

# The Shell Petroleum Development Company of Nigeria Limited

## Internal Investment Proposal

### Summary Information

Directorate	Major Projects and Engineering 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\$ 24.17mln Shell Share, MOD, 50/50 (US\$ 80.58mln 100% JV)			
Project	Pre-FID for Trans Niger Pipeline (TNP) Loop Project			
Main commitments		<b>US\$ Mln 50/50</b>		
	<b>Description</b>	<b>100% JV</b>	<b>Shell Share</b>	
	FEED	0.24	0.07	
	Survey (As-Built, Land / River)	1.40	0.48	
	Land Acquisition	0.61	0.15	
	SCD / ESHIA	0.52	0.13	
	PMT	0.81	0.24	
	(BP09) <b>Sub Total</b>	3.58	1.07	
	Line pipes Procurement	77.00	23.10	
	<b>Total</b>	<b>80.58</b>	<b>24.17</b>	
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 and / or the existing shareholder facility. Formal JV partners’ approval will therefore be obtained.			
Summary cash flow	Cost only Project. Cash Flow chart not applicable.			
Summary economics	Summary economics*	NPV (USD mln)	RTEP (%)	VIR7%
	Pre-FID	-3.56	NA	NA
	Full Project Scope (Cost only)	-39.34	NA	-0.26

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

This investment proposal seeks organizational approval for the funding of US\$24.17mln Shell share (US\$80.58mln 100% JV) to facilitate the execution of Pre-FID activities required for TNP Loopline Project. Due to protracted Ogoni crisis, SPDC freedom to operate and gain operational access to Bomu – Bonny section of the existing TNP trunk lines was threatened. Consequently, the statutory routine maintenance activities on the 24” and 28” legs of the TNP could not be executed since 1993. The proposed TNP Loopline Project will ensure SPDC continuous freedom and license to operate and enable the evacuation of over 460 Mbpd of current land east area production to Bonny terminal by 2014 and therefore improve the reliability of the pipeline system.

The objectives of executing Trans Niger Pipeline Project are to:

- To secure the evacuation of 460 Mbpd (gross) of current Land East production to Bonny Oil & Gas Terminal by providing an alternative route for the Oghale – Bonny section of the TNP which has outlived its design life, inaccessible for maintenance and has poor integrity status.
- Improve Trans Niger Pipeline technical integrity via system reliability enhancement.
- Overcome the production constraints in the TNP due to progressive de-rating of the TNP and its associated environmental risks.
- Provide ullage for developments from Gbaran Ubie, and thereby ensure gas supply to NLNG.
- Provide easy access maintainability, freedom to operate (FTO) and License to Operate (LTO).

The Trans Niger Pipeline Loopline (TNPL) Project was identified early 2007. An opportunity framing workshop was held on the 17<sup>th</sup> August 2007. A project initiation note passed DG-1 1<sup>st</sup> of April 2008. This was followed by project reframing which was done 17<sup>th</sup> April 2008. The project VAR2/3 was held from 15<sup>th</sup> – 17<sup>th</sup> of September 2008. While a DG 3 for the project was held on 26<sup>th</sup> May 2009. Front End Engineering Design (FEED) has been completed on 30<sup>th</sup> April 2010. Detailed Engineering Design is to commence in 2010 and will be concluded by End Q2 2011.

Apart from the BP09 provision (of \$3.582mln 100% JV) for 2010, there is additional fund required as part of Pre-FID IP. This is the cost of procuring line pipes and induction bends. The amount, US\$23.10mln Shell share (US\$77.00mln 100% JV) is part of the US\$15.00mln Shell share (US\$50.00mln 100% JV) reflected in 2011, but it is expedient to place an order for the line pipes and bends before GIP is approved, it is proposed that a notional budget be set up to capture this Pre-FID fund as CAPEX.

The line pipes procurement order will be place with SCC mills in Abuja, in line with the Nigerian Oil & Gas Industry Content Development (NOGICD) act.

The line pipes and induction bends will be used in pipeline replacement campaign program East & West, which is currently in the maturation funnel, should the TNPL fail to receive FID approval.

### **Project Scope:**

The activities covered by this proposal are consistent with the latest revised plan to mature the project to VAR4 in Q1, 2011 and FID in Q3, 2011. The cost estimate of \$24.17mln Shell share for pre-FID scope essentially covers post VAR3 activities to further define the Trans Niger Pipeline Loopline Project that include FEED, and part of Detailed design, EIA, R.O.W Survey/Land acquisition.

