

# The Shell Petroleum Development Company of Nigeria Limited

## Internal Investment Proposal

### Summary Information

|                               |  |                 |         |             |         |
|-------------------------------|--|-----------------|---------|-------------|---------|
| Directorate                   | Technical Directorate  |                 |         |             |         |
| Group equity interest         | 100% in SPDC, whereas SPDC is the Joint Venture (JV) operator of an unincorporated JV with a 30% interest.   |                 |         |             |         |
| Other shareholders / partners | Nigeria National Petroleum Company (NNPC: 55%), Total: 10%, Nigeria Agip Oil Company (NAOC: 5%) in SPDC-JV   |                 |         |             |         |
| Amount                        | US\$43.26 mln Shell share, MOD, 50/50 (US\$144.21 mln 100% JV) in addition to US\$1.74 mln Shell share, MOD, 50/50 (US\$5.80 mln 100% JV) Pre-FID element bringing the total to US\$45.00 mln Shell share, MOD, 50/50 (US\$ 41.98 Capex and US\$ 3.03 Opex). |                 |         |             |         |
| Project                       | 12” Ekulama - Soku & 12“ Soku AG Pipelines   |                 |         |             |         |
| Main commitments              |  | Pre-FID         |         | FID         |         |
|                               |  | (US\$ Mln)      |         | (US\$ Mln)  |         |
|                               | Work Element Description   | Shell Share     | 100% JV | Shell Share | 100% JV |
|                               | Survey   | 0.10            | 0.34    | NA          | NA      |
|                               | Land Acquisition   | 0.25            | 0.84    | NA          | NA      |
|                               | ESHIA  | 0.08            | 0.25    | NA          | NA      |
|                               | SD Engagement (SCD)/ Security  | 0.05            | 0.17    | 2.55        | 8.50    |
|                               | Project Management   | 0.27            | 0.92    | 1.50        | 5.00    |
|                               | Line pipe Procurement  | 0.99            | 3.30    | NA          | NA      |
|                               | Construction & Commissioning   | NA              | NA      | 39.21       | 130.71  |
|                               | Total  | 1.74            | 5.80    | 43.26       | 144.21  |
| Source and form of financing  | This investment will be financed with JV funding and Shell share capital expenditure will be met by SPDC’s own cash flow. Formal JV partners’ approval will therefore be obtained.   |                 |         |             |         |
| Summary cash flow             | Cost only evaluation. Cash flow not applicable.  |                 |         |             |         |
| Summary economics             | Summary economics  | NPV7% (USD mln) |         | VIR7%       |         |
|                               | Base case  | -11.9           |         | -0.35       |         |
|                               | Full Life cycle  | -12.1           |         | -0.33       |         |

### ***Section 1: The proposal (management summary)***

This Investment Proposal requests approval for funding of US\$ 43.26 mln Shell Share (US\$ 144.21 mln 100% JV) for the full scope of the Ekulama to Soku and Soku spur AG lines project for the Construction/commissioning, Sustainable Development/provision of security and entire scope of Project Management for the 12" x 16.25km Ekulama - Soku and 12" x 1.5km Soku AG pipelines works.

The costs for Route Survey, Land Acquisition, Environmental, Social and Health Impact Assessment studies, procurement & coating of line pipes had earlier been captured in the Pre-FID for Soku Liquids and AG Pipelines Package.

The project is essentially to guarantee production from Ekulama 1 & 2 and Soku flow stations post flares-down.

The subject AG pipelines are further described as follows:

- **Pipeline Number 1:** 12-inch x 16.25 km associated gas pipeline from Ekulama 2 to Soku gas plant.
- **Pipeline Number 2:** 12-inch x 1.5 km AG spur line from Soku flow station to the join pipeline 1 above.

Pipeline Number 1 is required to transport approximately 17 MMscf/d of associated gas from the Ekulama field to Soku gas plant for processing thereby eliminating current gas flaring and also adding to the existing gas supply to NLNG. It will essentially secure 21Mbopd oil production for Ekulama field oil and serve as replacement for the existing 18" x 17.0km AG pipeline, which was converted to alternate as a condensate export line from Soku LGSP.

