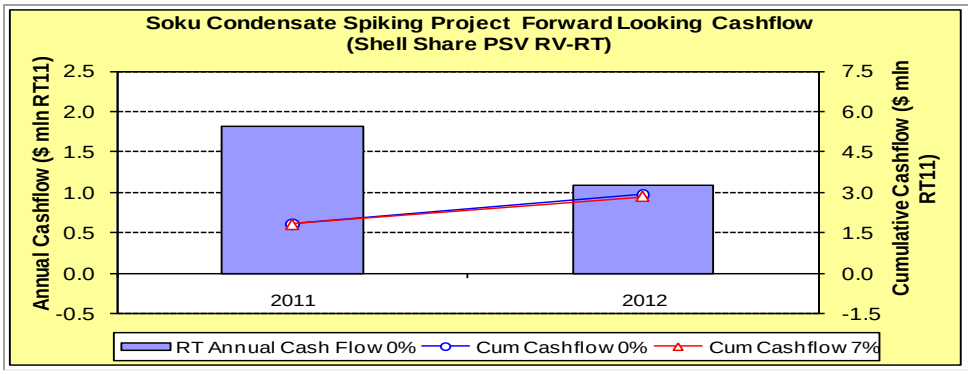
# The Shell Petroleum Development Company of Nigeria Limited

## Investment Proposal

### Summary Information

| | |
|---|---|
| Directorate | Commercial (UIB) |
| 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 Exploration & Production Nigeria (TEPNG: 10%), Nigeria Agip Oil Company (NAOC: 5%) in SPDC-JV. |
| Amount | US$28.2mln (Shell Share, MOD) representing US$15.96mln (Shell share, MOD) in cumulative tariff payment and degradation charge, plus US$12.24mln (Shell share, MOD) previously approved for the provision of Condensate Spiking facilities at Soku Gas Plant. |
| Project | Soku Condensate Spiking Project – NLNG Tariff payment commitments. |
| Main Commitments | |

| Item | Previous Approved IP | This Proposal ($mln) | | TOTAL ($mln) | |
|---|---|---|---|---|---|
| | ($mln) | JV100 % | SHELL | JV100 % | SHELL |
| Facilities | 40.80 | 0.00 | 0.00 | 40.80 | 12.24 |
| NLNG Plant Quality Condensate Degradation claim | 0.00 | 16.82 | 5.04 | 16.82 | 5.04 |
| Soku Condensate Handling Tariff | 0.00 | 36.38 | 10.92 | 36.38 | 10.92 |
| **TOTAL** | **40.80** | **53.20** | **15.96** | 94.00 | 28.20 |

| | |
|---|---|
| Source and Form of Financing | This investment will be financed with JV funding and Shell share of planned expenditure will be met from SPDC's own cash flow. |
| Summary Cashflow |  |



| Summary economics (Base case) | NPV 7% (USD mln) | VIR 7% |
|---|---|---|
| SV-RT ($50/bbl RT11) | 1.8 | NA |
| RV-RT ($70/bbl RT11) | 2.8 | NA |
| HV-RT ($90/bbl RT11) | 3.9 | NA |

Summary Economics

**Detailed Information Including Management Summary**

**Section 1: The Proposal (Management Summary)**

This Investment Proposal seeks organizational approval for further appropriation of $15.96 mln ($53.20mln, 100% JV), split into $5.04mln ($16.82mln, 100% JV) to cover NLNG's Plant Condensate quality degradation claims and $10.92mln ($36.38mln, 100% JV) being estimated cumulative tariff charge for the initial 3-year tenure of the Condensate Handling Agreement with NLNG. This proposal is additional to the earlier approval (27April 2009) for a revised funding of $12.24mln ($40.8mln 100% JV). Spiking of Soku heavy condensate has since begun (October 2009) based on operational/commercial principles agreed upfront with NLNG and SPDC JV Partners. Presently, there is daily injection of about 18,000 barrels of stabilised condensate from Soku Gas Plant, into GTS 2 (East Gas Gathering System, EGGS) for recovery and processing within NLNG facilities (See Table 5 of Appendix).The recovered condensate is subsequently re-delivered via the NLNG owned 6" line to Bonny Oil and Gas Terminal (BOGT).

