details differently), nor get to hear other questions and comments, etc. (Eg. in the Vopak-Reatile first EIA session they planned and Open House, and then at request of those there, turned it into a Presentation with Question and Answers session.)

I shall therefor try to be their early, to hopefully participate in a Presentation session.

Regards,

Frans van der Walt (B.Sc (QS), Pr.QS (2167), PMAQS, MRICS)
QS2000 Plus (Quantity Surveyors & Project Managers)

Contact numbers : Tel : +27 (35) 753 4184 / 5, Fax : +27 (35) 753 4185, Cell : +27 82 4600 875
E-mail : frans@qs2000plus.co.za
Postal : P.O. Box 10376, MEERENSEE, 3901
Physical : 22 Pompano Place, MEERENSEE, 3901
Web-site : www.qs2000plus.co.za
Skype : fransvanderwalt

From: Tougheeda Aspeling [mailto:Tougheeda.Aspeling@erm.com]
Sent: 21 October 2015 16:40 PM
To: Tougheeda Aspeling <Tougheeda.Aspeling@erm.com>
Cc: Lindsey Bungartz <Lindsey.Bungartz@erm.com>; Debbie Donkin <Debbie.Donkin@erm.com>; Nadia Mol <Nadia.Mol@erm.com>
Subject: Independent Power Producer Programme: EIA for a Floating Power Plant and EIA for LNG Import Facilities, Port of Richards Bay

Dear Stakeholder

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Tel: 031 265 0033
Fax: 031 265 0150
Email: G2Prichardsbay.eia@erm.com
Postal address: Postnet Suite 59, Private Bag X21,Westville, 3630
Visit the Project website: www.erm.com/gastopower

Yours sincerely

Tougheeda Aspeling

ERM Southern Africa (Pty) Ltd
2nd Floor | Great Westerford | 240 Main Road | Rondebosch | 7700 | Cape Town | South Africa
T +27 21 681 5400 | **F** 086 5404 072 | **M** +27 84 2066187
E Tougheeda.Aspeling@erm.com| **W** www.erm.com

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Tougheeda Aspeling

From: Carolyn <afromatz@telkomsa.net>
Sent: 22 October 2015 08:13 AM
To: Tougheeda Aspeling
Cc: Lindsey Bungartz; Debbie Donkin; Nadia Mol
Subject: RE: Independent Power Producer Programme: EIA for a Floating Power Plant and EIA for LNG Import Facilities, Port of Richards Bay

Thanks, Tougheeda

I have requested that Coastwatch KZN is registered in this process but have not received confirmation thereof. It was just yesterday but I don't want to lose sight of it. Perhaps you could check for me - ?

Regards
Carolyn

Carolyn Schwegman
Coastwatch KZN *135-408 NPO*
afromatz@telkomsa.net
P O Box 343 Pennington 4184
Tel: +27 (0) 39 9752147
Cell: +27 (0) 83 981 4814
Fax2email: +27 (0) 86 725 1884:

From: Tougheeda Aspeling [mailto:Tougheeda.Aspeling@erm.com]
Sent: 21 October 2015 04:40 PM
To: Tougheeda Aspeling
Cc: Lindsey Bungartz; Debbie Donkin; Nadia Mol
Subject: Independent Power Producer Programme: EIA for a Floating Power Plant and EIA for LNG Import Facilities, Port of Richards Bay

Dear Stakeholder

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Tel: 031 265 0033
Fax: 031 265 0150
Email: G2Prichardsbay.eia@erm.com

Postal address: Postnet Suite 59, Private Bag X21,Westville, 3630
Visit the Project website: www.erm.com/gastopower

Yours sincerely

Tougheeda Aspeling

ERM Southern Africa (Pty) Ltd
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E Tougheeda.Aspeling@erm.com| **W** www.erm.com

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EIA for a Floating Power Plant and LNG Import Facility, Port of Richards Bay

Registration and Comment Sheet

October 2015

Send your queries, comments or suggestions on the proposed project to us. You can email, fax, post or hand them to us.

