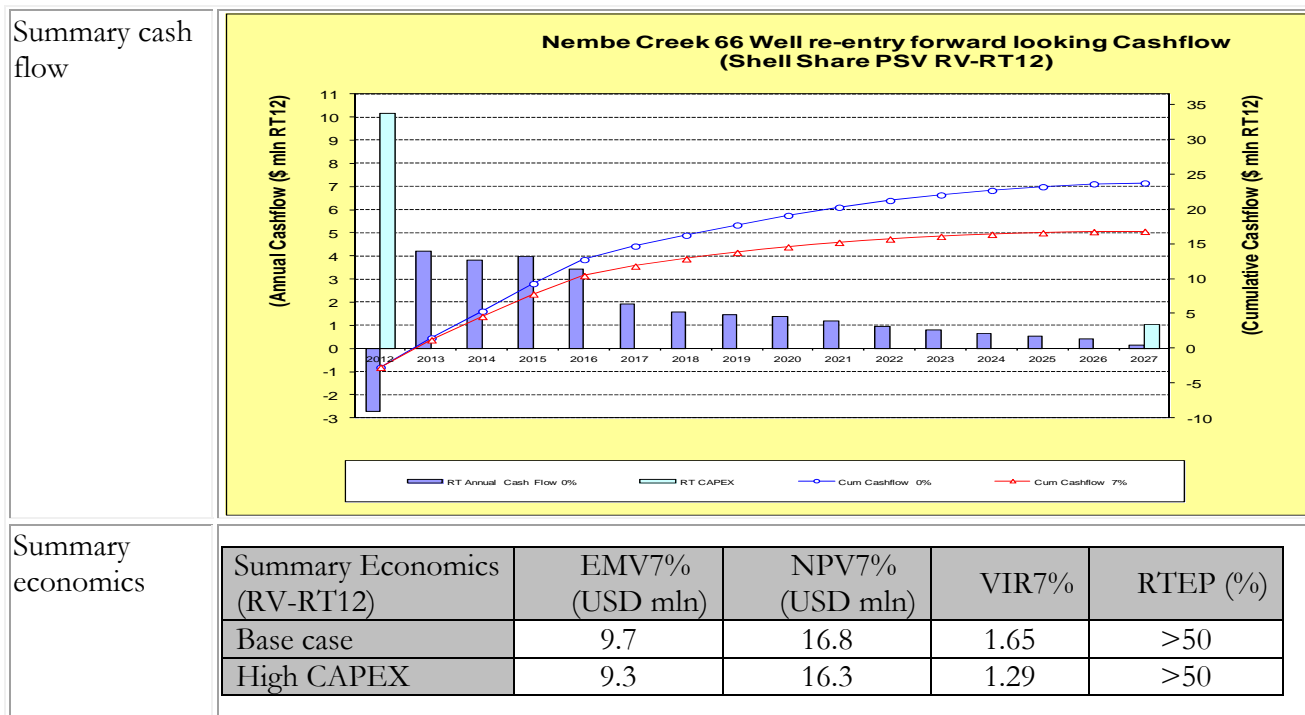


# The Shell Petroleum Development Company of Nigeria Limited

## Group Investment Proposal

### Summary Information

Business unit and company	Shell Petroleum Development Company of Nigeria Limited (SPDC)			
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 Corporation (NNPC: 55%), Total E & P Nigeria Limited (TOTAL: 10%), Nigeria Agip Oil Company (NAOC: 5%) in SPDC-JV			
Business or Function	E & P			
Amount	USD 10.42 mln Shell Share MOD, 50/50 (USD 34.74 mln 100% JV)			
Project	Nembe Creek 66 Well re-entry			
Main commitments	<b>50/50 MOD</b>	<b>100% JV (US\$'mln) MOD</b>		<b>Shell Share (US\$'mln) MOD</b>
	Description	Project Headline @ 2007 GIP	Project Headline @ 2012 GIP Update	Project Headline @ 2007 GIP
	Dredging/ Wells Location Preparation	1.20	1.23	0.36
	Engineering (Flowlines, and Hookup)	0.67	3.28	0.20
	Wells (Development drilling & completion)	18.2	29.38	5.46
	Sub Total (CAPEX MOD)	20.07	33.89	6.02
	SCD (OPEX)	0.45	0.85	0.11
	Total Cost	20.52	34.74	6.13
				10.42
Reserves/ Resources	This project will mature a total volume of 3.36 MMboe SS, ref 31.12.2011 ARPR (of which 0.84 MMboe SS was booked as 2P in ARPR 31.12.2011 for F7000K development interval). The remaining 2C volume (2.52 MMboe SS) will be matured to 2P in 2013 post successful appraisal of the F6000K reservoir.			
Production	Nembe Creek 66 project's base case forecast has a startup date of December 2012 with an initial incremental oil rate of 0.29Mbopd SS (0.97 Mbopd 100%) and will peak in 2013 at oil production rate of 1.06 Mbopd SS (3.52 Mbopd 100%) with associated gas production of 1.33 MMscf/d SS (4.42 MMscf/d 100%) thus increasing the effective utilization of the new NCTL pipeline and contributing to SPDC's gas supply to NLNG.			
Source and form of financing	This investment will be financed with JV funding, so formal JV approval will be required. The Shell share of the investment will be financed by SPDC's own resources.			