Tariff exposure did not feature in the initial IP figures due to ongoing negotiations with NLNG to agree the amount to be charged as well as, requirement for review of the related draft Condensate Handling Agreement (CHA) by SPDC JV Partners. With the successful completion of negotiations and Partners' support of the final draft agreement, NLNG and SPDC (as Operator, on behalf of the JV) are ready to execute the Soku Emergency Condensate Injection and Recovery Agreement, hence the need for this IP. The funding requirement for this final stage of formalization of the commercial underpinning of the condensate injection and recovery scheme via NLNG is as follows:-

**Table 1 : Estimation of Degradation & Tariff Charges for the 3 year Agreement.**

| SN | ITEM | CURRENT PROPOSAL ($mln) | | REMARKS |
|---|---|---|---|---|
| | | JV | SHELL | |
| 1 | NLNG Plant Condensate degradation liability | 16.82 | 5.04 | Penalty for fouling NLNG Plant condensate. Valid from Oct 09 to April 2010. Amount is for the refund of verified claims suffered by NLNG as a result of injection of Soku heavy condensate. |
| 2 | Condensate Handling Tariff. | 36.38 | 10.92 | Calculation is based on actual condensate injection from Soku to NLNG for 2009 and 2010 and BP10 plan figures for 2011 and 2012. Funding will follow execution of the Agreement in 2011. |
| **TOTAL** | | **53.20** | **15.96** | |

It is noted that an IP for upgrade of the Soku Condensate Injection facilities is also in circulation for approval. This other IP will raise the original facilities IP from $40.8mln to $48.00mln (JV 100% and Shell only, $14.40mln up from earlier $12.24mln already appropriated and spent) about a 19.6% increase on the earlier approval.

**Section 2: Value Proposition and Strategic and Financial Context**

1) Restoration of 600 – 800MMscf/d gas supply to NLNG from Soku node.
2) Recovery of circa 18,000 bbls of condensate daily (that would otherwise have been lost to saboteurs).
3) Improvement in environmental performance and reduced condensate theft; saving lives as well as enhance overall integrity of SPDC pipelines.
4) Facilitate compliance with Government Flares-out policy for Soku and proximal fields plus consequent protection of crude oil production.
5) Reduce cost of line repairs and downtime for Soku Gas Plant operations.

**Summary Economics**

The evaluation done in October 2009 to support Proposal to Commence Negotiations was on a forward-looking, full life cycle basis to determine the attributable benefits of the project at various tariff levels. Under the pre-injection scenario of evacuation via the Soku condensate line, recovery stood at about 80% on account of criminal bunkering activities with exposure to value erosion arising from the routine HSSE risks and pipeline repair costs, as well as the possible threat to Soku Gas Plant itself.

The evaluation supporting this IP for Soku CHA with NLNG is similarly on a forward-looking basis using the 50/50 cost estimate, the BP10 NFA forecast plus the agreed tariff of $2.54/bbl (MOD) on the 100% recovered condensate volumes up till the expiration of the current 3 Year CHA in 2012.

**Table : 2 - Economic Grid (Shell Share)**

| PV Reference Date: 1/7/2011 | NPV (S/S $ mln) | | VIR | RTEP | UTC (RT $/boe) | | Payout-Time (RT) | Maximum Exposure (RT) |
|---|---|---|---|---|---|---|---|---|
| Cash flow forward from: 1/1/2011 | 0% | 7% | 7% | % | 0% | 7% | yyyy | mln |
| Base Case | | | | | | | | |
| SV-RT ($50/bbl RT11) | 1.8 | 1.8 | | | | | | |
| RV-RT ($70/bbl RT11) | 2.9 | 2.8 | NA | >50% | 13.92 | 13.81 | 2011 | US$ 0.16 mln (2011) |
| HV-RT ($90/bbl RT11) | 4.0 | 3.9 | | | | | | |
| | | | | | | | | |
| Sensitivities (on base case) | | | | | | | | |
| Low Opex (-10%) | | 2.9 | NA | | | | | US$ 0.16 mln (2011) |
| High Opex (+15%) | | 2.7 | NA | | | | | US$ 0.15 mln (2011) |
| 1.5% FID cost mark up due to BVA issues | | 2.5 | NA | | | | | |
| CHA extension to 2018 (Tariff $2.54 RT11) | | 4.8 | NA | | | | | US$ 0.16 mln (2011) |
| Full life cycle (up to end of CHA in 2012) | | 0.3 | 0.03 | | | | | US$ 8.33 mln (2009) |

