



energy

Department:
Energy
REPUBLIC OF SOUTH AFRICA



Background Information Document



Independent Power Producers Programme: EIA for a Floating Power Plant and EIA for LNG Import Facilities, Port of Ngqura

Purpose of this Background Information Document and EOH CES' Role

The Department of Energy (DoE) plans to procure power from a Floating Power Plant to be located within the Port of Ngqura 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 Ngqura to support the DoE's gas-to-power programme. The DoE and Transnet are considering similar projects in the Ports of Richards Bay and Saldanha.

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 EIA processes. It provides 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 process, 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 the DEA, the body that will take the environmental decision on the proposed developments.

EOH CES' Role in the FPP and LNG Facilities

DoE has appointed EOH Coastal and Environmental Services (EOH CES) as the independent Environmental Assessment Practitioner for the EIAs for both the Floating Power Plant and the LNG Import facilities in the Port of Ngqura. 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 EOH CES' role is to facilitate the active involvement of interested and affected parties in the process. All of this activity must be conducted to the highest standards of independence and professionalism.

Get involved. Register as an interested and affected party.

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

Mrs Kim Brent

Tel: 041 585 1715 • Fax: 046 622 2364 • Email: k.brent@cesnet.co.za

Postal Address: 13 Stanley Street, Richmond Hill, Port Elizabeth, 6001

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 MWs 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 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 Producers (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 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 terrestrial switchyard for the conversion of the power to a higher voltage (marine and terrestrial);
- Transmission line to Dedisa 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 600 MW capacity available at the Dedisa 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 Ngqura along the eastern breakwater (see Figure 8). Power would be evacuated via a switchyard and a 132 kV transmission line (approximately 7 km) to the Dedisa substation, which is managed by Eskom.

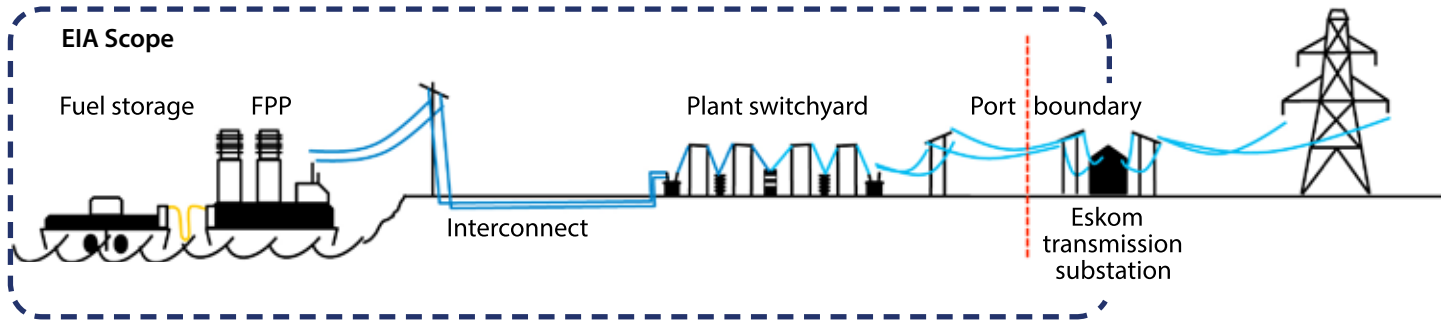


Figure 1: An illustration of the proposed Floating Power Plant and the associated infrastructure required to supply power into the national grid

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

This 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.

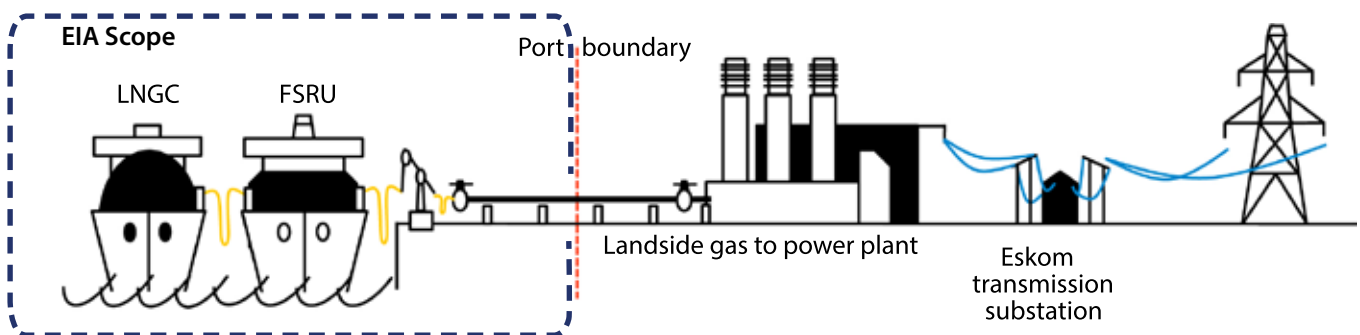


Figure 2: An illustration of the floating regasification technology and how this would link to a landside gas to power plant

Land-based Regasification

This 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.