Stephanie Gopaul
Tel: 031 265 0033; Fax: 031265 0150
Postnet Suite 59, Private Bag X21,Westville, 3630
Email: G2Prichardsbay.eia@erm.com
Project website: www.erm.com/gastopower

Comments

Canopus Energy (Pty) Ltd hereby kindly requests to be registered as an Interested and Affected Party
We are planning related projects in the Richards Bay area and are interested in the progress and development
of the Floating Power Plant and LNG Import Facility in the Port of Richards Bay.
Canopus Energy (Pty) Ltd reserves its rights for submission of further inputs or comments in this EIA process.

Please fill-in your contact details below for the stakeholder database.

Title and Name:	MRS. IZEL VAN ROOY		
Organisation:	CANOPUS ENERGY (PTY) LTD		
Telephone:	0824497626	Position:	TOWN PLANNER
Cellphone:	0824497626	Email:	canopusenergy@gmail.com planwize@telkomsa.net
Postal Address:	4th Floor, Aloe Grove, Houghton Estate Office Park 2 Osborn Road, Houghton 2198		
	PO Box 225, Highlands North 2037		

energy
Department:
Energy
REPUBLIC OF SOUTH AFRICA

TRANSNET

ERM

EIA for a Floating Power Plant and LNG Import Facility, Port of Richards Bay

Registration and Comment Sheet

October 2015

Send your queries, comments or suggestions on the proposed project to us. You can email, fax, post or hand them to us.

Stephanie Gopaul
Tel: 031 265 0033; Fax: 031265 0150
Postnet Suite 59, Private Bag X21,Westville, 3630
Email: G2Prichardsbay.eia@erm.com
Project website: www.erm.com/gastopower

Comments

Canopus Energy (Pty) Ltd hereby kindly requests to be registered as an Interested and Affected Party
We are planning related projects in the Richards Bay area and are interested in the progress and development
of the Floating Power Plant and LNG Import Facility in the Port of Richards Bay.
Canopus Energy (Pty) Ltd reserves its rights for submission of further inputs or comments in this EIA process.

Please fill-in your contact details below for the stakeholder database.

Title and Name:	MR. DANIELE VENTURA		
Organisation:	CANOPUS ENERGY (PTY) LTD		
Telephone:	0719052480	Position:	PROJECT DESIGN ENGINEER
Cellphone:	0719052480	Email:	canopusenergy@gmail.com development@vidigenix.co.za
Postal Address:	4th Floor, Aloe Grove, Houghton Estate Office Park 2 Osborn Road, Houghton 2198		
	PO Box 225, Highlands North 2037		

energy
Department:
Energy
REPUBLIC OF SOUTH AFRICA

TRANSNET

ERM

EIA for a Floating Power Plant and LNG Import Facility, Port of Richards Bay

Registration and Comment Sheet

October 2015

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Stephanie Gopaul
Tel: 031 265 0033; Fax: 031265 0150
Postnet Suite 59, Private Bag X21,Westville, 3630
Email: G2Prichardsbay.eia@erm.com
Project website: www.erm.com/gastopower

Comments

Please fill-in your contact details below for the stakeholder database.

Title and Name:	MS SONIA MISZCZAK		
Organisation:	ATLANTIC RENEWABLE ENERGY PARTNERS (PTY) LTD		
Telephone:	021 418 2596	Position:	ANALYST
Cellphone:	083 244 5861	Email:	SONIA@ATLANTICEP.COM
Postal Address:	PO BOX 704 GREENPOINT 8001		

energy
Department:
Energy
REPUBLIC OF SOUTH AFRICA

TRANSNET

ERM

EIA for a Floating Power Plant and LNG Import Facility, Port of Richards Bay

Registration and Comment Sheet

October 2015

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Stephanie Gopaul
Tel: 031 265 0033; Fax: 031265 0150
Postnet Suite 59, Private Bag X21,Westville, 3630
Email: G2Prichardsbay.eia@erm.com
Project website: www.erm.com/gastopower

Comments

Please fill-in your contact details below for the stakeholder database.