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

This revised Investment Proposal seeks support/approval for headline size of US\$10.42 mln (Shell Share, 50/50 MOD), required to re-enter Nembe Creek 66 well in Q4 2012 to drill, appraise and complete the well as a deviated oil producer.

This deviated oil producer is proposed in the un-drained K-block to appraise the F6000 and develop the F7000 reservoirs in the eastern flank of the structure. The well will develop 3.36 MMboe reserves at an initial off-take rate of 1.06 Mbopd (SS).

Nembe Creek 66 re-entry is a continuation of the drilling of the appraisal/development targets which was suspended at surface hole depth (6406 ftah) for budget constraints in 2002. A subsurface re-evaluation was carried out to optimize the well leading to a revised well proposal for which approval from JV Partners is being obtained. The current headline size for the project is estimated at US\$10.42 mln Shell Share (US\$ 34.74 mln 100% JV) compared to the US\$6.13 mln Shell Share (US\$20.52 mln, 100%) approved in 2007 GIP. This GIP update is necessitated due to project cost increase resulting from higher rig contract, revision of well scope/design and facility costs.

The well is planned to be re-entered in August 2012. The full scope of this well re-entry consists of drilling (deepening), completion and tie-in to production facilities. The drilling materials are all stock items except the Permanent Down-Hole Gauge (PDHG) and the V-monitors for which orders have been placed in line with the requirements of Global Well Delivery Process. The first oil is expected in December 2012.

Production will be evacuated through Nembe Creek Flowstation-4, while the associated gas will be gathered at the existing Associated Gas Gathering (AGG) facilities for delivery to Soku Gas Plant. The existing Right of Way (RoW) will be used for laying the flow lines, thus optimising footprint.