**Table : 3 - Key Project Parameter Data Ranges (Shell Share)**

| | Unit | Bus Plan BP10 | Low | Mid | High | Comments |
|---|---|---|---|---|---|---|
| Capex (MOD) | US$ mln | NA | NA | NA | NA | |
| Opex (MOD) | US$ mln | 6.39 | 5.75 | 6.39 | 7.34 | Low & High based on Opex sensitivity. |
| Production volume | Mmbbl | 0.47 | NA | 0.47 | NA | |
| Start up Date | mm/yyyy | Oct-09 | NA | Oct-09 | NA | |

Accrued Charges for 2009 and 2010 are due and payable via SPDC JV monthly NLNG gas invoice offset, following the approval of this IP and execution of the enabling Agreement. Thus, the condensate volumes for the earlier years have been moved forward and used in the economic analysis.

**Section 3: Risks, Opportunities and Alternatives**

| Risks | Mitigation Measures |
|---|---|
| Security situation in the Niger Delta | In Soku area, the activities of condensate/crude oil thieves and militants are firmly linked to the inherent instability of the region. As a consequence, the following risks have been mapped:<br>a. Condensate bunkering/associated criminal activities/ HSE/environmental issues,<br>b. Increased pipeline theft as a stand-alone endeavour, and<br>c. Kidnap risk.<br>These threats are presently mitigated through Joint Task Force deployment, increased Early Warning utilising the Security Information Network Centre, increased community surveillance and enforcement of greater access control to facilities. |
| Political /Community Disturbance | The Soku facilities are located in an area claimed by three major communities (Oluasiri, Elem-Sangama and Soku) in the two adjoining States of Rivers and Bayelsa. General Memoranda of Understanding are in place with all three communities to mitigate this risk. |
| NAPIMS/DPR Approval | DPR and NAPIMS were engaged on 3rd & 4th September 2008 with further dialogue with NAPIMS on 24th October 2008. This effort was sustained until close out of all activities related to project implementation. For instance DPR and NAPIMS Personnel were in the Spiking Project Team. |
| Integrity of GTS-2 | Process Flow simulations (by Project Team & SGSI) confirmed that circa 30Mbpd can be spiked into the GTS-2 without compromising its integrity. However the frequency of pigging the line has increased in view of increased liquid loading. |
| Offspec condensate and Tanktops in NLNG | NLNG facilities could be overwhelmed with condensate volumes and/or off-specification condensate injected into the GTS 2 line from Soku node. In addition to regular NLNG export, routine evacuation to BOGT is employed to address this concern. |
| Taxation of NLNG condensate as Oil | Tax authorities are challenging tax treatment of NLNG's condensate as gas rather than oil. The use of NLNG's slug catcher by SPDC JV is likely to compromise NLNG's defence and strengthen the case to raise condensate taxation to 85% tax rate. Full cycle consideration confirms additional upstream value impact of richer gas supply as well as midstream value from the reopening of Soku Gas Plant and condensate disposal through NLNG. The NLNG disposal option will however be on exception basis (to mitigate inability to export via BOGT) as recovered condensate from Soku is re-injected into the SPDC JV crude stream and disposed as such. |

**Opportunities**

Successful condensate evacuation via GTS-2 offers enormous commercial value and the scheme can be similarly adopted for other plants e.g. Gbaran – Ubie and OKLNG, subject to NLNG capacity to accommodate such additional volumes as well as availability of export sale outlets.

**Alternatives**

The main alternative of continued evacuation of subject condensate volumes via Soku to Ekulama trunk line negates project objectives and comes with the key risk of daily value loss of circa US$1.0mln to condensate thieves, in addition to negative impact on gas production, health, environmental and safety hazards plus security exposure around the Soku operational area.

**Section 4: Corporate Structure, and Governance**
Existing Corporate structure and SPDC-JV arrangements (with SPDC as Operator) serve as vehicle for the investment and operations.