Pipeline Number 2 is required to transport an average of 4 MMscf/d associated gas from the Soku flowstation to the Soku gas plant to secure crude oil production from the Soku flow station post flare down deadline of 2012. This line will also ultimately add to the sales gas stream to NLNG.

The overall project expenditure phasing is summarised in the table below:

**Table 1: Project Expenditure Phasing (US\$ Mln MOD 50/50)**

| Description  | 2011         | 2012         | Total         |
|--------------|--------------|--------------|---------------|
| Pipeline 1   | 72.45        | 59.57        | 132.02        |
| Pipeline 2   | 6.69         | 5.50         | 12.19         |
| <b>Total</b> | <b>79.14</b> | <b>65.07</b> | <b>144.21</b> |

### ***Section 2: Value proposition and strategic and financial context***

The proposal for the acceleration of the AG pipelines was brought to the DRB for consideration in October 2010, with request to progress the Ekulama – Soku AG Pipelines as a standalone package from the oil/condensate line from Soku – San Barth. Subsequently, express approval was granted to decouple the gas line execution works due to the strategic value of being able to produce oil from associated facilities post flares-out deadline anticipated in Q4 2012.

Based on the above, the AG pipelines project was moved from the VAR3 to post DG-4 stage in order to realise obvious value by accelerating completion from the earlier deterministic schedule of 2014/2015 to Q4 2012. (DG-3 Approval was obtained in November).

Construction and commissioning activities are planned for completion by Q4 2012 in order to secure production from Ekulama 1 & 2 (post flares down deadline), hence the drive for acceleration. In order to realise this aspiration, ESHIA is being progressed on fast track basis. Line pipes of correct specifications are being sourced from existing SNG stocks to fast track long lead procurement process.

Again, the proposal to fast track Detailed design, construction and commissioning is being pursued by issuing a variation order to existing contract E-16647 (NESTOIL) to accelerate works. The existing opportunity for this is based on the fact that the Contractor is a fully owned/proven Nigerian Contractor, and is currently winding down on the NCTL scope. Furthermore, the contract has rates for the works and is also located within the same area, thereby discounting mobilisation costs and enhancing the opportunity for timely works completion.

The strategic benefits and value proposition from executing the project are as follows:

- Pipeline 1 provides means of evacuating Ekulama 1 & 2 associated gas (total of ca. 17 MMscf/d) that would otherwise be shut in along with 21kbopd production from the field due to flare down deadline.
- Pipeline 2 permits evacuating Soku flowstation AG production (average of 4 MMscf/d) that would otherwise be shut in along with average of 8 kbopd production from the flowstation due to flare down deadline.

### Summary Economics

The FID economics for the Ekulama 2 AG and the Soku Spur AG lines was evaluated as a cost only Oil and Gas (OGI) infrastructure project using the 50/50 project level III cost estimate provided by the project team.

Hence, sensitivities were carried out on the project cost to show the impact of Low and High CAPEX, 1.5% cost mark up due to BVA (benchmarked verified and approved) issues, and Bunker resistant lines. Additional sensitivities carried include assuming that, the project is undertaken as ringed fenced (standalone) i.e. for a new comer without a tax base, the project's full life cycle and the value at risk if the project is not executed. The details are shown in table 2 below.