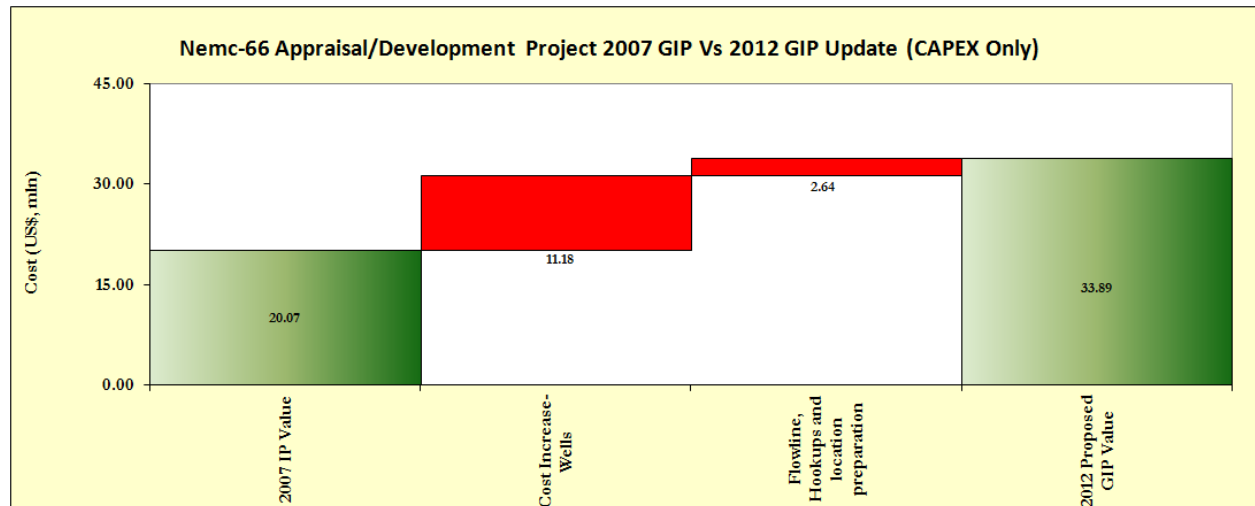
### Section 2: Value proposition and strategic and financial context

This project will contribute incremental 2P reserves of 3.36 MMboe (SS) to SPDC resource volumes. Successful appraisal of the eastern flank/down dip extension of the F6000K and development of the F7000K reservoirs provides opportunity for maturation of additional 9.48 MMstb (SS).

## Cost Increase/Market Situation

The CAPEX headline size for this project increased from US\$20.07 mln (JV 100%) in the last GIP approved in 2007 to US\$33.89 mln in this GIP update. The cost increase is attributed to well design change, new rig contract and facility cost increase. The chart below reflects details of the key changes.

Figure 1: Nembe Creek-66 Waterfall: Cost movement from Old GIP Headline to New GIP (CAPEX only)



## Summary economics

The Nembe 66 re-entry project was evaluated by assessing the Expected Monetary Value (EMV) for the appraisal drilling. The evaluation was carried out on a forward-looking basis using the 50/50 level III cost estimates, the production forecast and the Probability Of Appraisal Success (POAS).

The EMV was determined using the Palisade Precision Tree software suite, which captured the range of outcomes for the key decisions. The EMV7% of the appraisal decision is US\$ 9.7 mln which indicates positive outcome of the appraisal.

The details of the decision tree are presented in Appendix 1.

Further analysis was carried out on the probable outcome of finding both oil and gas which forms the basis for the development of Nembe 66 well. The evaluation was done on a forward looking basis using the 50/50 level III cost estimates and the well production forecast. The base case was evaluated at PSV-RV-RT12.

Sensitivities were carried out on the base case to assess the values of the project in the following circumstances:

- High CAPEX,
- High Reserves (P10),
- Low Reserves (P90),
- Project with ring fencing,
- 1-Year production delay,
- Project funded under MCA
- 1.5% cost mark-up due to BVA issues (provision for costs dispute by NAPIMS),

Economics result presented in Table 2 shows that the project is very robust at all PSVs.

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

PV Reference Date: 1/7/2012	EMV (S/S \$ mln)	NPV (S/S \$ mln)		VIR	RTEP	UTC (RT \$/boe)		Payout-Time (RT)	Maximum Exposure (RT- AT)
Cash flow forward from: 1/1/2012	7%	0%	7%	7%	%	0%	7%	(yyyy)	\$mln (yyyy)
<b>Base Case</b>									
SV (\$50/bbl & \$1.30/mmbtu RT12)	6.2	16.1	11.2	1.10	>50	4.1	5.1		
RV (\$70/bbl & \$1.74/mmbtu RT12)	9.7	23.7	16.8	1.65	>50	4.1	5.1	2013	8.1 (2012)
HV (\$90/bbl & \$2.10/mmbtu RT12)	13.1	31.0	22.2	2.18	>50	4.1	5.1		
<b>Sensitivities (using RV)</b>									
High CAPEX (+24%)			16.3	1.29				2013	10.2 (2012)
High Reserves (P10)			21.0	2.06				2013	8.1 (2012)
Low Reserves (P90)			13.9	1.37				2014	8.6 (2012)
Project with ring fencing			16.6	1.64				2013	6.9 (2012)
1-Yr Production delay			15.6	1.53				2014	8.6 (2012)
Project funded under MCA			16.7	0.74					
1.5% cost markup due to BVA issues			16.3	1.52					