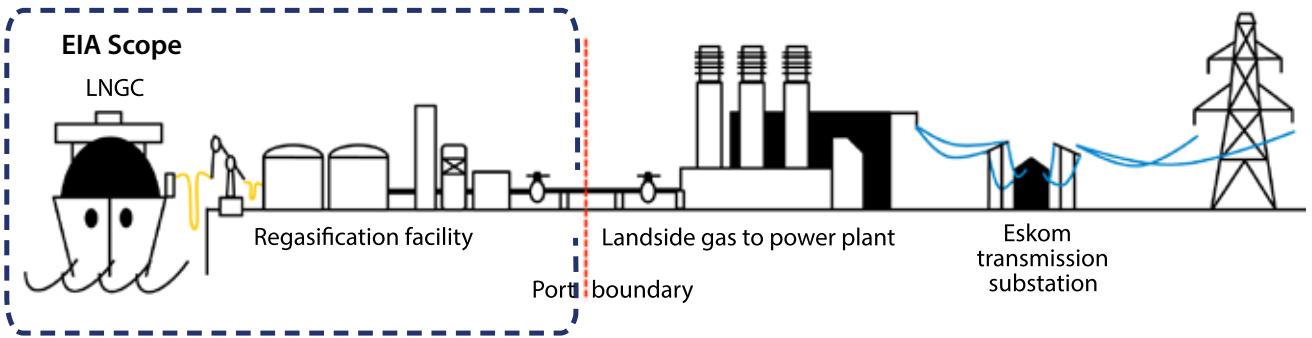


Figure 3 : An illustration of the land-based regasification technology and how this would link to a landside gas to power plant

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 Ngqura.

Project Inputs, Outputs 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.