Title and Name:	MR DAVID PENKE		
Organisation:	ATLANTIC ENERGY PARTNERS		
Telephone:	021 418 2596	**Position:**	DIRECTOR
Cellphone:	084 401 9015	**Email:**	david@atlanticep.com
Postal Address:	1ST FLOOR, WEST QUAY ~~EO~~ BUILDING, 7 WEST QUAY ROAD, WATERFRONT, CAPE TOWN, 8000		

energy
Department:
Energy
REPUBLIC OF SOUTH AFRICA

TRANSNET

ERM

Tougheeda Aspeling

From: Jacolette Adam <jacolette.adam@gmail.com>
Sent: 25 October 2015 09:22 PM
To: ERM South Africa EIA Mailbox
Subject: Registration for EIA for a Floating Power Plant and LNG Import Facility, Port of Richards Bay

Good day

Please register me as an I&AP for this project.

I am a resident of Richards Bay and have an interest in the proposed development of the facility within the harbour.

Regards

Jacolette Adam

082 852 6417

Tougheeda Aspeling

From: Nongcebo Madlala <MadlalaNL@umhlathuze.gov.za>
Sent: 23 October 2015 04:12 PM
To: ERM South Africa EIA Mailbox
Subject: Fwd: Re: Independent Power Producer Programme: EIA for a Floating Power Plant and EIA for LNG Import Facilities, Port of Richards Bay

Dear Stephanie

Kindly register Mr Nathi Mthethwa from uMhlathuze Local Municipality to attend the above programme.

Regards,
Nongcebo Madlala
Executive Secretary: Chief Operations Officer (COO)

MadlalaNL@umhlathuze.gov.za
Tel: 035-9075260
Cell: 071 343 6449

>>> Nathi Mthethwa 2015/10/22 05:46 PM >>>
Please RSVP & Diarise

>>> Tougheeda Aspeling <Tougheeda.Aspeling@erm.com> 2015/10/21 04:39 PM >>>
Dear Stakeholder

The Department of Energy (DoE) plans to procure power from a Floating Power Plant to be located within the Port of Richards Bay to help meet South Africa's electricity requirements. Transnet SOC Ltd (Transnet) will need to grant the rights in the Port for this project and, in collaboration with the DoE, also plans to enable the development of Liquefied Natural Gas (LNG) import facilities within the Port of Richards Bay to support the DoE's gas-to- power programme.

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Tel: 031 265 0033
Fax: 031 265 0150
Email: G2Prichardsbay.eia@erm.com
Postal address: Postnet Suite 59, Private Bag X21,Westville, 3630
Visit the Project website: www.erm.com/gastopower

Yours sincerely

Tougheeda Aspeling

ERM Southern Africa (Pty) Ltd
2nd Floor | Great Westerford | 240 Main Road | Rondebosch | 7700 | Cape Town | South Africa
T +27 21 681 5400 | **F** 086 5404 072 | **M** +27 84 2066187
E Tougheeda.Aspeling@erm.com| **W** www.erm.com

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Tougheeda Aspeling

From: Dominic José Goncalves <dominic.goncalves@abengoa.com>
Sent: 22 October 2015 04:50 PM
To: ERM South Africa EIA Mailbox
Cc: Pablo Lopez-Campos Gavini; Tauq-feeka Adonis
Subject: I&AP Registration Request - Richards Bay FPP and LNG Import Facility
Attachments: Richards Bay BID 21-10-15.pdf

Dear Ms Stephanie Goupal

I'm contacting you from Abengoa, an international IPP, South African trading name Abeinsa Business Development (Pty) Ltd). We kindly request to be registered as an I&AP for the EIA for the Floating Power Plant and LNG Import Facility at the Port of Richards Bay.

Abengoa aims to act as a full IPP for the upcoming Gas to Power Programme, offering a full Bundled Solution, including Gas Supply, FSRU and Power Plant (CCGT), together with our consortium partners.

As such, we would appreciate to be kept aware of all public notices and developments regarding the EIA process.

Thank you kindly and sincere regards

Dominic José Goncalves – Business Development Manager (Africa)

ABENGOA
ABEINSA
Abengoa E&C (Abeinsa) South Africa
3 Kiepersol Close, Kendon House
Plattekloof, Cape Town
Phone: (27) 21 937 0247 Cell: (27) 84 027 5505
dominic.goncalves@abengoa.com www.abengoa.com

Tougheeda Aspeling

From: Robert Løseth <robert.loseth@blystadenergy.com>
Sent: 22 October 2015 07:58 AM
To: ERM South Africa EIA Mailbox
Subject: Interested and affected party to Richards Bay EIA assessment

Please register my name / company as interested and affected party of EIA in Richards Bay EIA for floating power plant and EIA for LNG Import Facilities

Best Regards

Robert Løseth
Blystad Energy Management

www.blystadenergy.com
Skype: robert.loseth
Mob : +47 94360850

Tougheeda Aspeling

From: Vumani Ndlovu <Vumani.Ndlovu2@transnet.net>
Sent: 21 October 2015 01:45 PM
To: ERM South Africa EIA Mailbox
Subject: Request to Register as an IAP

Hi Stephanie

Kindly include my name as interested and affected party of the Richards Bay G2P Project. My contact details are given the email signature below.

