

**ENVIRONMENTAL & SOCIAL IMPACT ASSESSMENT (ESIA) FOR
THE PROPOSED 386.9MW OLOGBO INDEPENDENT POWER PLANT
PROJECT OF OBAX BENIN POWER & PETROCHEMICAL CO. LTD.,
EDO STATE**

Background Information Document (BID)

This Background Information Document (BID) provides information to assist stakeholders to participate in the Environment and Social Impact Assessment (ESIA) and environmental authorization process for the proposed **386.9MW Ologbo Independent Power Plant Project of Obax Benin Power & Petrochemical Co. Ltd. (OBAX), Edo State.**

What is the ESIA About?

Basically, the ESIA is the process of identifying, predicting, evaluating and mitigating the physical, biological, social and other relevant effects of OBAX proposed project prior to major decisions being taken and commitments made.

In compliance with Nigeria regulatory bodies statutory provisions and in accordance to the EIA Act 86 of 1992, OBAX (*the project-proponent*) has commissioned Richflood International Limited, being a Nigerian based environmental consultant, to conduct an ESIA of the proposed 386.9MW Ologbo Independent Power Plant Project of OBAX.

Background

OBAX Worldwide Limited is an Indigenous Local Content Company with headquarters in Houston Texas and Africa headquarters in Nigeria. OBAX supports oil, gas and energy production with specialized in-country onshore and offshore services for Exploration, Development, Production and Processing. OBAX is leveraging its experience in the oil and gas sectors to diversify into Power Generation, thus contributing to Nigeria's social and economic development, as required by increase in Power supply.

The Independent Power Plant at Ologbo (Ologbo IPP), Edo State is a gas fired power generation facility. It is envisaged that the entire capacity of Ologbo IPP is to be evacuated to the National Grid and/or Additional Off-takers.

Project Location

The proposed Ologbo IPP Project is to be situate at Ologbo (*host*) Community, Ikpoba-Okha Local Government Area of Edo State, South-South Nigeria.