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

Description	2010	2011	2012	2013	2014	2015	Total 100% JV	Total Shell Share
Pre-FID	53.58	27.00	0.00	0.00	0.00	0.00	80.58	24.17
Post-FID	0.00	23.00	198.00	200.00	120.00	5.00	546.00	163.80
Total	53.58	50.00	198.00	200.00	120.00	5.00	626.58	187.97

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

Trans Niger Pipeline Loopline Project is an integrity assurance project that will ensure SPDC continual LTO for the greater Port Harcourt fields. In view of the fact that routine maintenance has not been allowed in the past seventeen years due to socio-political crises on the sections of existing TNP that goes via Bomu axis (within Ogoni land), its integrity status has remained uncertain. However, evidence gathered from failed spots/sections in the past, limited inspection and evaluation has led to line pressure de-rating and evidence of progressive loss of containment integrity. There is the likelihood therefore of a catastrophic failure of the line at anytime besides the fact that the line has outlive its design life and has known poor integrity issues.

In the event of a failure, this would result in deferred oil volumes and loss of revenue over a three-year re-construction period. This delayed monetization of the crude oil volume is the value at risk, which is to be gained from the TNP Loop Project.

The proposed loopline therefore seeks to bypass Ogoni land as much as possible to forestall and mitigate impending HSE issues that are associated with the existing legs that go through Bomu. The HSE risks to avoid include environmental pollution, explosions/fire, fatalities and unending litigations.

This project particularly helps in securing liquids export from Gbaran-Ubie thereby ensuring gas export to NLNG in addition to other 3<sup>rd</sup> parties' production and Okoloma liquids.

### **Summary Economics**

The Pre-FID economics of the TNP Loop project was evaluated as a cost only with the 50/50 level II cost estimate treated as OPEX. It is expected that the full project IP would be evaluated as CAPEX after final investment decision. However, a sensitivity view of CAPEX on the base case has been shown. The TNP Loop project is based on the premise to secure the evacuation of current Land East production to Bonny Oil & Gas Terminal. And to also secure the supply of Gas to NLNG from Gbaran Ubie and Okoloma Gas plant.

Additional sensitivities were carried out on 1.5% Project cost mark up due to BVA (benched marked verified approved ) issues and the project full life cycle 50/50 level II cost estimate which was treated as a Capex investment. See table 2 below for details.

The value at risk where if this project was not executed at all, as well as a 3-year delay in execution were also evaluated. The net of the two shows the incremental benefit of early execution. See Chart 2 below.

**Table 2: Economics Grid - Pre-FID**

PV Reference Date: 1/7/2010	NPV (S/S \$ mln)		VIR	RTEP	UTC (RT \$/boe)		Payout- Time (RT)	Maximum Exposure (RT)
Cash flow forward from: 1/1/2010	0%	7%	7%	%	0%	7%	yyyy	\$mln
<b>Base Case</b>								
SV (\$50/bbl RT 10)	-3.64	-3.56						
RV (\$60/bbl RT 10)	-3.64	-3.56	NA	NA	NA	NA	NA	US\$ 3.64 mln (2011)
HV (\$80/bbl RT 10)	-3.64	-3.56						
<b>Sensitivities (using RV)</b>								
Pre-FID Cost treated as Capex		-5.85	-0.25	NA	NA	NA	NA	US\$ 16.34 mln (2011)
1.5% Pre-FID cost mark up due to BVA issues		-4.74	NA	NA	NA	NA	NA	NA
Full Project Scope (Cost only)		-39.34	-0.26	NA	NA	NA	NA	US\$ 96.49 mln (2014)