Regards,

Vumani Ndlovu
Environmental Manager
Transnet National Ports Authority (TNPA)
First Floor, Environment Section Osizweni Building
Ventura Road
Richards Bay 3900

+27 35 905 3342
+27 81 031 3635
www.transnet.net

mailto:vumani.ndlovu2@transnet.net
P O Box 181 Richards Bay 3900

Tougheeda Aspeling

From: Hiadee von Well <hvonwell@ages-group.com>
Sent: 26 October 2015 11:42 AM
To: ERM South Africa EIA Mailbox
Cc: egrobler@ages-group.com
Subject: Registration for EIA: Floating Power plant & LNG, Richards Bay
Attachments: Transnet LNG PPP registration.pdf

Dear Stephanie Gopaul

Attached please find our registration for the above project. Kindly register us as an I&AP please.

Kind regards

Hiadee von Well
Environmental Consultant

AGES (PTY) LTD

Reg: 2002/001298/07 Vat: 4200204891

LIMPOPO OFFICE
120 Marshall Street
POLOKWANE 0699

Tel: +27 15 291 1577
Fax:+27 15 291 1577
Cell: +27 72 609 1996

www.ages-group.com

EIA for a Floating Power Plant and LNG Import Facility, Port of Richards Bay

Registration and Comment Sheet

October 2015

Send your queries, comments or suggestions on the proposed project to us. You can email, fax, post or hand them to us.

Stephanie Gopaul
Tel: 031 265 0033; Fax: 031265 0150
Postnet Suite 59, Private Bag X21,Westville, 3630
Email: G2Prichardsbay.eia@erm.com
Project website: www.erm.com/gastopower

Comments

We are currently conducting an EIA on a Thermal Power plant close by and wish synergy in the various processes.

Please fill-in your contact details below for the stakeholder database.

Title and Name:	MS ENGELA GROBLER		
Organisation:	AGES Limpopo (Pty) Ltd		
Telephone:	015 2911577	Position:	EAP
Cellphone:		Email:	egrobler@ages-group.com
Postal Address:	P O Box 2526 POLOKWANE 0700		

energy
Department:
Energy
REPUBLIC OF SOUTH AFRICA

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Tougheeda Aspeling

From: Naylor Gladys (ZA, Merebank) <Gladys.Naylor@mondigroup.co.za>
Sent: 21 October 2015 12:56 PM
To: ERM South Africa EIA Mailbox
Subject: Registration as I&AP

Good day Stephanie,

Please could you register the following people as I&APs for this EIA:

Gladys Naylor – gladys.naylor@mondigroup.co.za
Riaan Swart – riaan.swart@mondigroup.co.za
Mark Miller – mark.miller@mondigroup.co.za

regards

Gladys Naylor
Environmental Manager
South Africa Division

Mondi
Merebank Mill
Travancore Drive, Merebank, 4052
P.O. Box 31024, Merebank, 4059, South Africa
Tel: +27 (0)31 451 2170, Fax: +27 (0)31 451 2779
Cell: +27 (0)82 8011 950
E-mail: gladys.naylor@mondigroup.co.za
www.mondigroup.com

Mondi Limited 1967/013038/06

Tougheeda Aspeling

From: Carolyn <afromatz@telkomsa.net>
Sent: 21 October 2015 11:32 AM
To: ERM South Africa EIA Mailbox
Cc: 'Judy Bell'; 'Sandy Camminga'; W Forse
Subject: FW: LNG Facilities, Floating Power Plant

From: Carolyn [mailto:afromatz@telkomsa.net]
Sent: 21 October 2015 11:21 AM
To: 'GWRrichardsbay.eia@erm.com'
Cc: 'Judy Bell'; 'Sandy Camminga'; W Forse
Subject: LNG Facilities, Floating Power Plant

Dear Ms Gopaul

In response to the notification of the 2 EIAs to be undertaken within the Port of Richards Bay for –

1. A floating power plant
2. LNG Import Facilities

Please register Coastwatch KZN as an I&AP (using the contact details set out below) and we shall be grateful to receive any information which is presently available.