**Table 2: Economics Grid -**

| PV Reference Date: 1/7/2010             | NPV<br>(\$/S \$ mln) |        | VIR   | RTEP | UTC<br>(RT \$/boe) |    | Payout-<br>Time<br>(RT) | Maximum Exposure<br>(RT) |
|---|----------------------|--------|-------|------|--------------------|----|-------------------------|--------------------------|
| Cash flow forward from: 1/1/2010        | 0%                   | 7%     | 7%    | %    | 0%                 | 7% | yyyy                    | \$mln                    |
| <b>Base Case</b>                        |                      |        |       |      |                    |    |                         |                          |
| SV (\$50/bbl RT10)                      | -9.7                 | -11.9  |       |      |                    |    |                         |                          |
| RV (\$60/bbl RT10)                      | -9.7                 | -11.9  | -0.35 | NA   | NA                 | NA | NA                      | US\$ 30.07 mln (2012)    |
| HV (\$80/bbl RT10)                      | -9.7                 | -11.9  |       |      |                    |    |                         |                          |
| BEP (RT \$/bbl)                         |                      |        |       |      |                    |    |                         |                          |
| <b>Sensitivities (using RV)</b>         |                      |        |       |      |                    |    |                         |                          |
| Low Capex (-10%)                        |                      | -11.0  | -0.35 |      |                    |    |                         | US\$ 27.33 mln (2012)    |
| High Capex (+15%)                       |                      | -13.4  | -0.34 |      |                    |    |                         | US\$ 34.16 mln (2012)    |
| 1.5% FID cost mark up due to BVA issues |                      | -13.9  | NA    |      |                    |    |                         | NA                       |
| Bunker resistant lines (+25%)           |                      | -14.9  | -0.35 |      |                    |    |                         | US\$ 37.58 mln (2012)    |
| Project with ring fencing               |                      | -41.3  | NA    |      |                    |    |                         | NA                       |
| Full project scope (cost only)          |                      | -12.1  | -0.33 |      |                    |    |                         | US\$ 31.01 mln (2012)    |
| Value @ risk based on BP10 forecast     |                      | 1009.0 | 0.00  |      |                    |    |                         | NA                       |

## Key Project Parameter Data Ranges (Shell Share)

|                   | Unit     | Bus Plan<br>(BP10) | Low  | Mid    | High | Comments                             |
|-------------------|----------|--------------------|------|--------|------|--------------------------------------|
| Capex (MOD)       | US\$ mln | 39.2               | 34.3 | 39.2   | 45.1 | Construction and commissioning       |
| Opex (MOD)        | US\$ mln | 4.1                | NA   | 4.1    | NA   | SCD and Security                     |
| Production volume | Mmboe    | 362.8              | NA   | 362.8  | NA   | Value at risk based on BP10 forecast |
| Commission Date   | mm/yyyy  | Dec-12             | NA   | Dec-12 | NA   |                                      |

## Economics Assumptions

### Base Case

- Full project 50/50 cost estimates treated as CAPEX
- Condensate was taxed as Oil with CITA and AGFA incentives to gas.
- 10% of total project RT CAPEX treated as abandonment cost.
- 2% of MOD Capex expenditure treated as SCD.
- NDDC levy 3% of total expenditure.

### Value at Risk

- Oil PSV of \$60/bbl RT10
- Condensate was taxed as Oil with CITA and AGFA incentives to gas.
- ARPR 2010 fixed and variable OPEX was used.  
-Generic fixed Opex for new lines.
- Flare Penalty of US \$3.5/mscf non-tax deductible.
- GHV of 1150Btu/scf.
- 10% of total project RT CAPEX assumed as abandonment cost.
- NDDC levy 3% of total expenditure.
- 2% of MOD Capex expenditure treated as SCD.
- Education tax of 2% assessable profit.
- Facility life span of 20 years
- NDDC levy 3% of total expenditure

## Section 3: Risks, opportunities and alternatives

| <i>Risk</i>  | <i>Planned Mitigation</i>  |
|--|--|
| Funding constraints<br>(Alternative Funding in BP10) | Internal offsets have been identified in the base plan and funding requirements will now be met through the usual JV funding arrangements. Provision has been made for funding in BP10 JV Base budget.   |
| Continued insecurity in the Niger Delta region       | Mitigation for this risk is handled at a corporate and Nigerian National level and, if situation persists could negatively impact the cost, project schedule and first gas date. Notwithstanding the challenges above, a robust security provision/plan has been made benchmarking recent experiences from projects around the same area (NCTL & EGGS-2). Furthermore, prior to mobilisation for construction works, a detailed/fit for purpose security plan will be developed in conjunction with the Area Security Advisor – Major Projects |

|  |   |
|--|---|
| Community Issues                             | There is very little uncertainty in terms of local knowledge of the communities that will be traversed by the pipeline project. Effective SD Management like that employed during the NCTL & EGGS-2 Project shall be employed to address this risk and minimise attendant delays which may lead to cost escalations. More importantly the local Contractor being proposed for execution has a very good system to manage community issues with SPDC's support. SCD costs have been properly captured in the cost estimates. |
| Cost escalation                              | Though contract cost escalation due to security challenges is a key risk especially in the Niger Delta, but this risk shall be addressed by benchmarking requirements with realities on recent/similar projects, which were successfully executed during the most volatile period of 2005 – 2009. Contingency employed is 8%.   |
| Nigerian Content                             | NCD risk is minimal and is being managed line pipes are from surplus Shell Nigeria Gas 12-inch pipes. Construction/commissioning Contractor for the works. (NESTOIL) is fully Nigerian owned and competent having executed and completed the NCTL.  |
| Tax proposals in the Petroleum Industry Bill | The PIB is yet to be passed into law. Currently there are various versions and it is unclear what the final version will be. There is however the risk that the PIB may further depress the economics of the project.   |

