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| **Project Name:** Credible Commercial/Power Gas Demand Growth for Assa-North Gas Via SNG | **Date:** 18-05-2017 |
| **Sponsoring Business**: Gas-Nigeria | **Project Identifier:** Philip Mshelbila |
| **Project Manager:** Toyin Adenuga |  |

# Background

Natural gas development has been on the burner of the Federal Government of Nigeria. In supporting the government aspiration, SPDC JV plans to develop Assa-North field to produce 300MMscfd by 2019. It is required to secure viable market for molecules expected from the field. SNG has been identified as a good vehicle to increase Shell’s revenue in the gas value chain.

Out of the volume of gas to be produced from the Assa- North field, 100MMScf/d has been reserved for SNG markets within Ogun and Lagos states.

Lagos/Ogun states are the fastest developing economic centers in Nigeria. Significant demand growth projected in the states because there is an Increased awareness of gas as an alternative fuel source in the Nigerian market.

# Purpose and objective

This ToR is raised to further define utilization elements of gas supply from Assa-North field to Lagos and environs and to establish customer opportunities with greatest assurances are linked to Assa-North project for highest value realization for Shell.

Executing this will support the government aspirations as well as providing Shell highest returns from playing both upstream and downstream along the value chain.

Maximize value for Shell.

# Scope and deliverables

**Scope Activities / Deliverables:**

The gas molecules will majorly service captive and embedded power generation. The initiative will cover all commercial activities that is required to bring the gas to the market.

There are two primary routes that has been identified to bring the gas to the market; both will be developed simultaneously with the following details:

A. PROJECT ‘CHRYSALIS’ –LEKKI AND ENVIRONS DEVELOPMENT

The Chrysalis project is a potential partnership arrangement between Shoreline and Shell to distribute Gas in the Lekki-Epe-Ikoyi-VI and environs. This is the primary and preferred outlet to utilize the gas to be procured from Assa North.

Main customers for the project include power generating companies (both Embedded and Captive for residential estates), the Light Up Lagos Initiative (which is also an embedded power generation initiative), manufacturers for industrial utilization as well as hotels.

B. BADAGRY DEVELOPMENT

The initial project intention is to establish a 60MMScf/d capacity facility PRMS and its associated distribution facilities including pipelines, to serve these potential customers.

**Deliverables:**

* Completed Commercial or Terminate Heads of Terms Agreement with Shoreline
* Completed Market Survey and Customer Viability Assessment
* Completed Investment Mandate
* Supply Gas to end customers

**Out of scope Activities / Deliverables:**

* Gas demand within capture area for power to national grid.
* Project delivery for either of the of the two options

# Milestone Plan

* + Complete Commercial Negotiation or Terminate Heads of Terms Agreement with Shoreline- July 2017
  + Carry out formal Market Survey- July 2017
  + Customer Viability Assessment/IDD-October 2017
  + Secure PCN for both options- November 2017
  + Conclude Commercial Negotiation with Anchor Customer- Feb. 2018

**Option A**

* + Complete market Development Activities for Anchor Customers- March 2018
  + Secure GIP- April 2018
  + Complete Infrastructure Development- December 2019
  + Complete Connection of customers to utilise 100% of installed capacity. - December 2020

**Option B**

* + Complete Badagry Expansion Agreements Negotiations- March 2018
  + Secure GIP for Badagry Expansion- March 2018
  + Complete market Development Activities for Anchor Customers- March 2018
  + Complete Infrastructure Development- December 2019
  + Complete Connection of customers to utilise 100% of installed capacity. - December 2020

# Project Completion Criteria

The project shall be considered completed when the anchor customer has been connected to the either of the two facilities

# Risks

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| **Risk** | **Probability and impact**  **(Low, Med, High)** | **Mitigation** |
| Delayed completion of negotiation between partners on Option A may lead to project delivery delay causing misalignment with Assa North project timeline. | Med/High | Set a deadline of July 2017 for the completion of a position between partners. |
| Normal project delivery of such magnitude requires a minimum of 24months from conception to first gas, which may be misaligned with Assa North’s project timeline | Med/High | Achievement of project delivery timeline will require significant pre-FID spend, which needs to be approved as soon as possible. |
| Unavailability of funding from Shell especially in this constrained environment, leading to project delays. | Med/High | Secure project funding early as an enabler for the more visible Assa North project |
| Option B- Misalignment of interest between parties in the value chain | Med/Med | Commence early engagement with parties in the value chain to establish mutual interest. |

# Organization and governance

Some field data gathering will be required to establish full scope of demand and readiness or plan from potential customers. This involves enormous work requiring resources both human and equipment. May engage services of consultant for the data gathering.

The activity will be managed by SNG (Toyin Adenuga) with strong support from SPDC Gas Upstream (Alex Orman and Rohan D’Souza).

Weekly reviews will be carried out between the work-stream lead, the support members and GM-Gas (Philip Mshelbila).

# Initial cost estimates

Costs associated with this review will be restricted to FEASEX only. This is estimated below $100k.

All CAPEX expenditure will be related to the project development and delivery, which is out of scope of this initiative. Detailed breakdown of cost estimate will be made to define personnel and hardware required to deliver the review.

# Financial Impact

The expected financial impact of the initiative will be realised at the end of 2021, after one full year of gas supply to customers. As shown below:

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| **Gas Sales projection** | **2021** |
| Number of days | 330 |
| Volume of Gas (MScf/d) | 100000 |
| projected gas price (USD/Mscf | $ 1.00 |
| Total revenue | $ 33,000,000.00 |
| Opex (5% of Revenue) | $ 1,650,000.00 |
| Tax (30%) | $ 9,900,000.00 |
| **CSD** | **21,450,000.00** |