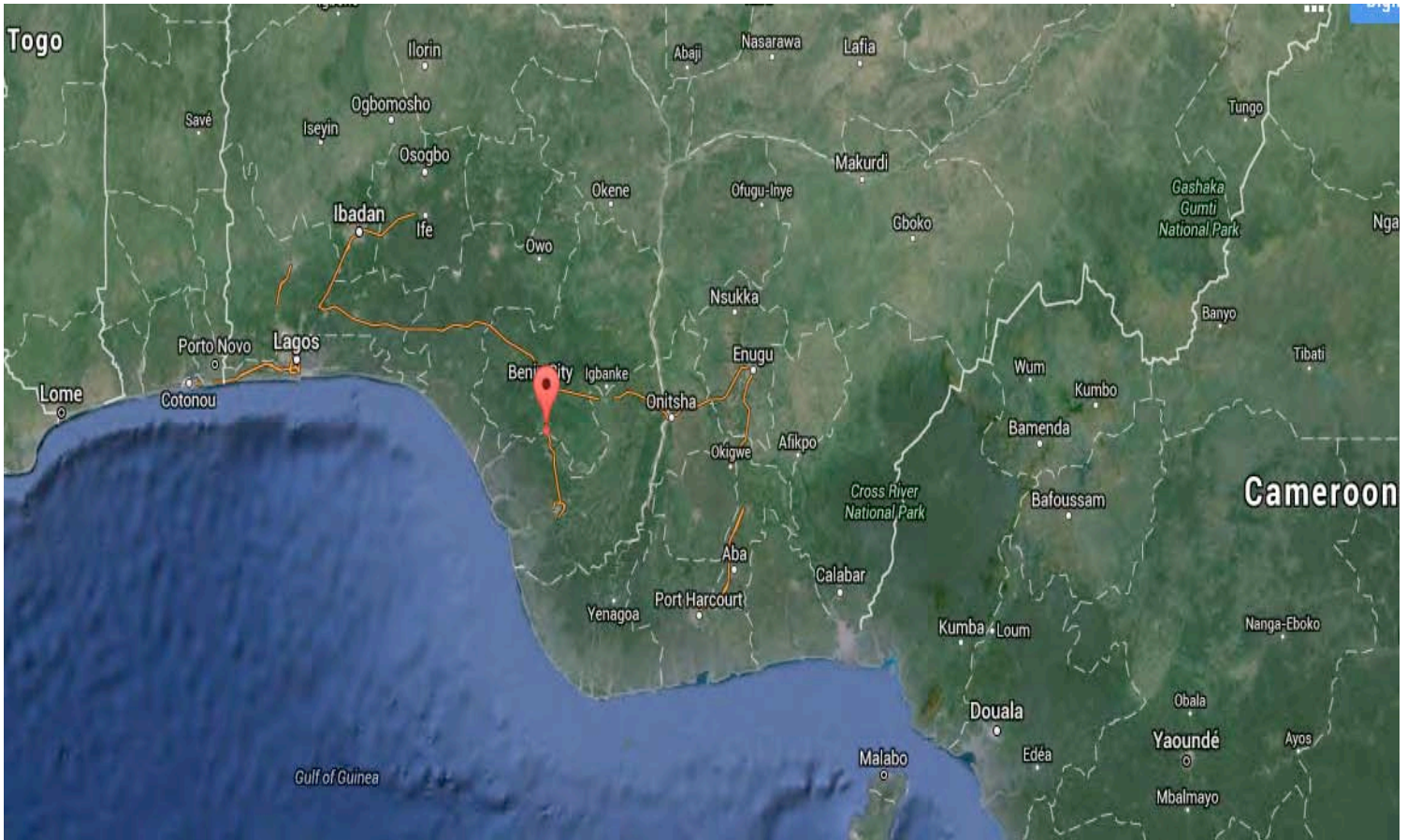


Fig 1: Ologbo IPP Location

Source: Google Map

The following features characterize Ologbo IPP) site:

1. Site location:

- Distance to site from major Road is approximately two (2) km. Easy access to the existing highway from Benin to Warri highway (at Ologbo Bridge).

- General site situation:

The topography is relatively flat, and will encourage future expansion with adequate space for power plant construction.

The northeast boundary of the site is washed by Osiomo River.

2. Proximity to electricity transmission lines for power evacuation:

- The site is located approximately 2 km from the following power lines:
 - 330kV DC OHTL Benin – Sapele.
 - 330kV DC OHTL Benin – Sapele – Delta*
 - 132kV DC OHTL Benin – Delta



Fig 2: Location of OBAX Ologbo-IPP to a Natural Gas Source (ELP Gas-Infrastructure)