Coastwatch is an organisation of volunteers with experts in coastal and marine issues. We comment consistently on development applications where there is potential impact on the coastal and marine environment which gives rise at times to a significant amount of information which is simply onerous and impractical to download from websites. May I therefore request that information is sent to the undersigned.

Regards
Carolyn

Carolyn Schwegman
COASTWATCH KWAZULU-NATAL
Coastwatch KZN *135-408 NPO*
afromatz@telkomsa.net
P O Box 343 Pennington 4184
Tel: +27 (0) 39 9752147
Cell: +27 (0) 83 981 4814
Fax2email: +27 (0) 86 725 1884:

Tougheeda Aspeling

From: Wendy Forse <twiga@iafrica.com>
Sent: 21 October 2015 12:41 PM
To: 'Carolyn'; ERM South Africa EIA Mailbox
Cc: 'Judy Bell'; 'Sandy Camminga'; Barbara Chedzey; Jim Chedzey; Neil Davies Evans
Subject: RE: LNG Facilities, Floating Power Plant

Thanks Caro. Have just sent through a request that they register the Mtz Conservancy as an IAP as well, given that there appears to be a potential link to this proposed oil & LNG storage facility.

From: Carolyn [mailto:afromatz@telkomsa.net]
Sent: Wednesday, October 21, 2015 11:32 AM
To: G2Prichardsbay.eia@erm.com
Cc: 'Judy Bell'; 'Sandy Camminga'; W Forse
Subject: FW: LNG Facilities, Floating Power Plant

From: Carolyn [mailto:afromatz@telkomsa.net]
Sent: 21 October 2015 11:21 AM
To: 'GWRrichardsbay.eia@erm.com'
Cc: 'Judy Bell'; 'Sandy Camminga'; W Forse
Subject: LNG Facilities, Floating Power Plant

Dear Ms Gopaul

In response to the notification of the 2 EIAs to be undertaken within the Port of Richards Bay for –

1. A floating power plant
2. LNG Import Facilities

Please register Coastwatch KZN as an I&AP (using the contact details set out below) and we shall be grateful to receive any information which is presently available.

Coastwatch is an organisation of volunteers with experts in coastal and marine issues. We comment consistently on development applications where there is potential impact on the coastal and marine environment which gives rise at times to a significant amount of information which is simply onerous and impractical to download from websites. May I therefore request that information is sent to the undersigned.

Regards
Carolyn

Carolyn Schwegman
COASTWATCH KWAZULU-NATAL
Coastwatch KZN *135-408 NPO*
afromatz@telkomsa.net
P O Box 343 Pennington 4184
Tel: +27 (0) 39 9752147
Cell: +27 (0) 83 981 4814
Fax2email: +27 (0) 86 725 1884:

Tougheeda Aspeling

From: Wendy Forse <twiga@iafrica.com>
Sent: 21 October 2015 12:51 PM
To: ERM South Africa EIA Mailbox
Cc: Neil Davies Evans; Barbara Chedzey; mbutler@iafrica.com; Jim Chedzey; doggy.kewley@telkomsa.net; Barbara Kewley; Balmer, Anne; Bruce Hopwood; time4fun@telkomsa.net
Subject: FW: LNG import facilities and floating power plant EIA I&AP registration

Importance: High

Corrected email address. Please see request below.