### Key Project Parameter Data Ranges (Shell Share)

Parameter		Unit	BP11 Provision	Low	Mid	High	Comments
Capex (MOD)		US\$ mln	11.09	8.90	10.16	12.64	BP11 figures normalised for IC costs
Opex (MOD) Project		US\$ mln	NA	0.22	0.25	0.32	SCD OPEX
Production Volume		mln boe	3.32	2.96	3.32	4.40	
Start Up Date		mm/yy	NA	Aug-13	Dec-12	NA	No plan for acceleration
Production in first 12 months		mln boe			0.4		

### Base case

- Oil PSVs of \$50/bbl @SV-RT12, \$70/bbl @RV-RT12 (base case) and \$90/bbl @HV-RT12 with appropriate offset applied.
- Gas sold to NLNG T1-6 @ NLNG T1-6 contract price.
- Oil taxed under PPT (PPT tax rate of 85%).
- Gas taxed under CITA with Associated Gas Framework Agreement (AGFA) incentive.
- ABCM OPEX provided by the project team.
- SCD OPEX provided by the project team.
- NDDC levy of 3% total expenditure.
- Education Tax of 2% assessable profit.
- GHV of 1150BTU/scf.
- Flare Penalty of \$3.5/Mscf was applied and is not tax deductible.
- Abandonment cost estimated at 10% of total project RT CAPEX.

### MCA Specific Assumptions

- All project costs on the MCA would be recovered through cost oil.
- Profit oil ceiling of 8% IRR on carried costs
- Oil PSVs of \$70/bbl @RV-RT12 with appropriate offset applied.
- OPEX and PMT not carried under current MCA arrangement.

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

#### Key risks, mitigation & opportunities include

The principal risks associated with this proposal, key mitigation measures and opportunities are as follows:

#### **3.1 Risks**

- **Social Performance/ Community Issues:** (which could threaten project execution).

##### *Mitigation*

Global Memorandum of Understanding (GMoU) is the corporate platform for managing community interface as well as delivering benefits to communities. Currently, SPDC has a functional steady-state GMoU covering the project area, Nembe City Foundation. FTO for the project activities will be secured through the GMoU CDB, with provisions for community employment and subcontracts. The social/non technical risks associated with the project will be mitigated in line with the HSSE&SP Control Framework by delivering a robust impact mitigation and stakeholder engagement plan. Contractors being proposed for the project execution will be required to submit an approved Community Affairs Plan that will guide their interface with the impacted communities in project area. In addition, adequate resources, including the active support of the host-Asset Community Relations Team and pro-active management of community issues will be deployed throughout the project duration.

- **Enabling Environment (Security, Sabotage, Political and Environment):** Hostage taking, existence of militant groups and threat of insurgency are realities in the Niger Delta especially in the swamp which could threaten project execution.

##### *Mitigation:*

With improvements in the Niger Delta security following Amnesty programme, it is envisaged that there will be a reduction in Community related NPT. Project specific security plan will be signed off by Security prior to commencement of site activities. Specific threats will be managed through the Security & Surveillance Centre (SIS) and communicated in good time to those that need to “Know” and “act”.

- **HSE:**

HSSE Hazards associated with this project will be identified and documented as part of the HSSE plan for the project. The effects on people, Assets, environment and reputation will be assessed.

##### *Mitigation:*

There will be an assessment of the risks of identified Hazards for Worst-Case Credible Scenarios using the RAM, and documented in the Hazards and Effects Register which will form part of the project specific HSSE Plan. Where Reasonably Practicable, hazards will be totally eliminated or adequately controlled where elimination is not possible.