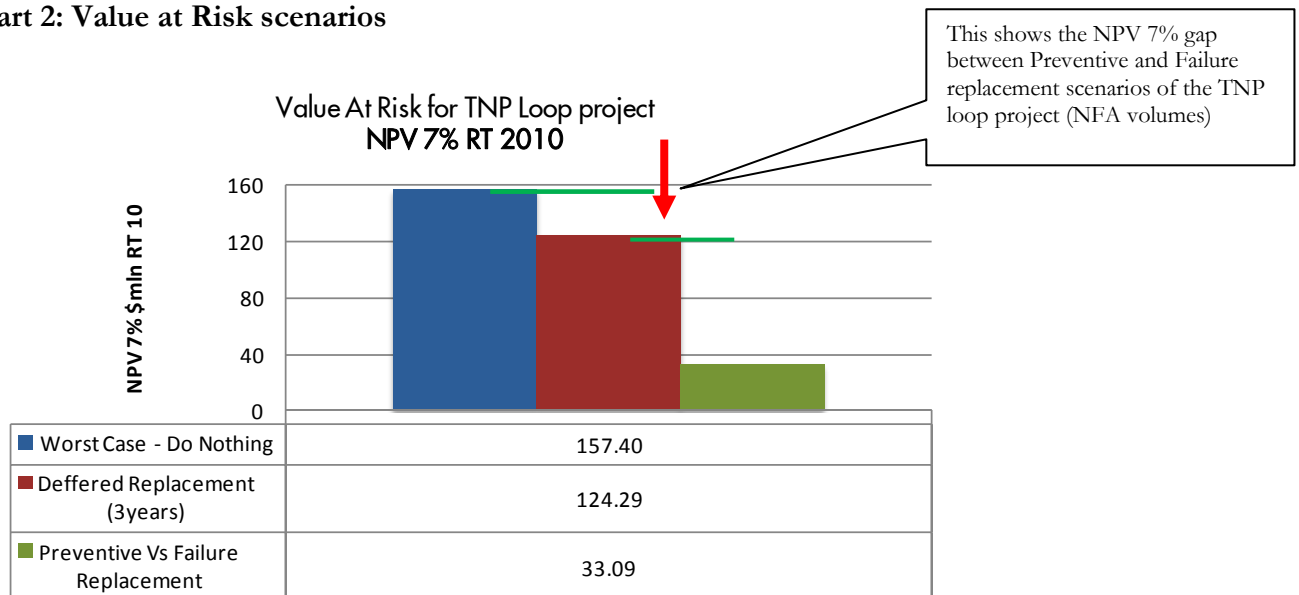
### Key project parameter data ranges (Shell Share)

	Unit	Bus Plan	Low	Mid	High	Comments
Capex (MOD)	US\$ mln	NA		NA	NA	
Opex (MOD)	US\$ mln	24.17	NA	24.17	NA	
Production volume	Mmbbl	NA	NA	NA	NA	
Commission Date	mm/yyyy	NA	NA	NA	NA	
Production in first 12 months	Mmboe	NA	NA	NA	NA	

In the situation where this project is deferred to a later time (three years), the Preventive option shows significant savings to replacement option at NPV 7% RT 10 \$33.09mln Shell Share.

At the worst case scenario, where this project is not undertaken at all, the Value-at-risk is NPV 7% RT10 \$157.4mln Shell Share which represents the NFA oil volume (till 2029)

**Chart 2: Value at Risk scenarios**



### Economics Assumptions

The following assumptions are applied:

#### Base case

- Pre-FID Cost treated as Oil Independent Opex.
- NDDC levy 3% of total expenditure
- AGFA fiscal incentive applied.

### **Full Project Cycle**

- Full project 50/50 cost estimates treated as capex
- NDDC levy 3% of total expenditure.
- AGFA fiscal incentive applied.
- 10% of total project RT CAPEX treated as abandonment cost.

### **Value At-Risk**

- Oil PSV of \$60/bbl RT10
- SPDC Generic Oil variable of \$0.5/bbl was applied
- Fixed opex derived from Facility ARPR Dec. 2009
- Education Tax of 2% oil assessable profit.
- Facility life span of 20years
- NDDC levy 3% of total expenditure

### ***Section 3: Risks, opportunities and alternatives***

<b><u>RISKS</u></b>	<b><u>MITIGATION MEASURES</u></b>
<b>Technical / NCD</b> – Implementation of the Nigerian Oil & Gas Industry Content Development (NOGICD) act. <ol style="list-style-type: none"><li>1) In-country design capability is limited; and this can result in delay of the TNP Loop project schedule.</li><li>2) The use of HSAW linepipes which SCC mill in Abuja produces has no sufficient track record in hydrocarbon transportation when compared with LSAW formed pipes.</li></ol>	<ol style="list-style-type: none"><li>1) SciN FEED office will undertake TNPL Project Front End and Detailed Engineering design for early procurement / fabrication.</li><li>2) Project team is following up with discipline focal points in Shell reconfirm viability the TNPL project. Also with SCC to sort out the capability to cope with a large order.</li></ol>
<b>Project Schedule:</b> TNPL project First Oil Date P (10/90) is January 2014 exploring options for acceleration. P (50/50) First Oil Date is Q2 2015. Niger Delta security situation may impact the delivery dates.	Project strategy will explore steps to achieve the first oil date.
<b>Economic, Commercial &amp; Statutory</b> – Any late placement of execution contracts due to delays in JV approvals, statutory approvals / licences – EIA, PTS, OPL will impact start of execution with attendant impact on the project delivery date.	Regular engagement with NNPC – NAPIMS / NCD and other JV partners, DPR, NIWA etc.
<b>Organizational</b> - Resourcing of the Major Projects Team UIG/T/PP managing project.	Two Pipeline Engineers have been identified to join the project team during Q2 2010.
<b>Political</b> – General election is scheduled to hold in the country early next year 2011. This could impact the collation of data & Land acquisition due to increase restive nature of the youth during this period.	Continuous Community Engagement
<b>Integrity</b> – Integrity of TNP line (Bomu – Bonny Axis) over 17years span is suspect, since access to carry out integrity checks or maintenance has been denied.	Fast tracking of the TNPL project will forestall any eventualities, which may result in integrity issues.