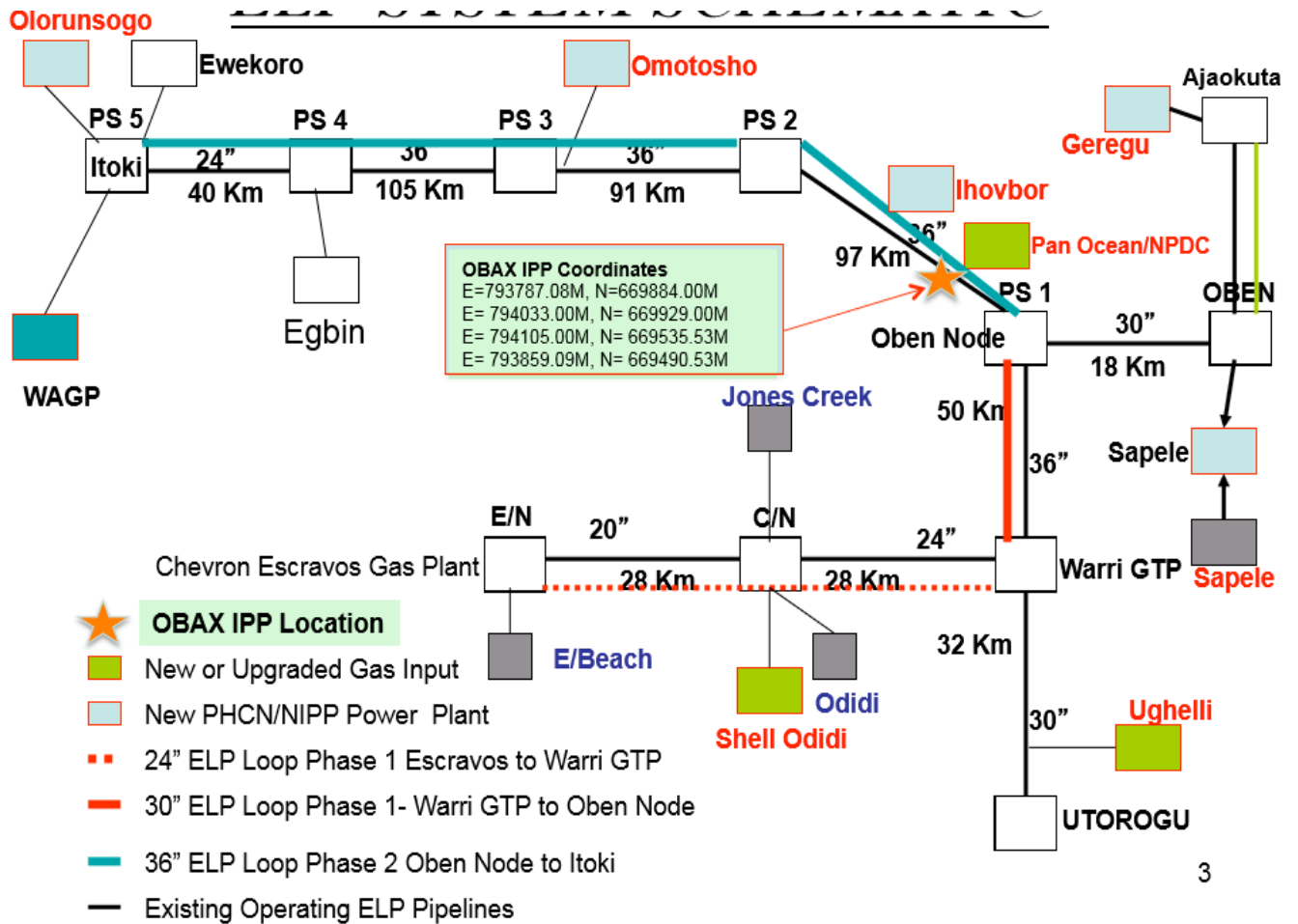


Fig 3: Schematics Showing Project Location to Gas Infrastructure [Escravos – Lagos Pipeline (ELP)]

Project Overview

The proposed Ologbo IPP Project is aimed at the delivery of a combined cycle power generation plant that will be developed and implemented in phases as follows:

- *Phase 1:* an Open Cycle Power Plant with two (2) gas turbine-generator (GTG) units, 2 x 126.1MW (ISO) with total installed capacity of 252.2 MW (ISO).
- *Phase 2:* Open Cycle Power Plant is upgraded into a Combined Cycle Power Plant with two (2) gas turbine-generator (GTG) units of Phase 1 and two (2) Heat Recovery Steam Generators (HRSGs) that supply steam to

- one (1) steam turbine-generator (1 x 137.4MW) with total installed capacity of **389.6MW** (ISO).
- *Phase 3:* a Combined Cycle Power Plant with total installed capacity of 2,500 MW (ISO), with seven (7) blocks, each block with the arrangement of Phase 2.

The present ESIA Study/Report is focused on the first two phases.

It is also envisaged to design, deliver, construct, install and commission a branch 33kV OHTL from Ologbo IPP to nearby 330kV OHTL from Sapele to Benin City Substation, which will secure the power evacuation to the National Grid network.

Objectives of the ESIA

The objectives of the ESIA for the project site are to:

- Provide information and evidence required for developing an Environmental Impact Statement for the project site;
- Establish baseline information for the project site.
- Identify associated/potential impacts of the project in the area;
- Recommend preventive, mitigative and control measures for the identified potential/associated adverse impacts of the project; and
- Develop an effective Environmental Management Plan (EMP) for the lifetime of the project.

POTENTIAL AND ASSOCIATED IMPACT ASSESSMENT

Environmental Impact Indicators

The environmental impact indicators for the study are easily observable parameters that will indicate change/deviation, which can be used to monitor the various environmental components.