**Section 5: Functional Support**
Functional support has been received from Legal, Tax, Controller and Economics.

**Section 6: Project Management, Monitoring and Review**
UIB Commercial Team has concluded CHA negotiation. Commercial Operations Team will administer the contract in liaison with SPDC's Central Production Coordinating Centre.

**Section 7: Budget Provision**
Plant condensate quality degradation charges as well as the tariff charge for Soku condensate handling, will be offset against SPDC JV monthly gas revenue from NLNG.

**Section 8: Group Financial Reporting Impact**
The financial impact of this proposal on Shell Group financial is as outlined in the table below:

| US$ Million | Prior Years | 2011 | 2012 | 2013 | 2014 | 2015 | Post 2015 |
|---|---|---|---|---|---|---|---|
| **Total Commitment** | **12.24** | **7.05** | **8.91** | **0.00** | **0.00** | **0.00** | **0.00** |
| **Cash Flow** | | | | | | | |
| SCD Expenditure | | | | | | | |
| Commitment OPEX (Tariff/Degradation Expense) | | 7.05 | 8.91 | | | | |
| Capital Expenditure | 12.24 | | | | | | |
| Operating Expenditure | | 1.02 | 0.84 | 1.86 | 0.77 | 0.71 | 1.03 |
| Cash flow From Operations | | (0.42) | 2.10 | 5.21 | 1.29 | 0.39 | 0.73 |
| Cash Surplus/(Deficit) | | (0.42) | 2.10 | 5.21 | 1.29 | 0.39 | 0.73 |
| **Profit and Loss** | | | | | | | |
| NIBIAT +/- | | 1.15 | 0.28 | 0.95 | 0.38 | 0.36 | 0.58 |
| **Balance Sheet** | | | | | | | |
| Avg Capital Employed | | 0.78 | 0.66 | (2.38) | (4.97) | (5.44) | (5.59) |

**Section 9: Disclosure**
Disclosures, if required, will be done in line with existing Group and SPDC policies and guidelines.

**Section 10: Financing**
All payment obligations under the Soku CHA will be met from SPDC's own cash flow.

**Section 11: Taxation**
There are no unusual taxation features.

**Section 12: Key Parameters**
This Investment Proposal seeks approval for additional $15.96mln (Shell Share) for operating expenses (NLNG condensate quality degradation surcharge and Soku condensate handling tariff payments) over and above the $12.24 (Shell Share) earlier approved for provision of the condensate spiking facilities. This sum relates to NLNG handling of daily injection of circa 20,000 barrels of stabilised condensate from Soku Gas Plant into the GTS-2 pipeline, for recovery, processing at NLNG Slugcatcher in Bonny and redelivery to SPDC JV's BOGT.

**Section 13: Signatures**

*Supported by:*

.....

Peter Robinson

*VP Commercial, NBD Sub-Saharan Africa*

*Date ..../..../....*

*For Business Approval:*

…….

*Bernard Bos*

*VP Finance, Africa*

*Date ..../..../....*

*Initiator:* _____

*Ade Dare*

Date …/…./….

**APPENDIX**

**Economic Assumptions**
**Base Case**

- Condensate was taxed as oil under PPT
- Condensate price of US$70/bbl RT 11
- Applicable price differentials for SV, RV and HV applied
- Tariff charge of US$ 2.54/bbl MOD
- Condensate Handling Agreement (CHA) till 2012
- Ullage availability in the GTS-2 line
- ARPR 2010 variable OPEX applied
- NDDC levy 3% of total expenditure
- Education Tax of 2% assessable profit.

**Full life cycle**

- 50/50 cost estimates of facilities treated as Capex, while tariff and degradation claim are considered Opex
- Condensate was taxed as oil under PPT
- Condensate price of US$70/bbl RT 11
- Applicable price differentials for SV, RV and HV applied
- Tariff charge of US$ 2.54/bbl MOD
- Condensate Handling Agreement (CHA) till 2012
- Ullage availability in the GTS-2 line
- ARPR 2010 variable OPEX applied
- SPDC Generic fixed OPEX for new facilities was used.
- NDDC levy 3% of total expenditure.
- Education Tax of 2% assessable profit
- 10% of total project RT CAPEX assumed as abandonment cost in

**Sensitivities were carried out to show the impact of**

1. Low and high Opex.
2. 1.5% cost mark up due to BVA (Bench marked verified and approved) issues.
3. CHA extension to 2018 (but with a tariff of US$2.54/bbl RT 11).
4. The project's full life cycle (up to 2012 which is the expiration of the current agreement).