<p><b>HSE</b> – Health and safety risks based on HSE-MS hazard registers.</p> <p>Implementation of Nigerian Oil &amp; Gas Industry Content Development (NOGICD) act is now a challenge for all projects to be executed henceforth.</p> <p>Delay in the issuance of EIA permit for the project execution phase commencement.</p> <p>Incessant illegal bunkering activities at the river banks using the block valve station, leading to catastrophic fire incidents and enormous fatalities.</p> <p>HSE Risks associated with pipeline operation (e.g. surge in pressure and stuck pigs during operation).</p>	<p>Measure will be carried out to ensure HSE risks are maintained at ALARP.</p> <p>Contractor selection and management for execution of the work will follow the EP 2005-0110 Contractors HSE Management standard to ensure continuous HSE performance improvement.</p> <p>Environmental regulators and relevant government agencies will be engaged during ESHIA activities for steer and approval of the project with complete integration of health, sustainable community development and environmental impact assessment and mitigation. Compliance to Group Minimum Health Management Standard (MHMS) and Human Factor Engineering (HFE) requirement will also be monitored.</p> <p>A Quantitative Risks Workshop will be organized to secure approval for Block Valve Station (BVS) deletion. DPR will be fully represented in the workshop.</p> <p>These risks have been identified during HAZID workshop. Mitigating measures have been proffered during HAZOP workshop.</p>
<p><b>Security</b> – The TNPL route transverse a lot of communities. As such, community interface, HSE and security issues are particularly significant on this route. This was heralded by the continuous hostage taking, armed attacks and attacks on the oil export pipeline and bunkering activities. Escalation in Niger Delta security situation can also impact this commitment.</p>	<p>Continuous community / Local/State governments' engagement. Allowance will be made available for community assistance/development program within the project costs.</p> <p>Recent Amnesty program declared by Federal Government, since Q4 2009, has brought relative peace to the volatile Niger Delta region.</p>
<p><b>Social Risks-</b>  <b>MOSSOP/Ogoni Issue (Oghale Manifold):</b>  Any E&amp;P activities in Ogoni by SPDC will result in a negative media backlash for SPDC.</p> <p><b>Non-Deployment of GMoU in Ogoni:</b> GMoU is SPDC's interface model with cluster communities. Ogoni community will likely clamour for GMoU deployment in their area as part of FTO assurance.</p> <p><b>Alignment with Greater Port-Harcourt (GPH) Master Plan:</b> Proposed routes might conflict with GPH master plan which will necessitate re-route and design mid-way into project execution.</p>	<p>Top level engagement with Rivers State Government to lead stakeholder/issues management in Ogoni in line with SPDC current issues management framework for Ogoni (Governor/SPDC MD).</p> <p>Project specific I-GMoU model will be deployed in Ogoni to manage interface with cluster communities.</p> <p>Project will latch on to on-going engagement with GPH on the AGBADA DOMGAS pipeline route to ascertain any impact on selected TNP route.</p>

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

NAPIMS and DPR were engaged severally and invited to project assurance review (PAR 2, 3), contract strategy workshop and VAR 3 audit exercise.

The existing corporate structure and arrangements of SPDC-JV with SPDC as operator will be used as the vehicle for the investment and operations. Meanwhile, an SPDC Decision Review Board (DRB) will continue to advise.

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

Functional support for the proposal is provided by Finance (EPF, GPB, FCG), Treasury (FT), Tax (FX), Legal (LG) and Contracting & Procurement. (CP). The proposal has the strong support of the Nigerian government. In addition to supporting SPDC's license to operate, the project contributes to Shell's sustainable development efforts through improvement of Nigerian power generation and thus to economic development. Furthermore, the project directly enables the monetization of Shell equity gas.