The primary ***Biophysical Indicators*** for the on-going impact assessment are the following:

- Climate and meteorology;
- Air quality;
- Noise levels;
- Groundwater;

- Geology and geomorphology;
- Soils and soil erosion;
- Drainage patterns and flooding;
- Unique physical features; and
- Vegetation including economic trees and crops.

The primary *Socio-Economic Indicators* for the on-going impact assessment are the following:

- Land use;
- Employment and income;
- Community population and ethnicity;
- Community relations; and
- Services (e.g water and electricity supply).

The main environmental issues are as follows:

All construction and operation activities that are likely to cause environmental and social impacts will be identified, and evaluated to assess their magnitude, duration, and potential receptors.

The activities, which have the potential to cause impacts on surrounding environment and receptors during the Construction of the power plant, are identified as:

- Site preparation;
- Transportation of construction material, machinery, heavy machinery/ equipment for the power plant by road
- Excavation of equipment foundations and installation of power plant components;
- Laydown areas for temporary use during construction phase;
- Storage and handling of hazardous materials, waste and wastewater; and
- Accommodation and transportation for the construction workforce and OBAX personnel.

During the construction phase, contamination of soil, sediment and ground water may result from potential leaks and spills of oil, lubricants, or fuel from heavy

equipment, dust and exhaust emissions, clearance of vegetation, improper handling of sanitary effluent, or chemical/fuel storage and sanitary and construction wastes. Also soil compaction and erosion may take place during civil works at project site and laying of pipelines.

The Project will have a variety of operational activities that generate significant noise levels, including operation of turbines, pumps, cooling fans, water pumps, etc., and most of these will operate 24 hours. Other possible impacts are Community health and safety issues, hazardous material handling/storage, traffic movement, and Green House Gas Emissions e.t.c

Some of the social impacts due to the operations of the Project are: Employment Generation and In-Migration of Skilled workforce, Demand for lodging, housing and civic services, Increments in cost of living, Opportunity for local transporters and Risks of industrial accidents and fatalities to workers. The impacts as employment generation, demand lodging, housing and opportunity for local transporters would be positive where as other would be creating negligible impacts.

Baseline studies for the ESIA will include, but not be limited to assessment of the following:

- Fauna and Flora;
- Air quality and Noise;
- Demographics, Population, Ethnicity; Language, Vulnerable Groups, Education
- Socio-Cultural Institutions, Leadership Patterns, Government Administration, and Other Institutions (NGOs/CBOs);
- Terrestrial Soils and Geology;
- Surface and Ground Water;
- Livelihoods and Micro-Economy, Key Livelihoods, and Employment;
- Transport and Access;
- Social Infrastructure and Cultural Sites; and
- Community Health and Safety.

The ESIA process aims to identify all the potential impacts of the proposed project, assess the significance of the impacts, and to present measures to mitigate these impacts.

Call for Participation

The stakeholder engagement process is designed to conform to the Nigerian EIA Decree and international standards, including the IFC Performance Standards. Key objectives for stakeholder engagement for this project are:

1. Share information about the Project;
2. Gather local knowledge to improve understanding of the environmental and social context and understand locally-important issues;
3. Enable stakeholders to raise concerns / questions about the Project;
4. Gather responses on the ESIA findings and incorporate stakeholder views into the design and management measures;
5. Respond to concerns and questions and report back on the findings of the ESIA and proposed management measures;
6. Lay foundation for future stakeholder engagement.

Anyone who is interested or affected by the proposed project has a right to participate in the ESIA process, and is invited to further participate in the ESIA Process. Please make use of the following opportunities to be involved in the stakeholder engagement process:

- Study the information made available in this Background Information Document;
- Contact the Stakeholder Engagement Team to obtain further project information, and/or raise issues and concerns (contact details provided below);
- Attend the Stakeholder meetings to obtain further project information, interact with the Project Team, and/or raise issues and concerns. More information about the meetings will be circulated through letters, community leaders, radio announcements and through the project website.

Contact Information

Richflood International Ltd
Comfort Asokoro-Ogaji
info@richflood.com