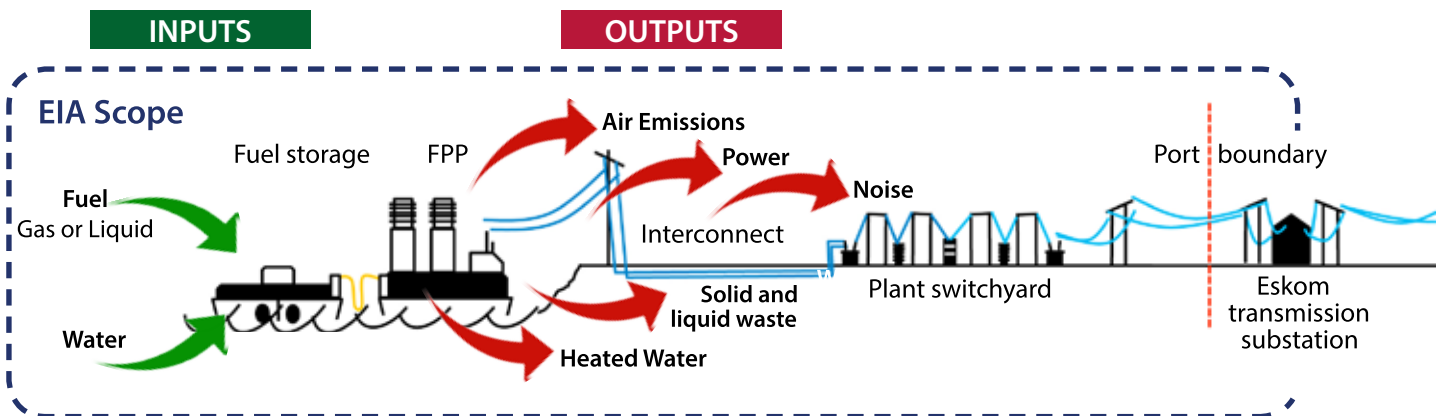


Figure 4: Project Inputs and Outputs for the FPP



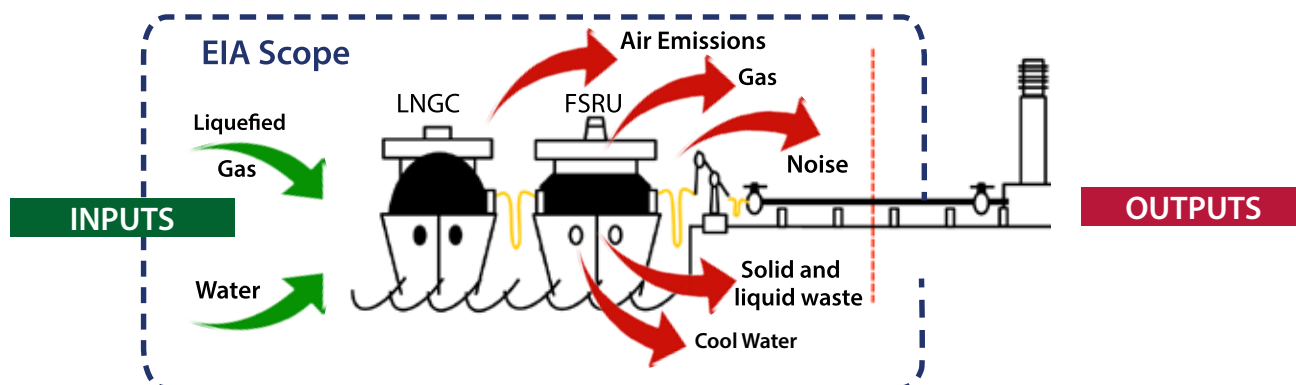


Figure 5: Project inputs and outputs for the LNG Facilities using a Floating Storage and Regasification Unit

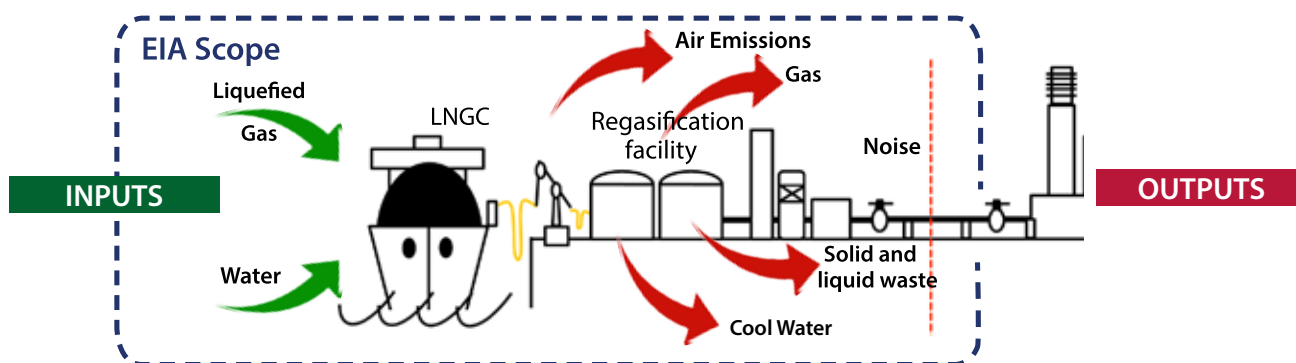


Figure 6: Project inputs and outputs for the LNG Facilities using land-based regasification

The EIA Processes

The two (2) Environmental Impact Assessments (EIAs) 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 an environmental authorisation decision. 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 (EMPrs), which will detail proposed management measures to minimise negative impacts and enhance positive impacts. **The draft EIAs will be made available for a (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.

PRE-ASSESSMENT PPP PHASE

Identification of key stakeholders and I&APs
Distribution of PPP documents (BID, Notification letters, emails etc)



SCOPING PHASE (44 DAYS)

ACTIVITY	TIMEFRAME
Submission of Application	Authority Acknowledgement = 10 days
Public & Authority review of the Draft Scoping Report	30 days
Submission of Final Scoping report	44 Days from receipt of Acknowledgement of Application
Consideration by Authorities	43 days from receipt of Scoping report



SPECIALIST PHASE



EIA PHASE (106 DAYS)

ACTIVITY	TIMEFRAME
Public Participation on DEIR	30 days
Submission of FEIR to Authorities	106 days from Acceptance of Scoping Report
Notice of extension	Must be lodged within 106 days from Acceptance of Scoping Report. Extension period allows for a further 50 days to submit the EIR, i.e. within 156 days
Environmental Authorisation	107 Days from receipt of FEIAR
EA notification	Authority to notify Applicant within 5 Days 14 Days to notify I&APs