#### **Sustainable Community Development**

A Social Performance & Community Affairs Plan is being developed for the project. The project will utilize the GMoU structure for interface management with about 44 communities in project area.

In line with Act 58 of 1988 an EIA process has commenced for the entire TNPL Route, with the collection of Biophysical, Social & Health data over two seasons before the end Q1 2011.

Continuous engagement of the community, including resolution of any legacy issues in impacted areas, shall continue in line with the new SCD principles / rules with regards to ensuring effective community engagement/participation, to guarantee Freedom to Operate (FTO) and eliminate community interface related to down time. All aspects of the project are being executed in line with the Statement of General Business Principles and other SPDC policies.

A stakeholder management framework will be developed to manage peculiar project interface in Ogoni land.

#### **HSE and Security Management**

The HSE performance for Trans Niger Pipeline Loopline (TNPL) Project will be consistent with SPDC's HSE targets. Since it is a swamp / offshore location, stringent HSE rules would apply, especially swimming and medical fitness of every personnel to be deployed. All water borne operations shall be carried out in accordance with SPDC's guidelines and policies. All land and marine transport activities shall comply with the procedures and standards set out in The Shell Transport Management system (LT-MS) Manual Doc. No SPDC 2000-082.

Site security management plan covering movement of materials, personnel and worksite will be in place and signed off.

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

The Major Projects Team UIG/T/PP is managing the project. This project has been matured in line with the Opportunity Realization Process (ORP) and has undergone all the mandatory Value Assurance Reviews (VARs). An Estimate and Schedule Review was carried out in April 2010. Key decision gates have been reviewed by SPDC's main Decision Review Board and the Project Manager appointed. Value delivery will be ensured through regular (PERT) reviews and challenge from EP-Projects, SGSI and various Performance reviews within the Major Projects Team organization in SPDC.

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

The commitment of USD1.07mln Shell share is covered by the 2009 JV Base Budget. Additional \$23.10mln Shell share will be committed towards the procurement of line pipes.

### ***Section 8: Group financial reporting impact***

The financial impact of this proposal on Shell Group financial is as outlined in the table below-

US\$ mln	2010	2011	2012	2013	2014	Post 2014
<b>Total Commitment</b>	16.07	8.10	0.00	0.00	0.00	0.00
<b>Cash Flow</b>						
Pre-FID Expenditure	16.07	8.10	0.00	0.00	0.00	0.00
Capital Expenditure	0.00	0.00	0.00	0.00	0.00	0.00
Operating Expenditure	0.48	0.24	0.00	0.00	0.00	0.00
Cash Flow from Operations	(4.73)	(0.09)	1.16	0.00	0.00	0.00
Cash Surplus/(Deficit)	(4.73)	(0.09)	1.16	0.00	0.00	0.00
<b>Profit and Loss</b>						
NIBIAT +/-	(2.43)	(1.23)	0.00	0.00	0.00	0.00
<b>Balance Sheet</b>						
Average Capital Employed	1.15	1.73	0.58	0.00	0.00	0.00

### ***Section 9: Disclosure***

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

### ***Section 10: Financing***

The project will be funded with JV funding and Shell share capital expenditure will be met by SPDC's own cash flow, as other major investments in SPDC. Formal JV partners' approval is already obtained to commence project.

### ***Section 11: Taxation***

The income tax from the project would be in accordance with Petroleum Profit Tax Rate and relevant income tax applicable.

### ***Section 12: Key Parameters***

Consideration is required of the soundness of the expenditure commitments for the following:

- Pre-FID commitment for the Trans Niger Pipeline Project requiring the amount of US \$24.17mln (Shell share).
- As the project is still at its pre-FID stage and pre-payment for the line pipe procurement will be required, we seek finance approval to raise a notional budget /charge capex WBS for the line pipe costs US\$23.10mln Shell share (US\$77.00mln 100% JV).



***Section 13: Signatures***

This Proposal is submitted to SPDC Technical OR Production Director OR GM Finance for approval.

Supported by:

.....

*Bernard Bos*

FUI/FB

Date ....../....../....

or

Supported by:

.....

*Bart Lismont*

UIG/T

Date ....../....../....

*Initiator:*

\_\_\_\_\_

*Amoo Oladele*

*(UIG/T/PP)*

Date .../....../....