- **Cost overrun** - The Level 3 budget estimate is in line with current reality (increase in rig cost as a result of new rig contract and escalated material costs).

##### *Mitigation*

rDtL initiatives and learnings from already completed Nembe Creek Phase 1 wells would be applied for value improvement.

- **Earlier than expected water breakthrough:** (resulting in reduced incremental oil recovery).

##### *Mitigation*

The downhole gauges will allow for real-time reservoir surveillance to optimise the offtake. The well has been placed as optimally as possible to reduce the risk of early water breakthrough.

- **Appraisal Outcome**

This appraisal/development well would evaluate the scope for recovery of F6000K and F7000K reservoirs with a combined expectation POS of 60% and POF of 40%. If the appraisal of F6000K reservoir indicates full gas bearing, the pilot hole will be plugged back and sidetracked optimally to complete on F7000K reservoir.

### **3.2 Opportunities**

- **Project Support:**

This project will yield new oil production and add to the total through put of the NCTL. The well will also be used to gather data for further development of F6000K and F7000K reservoirs.

- **Knowledge Sharing**

This project will provide a very good opportunity for the new well-site PEs to have requisite operations experience under the close supervision of their senior PEs and SDEs.

### **3.3 Alternatives**

Do nothing - Not recommended, as appraisal of the eastern flank/down dip extension of the F6000K and F7000K reservoirs provides opportunity for maturation of additional 9.48MMstb (SS).

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

This proposal is within the SPDC corporate structure and governance framework.

#### ***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 Wells, Finance, Treasury and Legal functions.

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

The execution of the project is managed through the Swamp East Field Development & Execution Team, Wells and Engineering Hub Teams in line with the SPDC organizational model. The Sustainable Development and Community Relations directorate is instrumental in creating the community relations that allow the team to operate. There will be regular progress report of the well delivery activities to Asset Development Manager, the Development General Manager and to the JV Partners. All significant reviews and follow up actions had been done in the Development and Engineering Teams. Following successful completion, the wells will be handed back to the Swamp East Production Operations Team.

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

This project has budget cover and is included in BP11 as well as the 2011/12 JV Programme. The revised Investment Proposal is in line with capital expenditure allocated to the Nembe Creek 66 appraisal/Development. The requested amount under this proposal covers the costs for drilling, logging, completion and hook-up of NEMC-66 well as well as SCD.

#### ***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	2012	2013	2014	2015	2016	Post 2016
Total Commitment	10.41	0.00	0.00	0.00	0.00	0.00
<b>Cash Flow</b>						
SCD Expenditure	0.25					
Pre-FID Expenditure						
Capital Expenditure	10.16					
Operating Expenditure	0.41	0.21	0.19	0.20	0.21	1.29
Cash flow From Operations	4.39	5.67	4.12	4.11	3.95	14.40
Cash Surplus/(Deficit)	-5.77	5.67	4.12	4.11	3.95	14.40
<b>Profit and Loss</b>						
NIBIAT +/-	1.27	3.76	3.45	3.66	3.22	13.23
<b>Balance Sheet</b>						
Avg Capital Employed	3.52	6.09	4.80	4.23	3.64	2.19

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

Material disclosures, if any, will be done in line with the Group Disclosure Guidelines.

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

This investment will be financed with JV funding, so formal JV approval will be required. The Shell share of the investment will be financed by SPDC's own resources.

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

No unusual taxation features.

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

The following are the main aspects of this proposal; Approval for the total revised headline size of US\$10.42 mln Shell Share 50/50 MOD. This is made up of US\$10.17 mln CAPEX and US\$0.25 mln OPEX.

### ***Section 13: Signatures***

This Proposal is submitted to SEPCiN-UIG for approval.

Supported by:

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**Bernard Bos**

**SEPA-FUI/F**

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

For Business approval:

.....

**Lismont Bart**

**SEPA UIG/T**

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

*Initiator:*

\_\_\_\_\_

*Roya Simon (UIG/T/DSSE)*

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

## Appendix 1: Nembe 66 well re-entry; Decision Tree