From: Wendy Forse [mailto:twiga@iafrica.com]
Sent: Wednesday, October 21, 2015 12:39 PM
To: 'GWRrichardsbay.eia@erm.com'
Cc: Neil Davies Evans; Barbara Chedzey; mbutler@iafrica.com; Jim Chedzey; 'doggy.kewley@telkomsa.net'; Barbara Kewley; Balmer, Anne (abalmer@telkomsa.net); Bruce Hopwood; time4fun@telkomsa.net
Subject: LNG import facilities and floating power plant EIA I&AP registration
Importance: High

Dear Ms Gopaul

We understand that there are 2 EIAs to be undertaken within the Port of Richards Bay for –

1. A floating power plant
2. LNG Import Facilities

We also believe from a recent ZO article, that this may be linked to a pipeline which will be just offshore of Mtunzini to head towards a proposed oil and LNG storage facility on the coast south of Mtunzini in the Fairbreeze area, hence we have a direct interest in the two EIAs as per the newspaper notice, as well as the future EIA process concerning the proposed oil and LNG storage facility.

We would therefore appreciate it if you could register the Mtunzini Conservancy as an I&AP and we shall be grateful to receive any information which is presently available. If you have an I&AP form, please can you forward to me then I can get it filled in with the official Conservancy contact details.

Thank you.

Regards
Wendy

Wendy Forse
P.O. Box 611, Mtunzini, 3867
Tel/fax: 035 – 340 2586
Cell : 082 722 3333
Email: twiga@iafrica.com
Facebook: http://www.facebook.com/MtunziniConservancy

Tougheeda Aspeling

From: Wendy Forse <twiga@iafrica.com>
Sent: 21 October 2015 12:47 PM
To: ERM South Africa EIA Mailbox
Cc: jeremy.nottingham@gmail.com; camerons@telkomsa.net; Flook, George; Steve Hermann; Marlene Smit; Gael Muir; 'Venter, Paul S (BHA)'
Subject: Registration of Mtunzini Residents Association as an IAP for the EIA on the LNG import and power plant project in RB

Importance: High

Dear Ms Gopaul

We understand that there are 2 EIAs to be undertaken within the Port of Richards Bay for –

1. A floating power plant
2. LNG Import Facilities

We also believe from a recent ZO article, that this may be linked to a pipeline which will be just offshore of Mtunzini to head towards a proposed oil and LNG storage facility on the coast south of Mtunzini in the Fairbreeze area, hence we have a direct interest in the two EIAs as per the newspaper notice, as well as any future EIA process concerning the proposed oil and LNG storage facility.

We would therefore appreciate it if you could register the Mtunzini Residents' Association (MRA) as an I&AP and we shall be grateful to receive any information which is currently available.

Just in case you are confused, I serve on both the MRA and Mtunzini Conservancy committees in the planning and development portfolios. Hence the 2 separate requests for registration!

Thank you.

Regards
Wendy

Wendy Forse
P.O. Box 611, Mtunzini, 3867
Tel/fax: 035 – 340 2586
Cell : 082 722 3333
Email: twiga@iafrica.com

Tougheeda Aspeling

From: Nigel.Rossouw@shell.com
Sent: 29 October 2015 01:04 PM
To: ERM South Africa EIA Mailbox
Subject: Register as I&AP

Dear Tougheeda,

I would like to register as an I&AP for both the EIAs for the LNG Import Facility and the Floating Power Plant.

Regards

Nigel Rossouw
Environmental Planner

Shell South Africa (Upstream International Integrated Gas)
Telephone: +27 21 408 4091
Mobile: + 27 83 642 3040
Email: nigel.rossouw@shell.com
Internet: http://www.shell.com/za-en

Tougheeda Aspeling

From: Londeka Ngcobo <ngcobolo@uthungulu.co.za>
Sent: 29 October 2015 08:09 AM
To: ERM South Africa EIA Mailbox
Subject: RSVP

Dear Stephanie

This serves as an rsvp for the 3/11/2015 at the Premier (The Richards Hotel).
I am an Environmental Officer & I will be representing the Planning & Economic Development within uThungulu DM as an I&AP.

Regards,

Londeka Ngcobo
Control Environmental Officer
DEA: uThungulu District Municipality
uThungulu House,Krugerrand,Richards Bay.
Tel: 035 799 2684
Cell: 060873 1874

EIA for a Floating Power Plant and LNG Import Facility, Port of Richards Bay

Registration and Comment Sheet

October 2015

Send your queries, comments or suggestions on the proposed project to us. You can email, fax, post or hand them to us.