**Main Features of the Emergency Condensate Injection Agreement**

1) SPDC JV surcharge for NLNG Plant condensate export quality degradation pegged at circa $16.82m. This exposure ended in April 2010, at renewal of NLNG's annual condensate off-take contracts, using revised quality specifications that factored in the effect of SPDC Soku heavy condensate injection.
2) Subject CHA will take retroactive effect from October 2009 and run for 3 years, with option to renew by mutual agreement of the Parties. Within this initial timeframe SPDC is expected to come up with a permanent solution for evacuation of its field condensate.

3) Current agreement is for the injection and handling of up to 20,000 barrels of condensate per day with option for an additional 10,000 barrels per day (at the sole discretion of NLNG).
4) NLNG's tariff offer for handling, processing and transportation using own 6" line between NLNG Industrial Area and SPDC's BOGT was negotiated downwards from $3.51 to $2.54 per barrel of stabilised condensate.
5) DPR and NAPIMS support for the Condensate Injection Project was conditioned on retention of title to the condensate volumes by SPDC JV (prohibiting export sale via NLNG).
6) Temporary Allocation meters (instead of the statutory fiscalised Custody Transfer type) are currently in use at the Injection point in Soku Gas Plant whilst NLNG Mass Balance and Tank Dipping Procedures (approved by DPR) are used to account for volumes returned from NLNG facilities into export stock at BOGT. This accounting deficiency has prompted DPR to request a technical audit visit of the subject facilities.
7) Monthly differences between injected and recovered/re-delivered condensate volumes are offset via routine operational reconciliations.
8) Revenues due NLNG for the injection scheme are to be offset against SPDC JV regular monthly gas invoices and thus require no budgeting and additional funding.

**Benefits Realised:-**

1) Restored gas supply from Soku Gas Plant after 18 months of closure and under safe operating conditions.
2) Reduced condensate theft, fire outbreaks and bunkering incidents around Soku and environs.
3) Resulted in cost reduction, ie line repairs and the associated hazards.
4) With Soku gas supply restored and Gbaran Gas Plant started up, SPDC is for the first time, in a position to meet its 1,941MMscf/d gas supply commitment to NLNG Trains 1 -6 Agreement.

**Challenges :-**

1) Observed effects of enhanced condensate recovery on the API quality of the mix Bonny light crude is being monitored and managed.
2) Management of planned DPR Audit visit vis-a-vis making a case for not spending $10mln (SPDC cost estimates) on the installation of fiscal meters on this temporary evacuation scheme (whilst option for a permanent solution is being evaluated).
3) Attracting capital funding to execute expected permanent condensate evacuation solution may become a challenge in the face of competing alternative uses for scare funds (re UI Cost Ambition).
4) Success of Soku experiment has put NLNG under pressure to accommodate other JV Suppliers' similar condensate injection, recovery and processing proposals.

**Table 5 : Soku Condensate actual Injection into NLNG Facilities (bbls)**

| MONTH | VOLUME | NO. DAYS | DAILY AVERAGE |
|---|---|---|---|
| Oct-09 | 118,427 | 31 | 3,820 |
| Nov-09 | 364,966 | 30 | 12,166 |
| Dec-09 | 190,725 | 31 | 6,152 |
| Jan-10 | 95,377 | 31 | 3,077 |
| Feb-10 | 451,926 | 28 | 16,140 |
| Mar-10 | 512,672 | 31 | 16,538 |
| Apr-10 | 407,536 | 30 | 13,585 |
| May-10 | 463,173 | 31 | 14,941 |
| Jun-10 | 521,433 | 30 | 17,381 |
| Jul-10 | 569,932 | 31 | 18,385 |
| Aug-10 | 584,461 | 31 | 18,854 |
| Sep-10 | 382,500 | 30 | 12,750 |
| Oct-10 | 254,204 | 31 | 8,200 |
| Nov-10 | 447,480 | 31 | 14,435 |
| Dec-10 | 305,982 | 31 | 9,870 |
| Jan-11 | 264,550 | 31 | 8,534 |
| **TOTAL** | **5,935,344** | **489** | **12,138** |