#### ***Section 4: Corporate structure, and governance***

The existing corporate structure and governance arrangements of SPDC-JV with SPDC as operator still subsist for this investment.

#### ***Section 5: Functional Support and consistency with Group and Business Standards***

This proposal complies with Group Business Principles, policies and standards. Functional support for this proposal is provided by Finance, Social Performance, Supply Chain Management, HSE, Operations, Legal, Treasury and Tax functions.

#### ***Section 6: Project management, monitoring and review***

There is an identified Decision Executive, Business Opportunity Manager, Project Manager and Operations Manager. The existing Flare Decision Review Board will control any major change proposals and will monitor value delivery based on (PERT) reviews. Projects & Technology oversight will be exercised through membership of the Flare DRB.

#### ***Section 7: Budget provision***

The project is in BP10 Plan under Alternative Funding and the JV 2011 programme. Internal offsets have been identified in the Base Plan for 2011 expenditure while 2012 pressures will be addressed in BP11.

**Section 8: Group financial reporting impact**

The financial impact of this proposal on Shell Group Financials is as indicated in the table below:

| US\$ Million              | Prior Years | 2011    | 2012    | 2013  | 2014  | 2015  | Post 2015 |
|---------------------------|-------------|---------|---------|-------|-------|-------|-----------|
| <b>Total Commitment</b>   | 1.74        | 23.75   | 19.52   | 0.00  | 0.00  | 0.00  | 0.00      |
| <b>Cash Flow</b>          |             |         |         |       |       |       |           |
| SCD Expenditure           |             | 1.28    | 1.28    |       |       |       |           |
| Pre-FID Expenditure       | 1.74        |         |         |       |       |       |           |
| Capital Expenditure       |             | 22.47   | 18.24   |       |       |       |           |
| Operating Expenditure     |             | 1.99    | 1.86    |       |       |       |           |
| Cash flow From Operations |             | (0.60)  | 5.54    | 4.72  |       |       |           |
| Cash Surplus/(Deficit)    |             | (23.07) | (12.71) | 4.72  |       |       |           |
| <b>Profit and Loss</b>    |             |         |         |       |       |       |           |
| NIBIAT +/-                |             | (0.25)  | (0.10)  |       |       |       |           |
| <b>Balance Sheet</b>      |             |         |         |       |       |       |           |
| Avg Capital Employed      |             | 11.41   | 29.12   | 33.06 | 30.70 | 30.70 | 30.70     |

**Section 9: Disclosure**

Materials disclosures, if any, will be done in line with the Group and SPDC Disclosure policies and guidelines.

**Section 10: Financing**

The FID portion of this investment will be financed with JV funding and Shell Share capital expenditure will be met by SPDC's own cash flow.

**Section 11: Taxation**

Completion of the Ekulama AG and Soku Spur pipelines should have appropriate tax treatment in line with statutory requirements.

**Section 12: Key Parameters**

Approval is sought for US\$43.26 mln Shell Share for entire scope to complete the project: Design, Construction/commissioning, Sustainable Development, provision of security and entire scope of Project Management for the 12" x 16.25km Ekulama - Soku and 12" x 1.5km Soku Spurline AG pipelines works.

***Signatures***

This Proposal is submitted to EVP, Sub-Saharan Africa for approval.

Supported by:

.....  
*Bernard Bos*

*(VP Finance Africa, FUI/F)*

Date:...../...../.....

For Business approval:

.....  
*Iain Graig*

*(EVP, Sub-Saharan Africa, UIG)*

Date:...../...../.....

.....  
*Initiator: Niyi Salami, UIG/T/PPL*

*(SPDC-UIG/T/PPL)*

Date:...../...../.....