Stephanie Gopaul
Tel: 031 265 0033; Fax: 031265 0150
Postnet Suite 59, Private Bag X21,Westville, 3630
Email: G2Prichardsbay.eia@erm.com
Project website: www.erm.com/gastopower

Comments

As a permanent resident in Meerensee, Richards Bay, I oppose the granting of permission to have a power plant as close as 2 km from residential dwellings.
The prevailing winds are from/to the South East that will result in noise, gas and air pollution being blown directly in the direction of the Meerensee residential area.
A power plant in the proposed location will exacerbate the air quality problem in Richards Bay.

Please fill-in your contact details below for the stakeholder database.

Title and Name:	Mr ANDRE SMUTS		
Organisation:	PRIVATE RESIDENT		
Telephone:		Position:	
Cellphone:	0813476678	Email:	smutsa3@telkomsa.net
Postal Address:	PO Box 102326, MEERENSEE, 3901		

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Tougheeda Aspeling

From: Glossop, Wayne <wayne.glossop@wartsila.com>
Sent: 04 November 2015 10:41 AM
To: ERM South Africa EIA Mailbox; ERM South Africa EIA Mailbox
Subject: Request to be I&AP

Good day,
I would like to express my interest in being registered as an I&AP for the FPP and LNG projects in both Saldanha and Richards Bay respectively.
Please see all my contact details below.

Kindest regards,

Wayne Glossop

Business Development Manager
Energy Solutions
Wärtsilä South Africa (Pty) Ltd.
Block A, Wedgefield Office Park, 17 Muswell Rd, Bryanston
Tel. +27 (0) 11 317 3640
Mob. +27 (0) 82 040 4778
E-mail: wayne.glossop@wartsila.com

www.wartsila.com

agriculture,
forestry & fisheries

Department:
Agriculture, Forestry and Fisheries
REPUBLIC OF SOUTH AFRICA

F 0333458783
T 0333927721
JeffreyMAI@daff.gov.za

DAFF
Forestry Regulation & Support
P/Bag x9029
Pietermaritzburg
3200.

Mr. Jeffrey Maivha
06 November 2015

ENVIRONMENTAL RESOURCES MANAGEMENT SA (PTY) LTD
Postnet Suite 59
Private Bag x21
Westville
3630

Attention: Stephanie Gopaul

PROPOSED FLOATING POWER PLANT AND LNG IMPORT FACILITIES, PORT OF RICHARDS BAY.

The Department of Agriculture, Forestry and Fisheries (DAFF) appreciates the opportunity given to review and comment on the Background Information Document (BID) for the above mentioned project. DAFF via the Sub-Directorate Forestry Regulations and Support is mandated to regulate activities affecting natural forests and tree species protected in terms of the National Forests Act, 1998 (Act No. 84 of 1998) in South Africa.

At this stage DAFF cannot provide informed comments on the proposed activities hence currently it is not known whether the proposed development will affect any natural forests and/or tree species protected in terms of the above said Act. Therefore, more information is still required regarding the potential impacts of the projects on terrestrial vegetation (i.e. natural forests and protected trees). This Department is looking forward to receipt and review of upcoming documentation regarding the proposed activities.

This letter does not exempt you from considering other environmental legislations. Should any further information be required, please do not hesitate to contact this office.

Yours faithfully
Mr. Jeffrey Maivha

.....
Forestry Regulations & Support - KZN

Tougheeda Aspeling

From: Mtshali, Sandile <s.mtshali@smit.com>
Sent: 10 November 2015 10:18 AM
To: Tougheeda Aspeling
Subject: I&AP Registration

Dear Tougheeda

Thank you for taking my call a few minutes ago. As mentioned, we would like to register as an Interested and Affected Party for the Floating Power Plant & LNG Import project in order to keep track of where things are as we look to opportunities for ourselves and our partners moving into the future.

Any and all registration material would be appreciated and I look forward to your kindest response.

Kind regards

Sandile Mtshali | Business Development & B-BBEE Officer | SMIT Amandla Marine (Pty) Ltd
Switchboard: (+27) 21 507 5777 | Direct Line: (+27) 21 507 5874 | Fax: (+27) 21 507 5885
Mobile: (+27)827389704 | Email: s.mtshali@smit.com
Website: www.smitamandlamarine.co.za | Facebook: www.facebook.com/smitamandlamarine

We're a Level Three Contributor to Broad-Based Black Economic Empowerment