Figure 7: Scoping and EIA Process

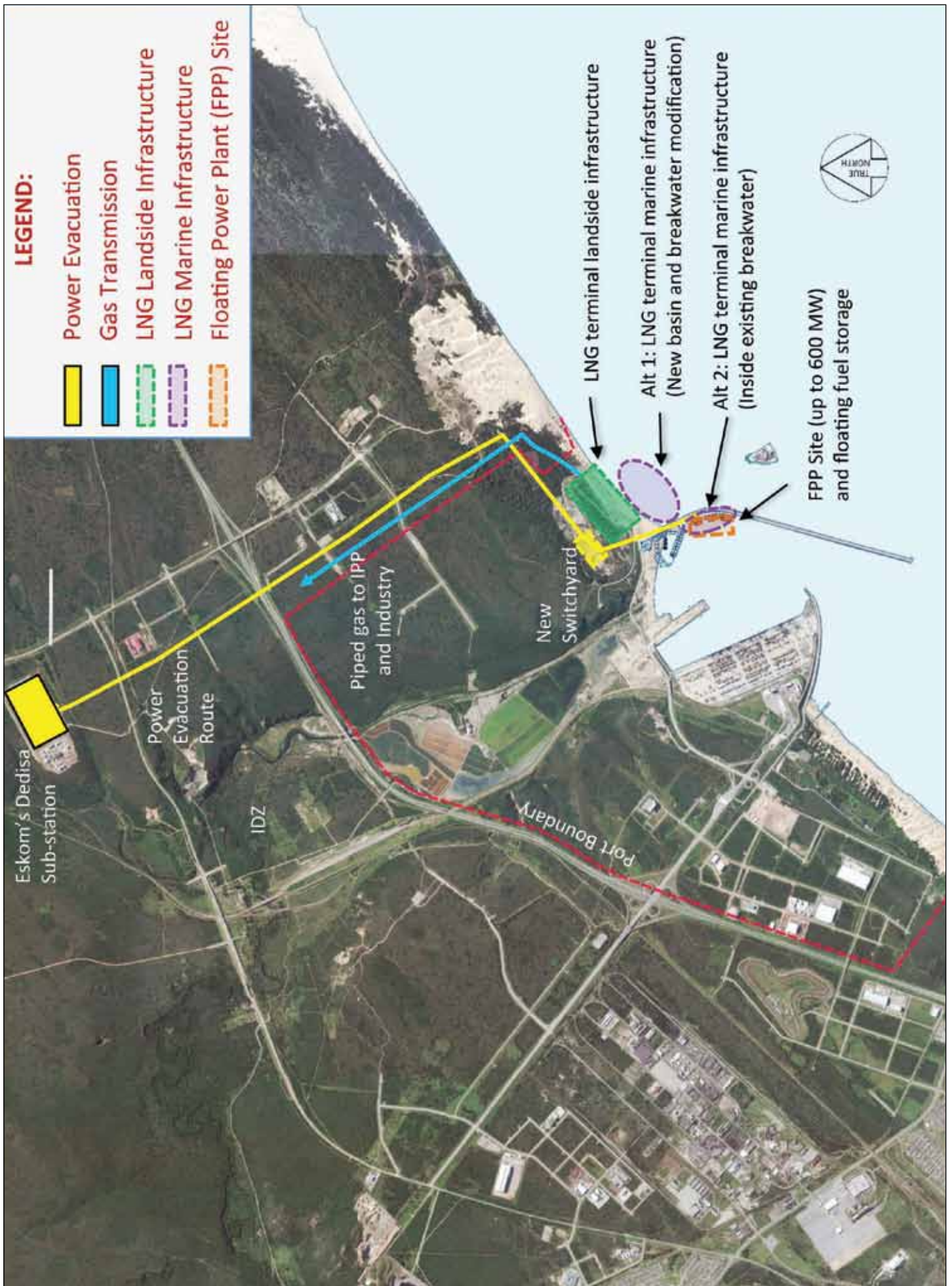


Figure 8: Proposed location for the LNG Import Facility in the Port of Ngqura

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

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.

Return this comment sheet to Mrs Kim Brent of EOH CES:

Tel: 041 585 1715 • Fax: 046 622 2364

Email: k.brent@cesnet.co.za

Postal address: 13 Stanley Street, Richmond Hill, Port Elizabeth, 6001

Project Website: www.cesnet.co.za – Public Documents – Gas to Power Project

Comments

Please fill-in your 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