

# 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 E & P Nigeria Ltd (TEPNG: 10%), Nigeria Agip Oil Company (NAOC: 5%) in SPDC-JV		
Amount	USD 11.14 million Shell share, MOD, 50/50 (USD 37.13 million 100% JV)		
Project	<b>Awoba FOD (Pre FID)</b>		
Main commitments		<b>Shell Share \$mln</b>	<b>100% JV \$mln</b>
	Long Lead Items	7.55	25.15
	Location Preparation & Land acquisition	3.32	11.06
	SCD (2.5% of total project cost)	0.28	0.92
	Total	11.14	37.13
Source and form of financing	Pending finalization of Alternative Funding (AF) arrangement with NAPIMS, this Pre-FID investment will be financed with JV funding and Shell share capital expenditure will be met by SPDC's own cash flow.		
Summary cash flow	Cost Only evaluation. Cash flow plot not applicable.		
Summary economics	Summary economics	NPV (USD mln)	RTEP (%)
	Base case	-1.6	NA
			VIR
			-0.23

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

This pre-FID Investment Proposal is required to secure funding USD 11.14 million Shell share (USD 37.13 million 100% JV) for the execution of Pre-FID activities required for the Awoba Further Oil Development (FOD) project.

The key business driver for this project is to arrest the observed production decline, through infill wells, in Awoba field. The selected Awoba FOD concept to address this, as described in the 2008 FDP, consists of drilling, completion and hook-up of 6 new oil wells to develop about 50 MMstb (expectation recovery) with an initial potential of 23.7 Mbopd.

The 6 planned wells are currently on the 2012 Short Term Drilling Sequence (STDWS) and will be drilled in a campaign with the first well to spud in Q1, 2013.

Produced oil and gas from the wells will be evacuated via the existing Awoba Flowstation. The evacuation strategy is to utilise the ullage at the facility.

**Table 1: Awoba FOD Pre-FID Scope-Phased Expenditure Table (MOD 100% JV)**

Description	2011	2012	Total
Long Lead Items (LLI's)	-	25.15	25.15
Land Acquisition (250m x 250m)	-	0.16	0.16
Location Preparation (6 locations)	-	10.90	10.90
SCD Expenditure	-	0.92	0.92
<b>Total</b>	-	<b>37.13</b>	<b>37.13</b>

*Mitigation plan (in case FID does not materialize in 2012 as planned):*

- **Long Lead Items (LLI's):** LLI's will be used for any of the below basket of projects:
  - a) Southern Swamp AG Solution plus FOD (SSAGS+) (FID planned for March 2012 {BP11}).
  - b) Nembe Creek D-sands FOD Phase 2 Project (FID planned for August 2012 {BP11}).
  - c) Awoba North West and Awoba NAG appraisal wells (to be drilled in Q4 2012 and Q2 2013 respectively).
  - d) Santa Barbara LOD Phase 2 (FID planned for March 2013 {BP11}).
- **Land Acquisition (250m x 250m):** Acquired land will be utilized whenever FID finally materializes.
- **Location Preparation (6 locations):** Planned activities and personnel will be deployed to the above mentioned basket of projects accordingly.
- **SCD Expenditure:** There is a GMoU in place in this area and this expenditure will act as a GMoU top up which will be effected just before the drilling rig moves in. Prior to rig entry to commence drilling activities, only minimal expenditure will be carried for stakeholder engagements with the various host communities.

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

These proposed development activity aligns with SPDC's oil production growth drive and also contributes to keeping the Nembe Creek Trunk Line (NCTL) and Soku Gas Plant full. Initial potential (sum total from the six wells) is about 23.7Mbpd with a peak production rate of about 15.0Mbpd taking into account surface facility constraints.

### **Summary Economics**

The Pre-FID of the Awoba FOD project was evaluated as cost only on a forward looking basis using 50/50 level II cost estimates. Details are shown in Table 2 below.

Further analysis was carried out to ascertain the value of the project's full scope when the project takes FID using the 50/50 level II full project cost estimates and the production forecast. The details are shown in Table 4 below.

The following sensitivities were carried out on the base case to show the impact of various scenarios on the value of the project.

- High and low CAPEX.
- Project with ring fence.
- 1.5% cost markup provision due to dispute by NNPC on Benchmark Verified and Approved (BVA) issues.
- Petroleum Industry Bill (PIB) House version 12.0; and a
- Tornado Plot.

Sensitivities were also carried out on the full project scope to show their impact on the project's value.

- High and low CAPEX.
- Project with ring fence (i.e. project without tax incentives).

**Table 2: Base Case: Awoba FOD Pre-FID Economics Grid (Shell Share)**

PV Reference Date: 1/7/2011	NPV (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
<b>Base Case</b>								
RV-RT (\$70/bbl RT11)*	-1.8	-1.6	-0.23	NA	NA	NA	NA	US\$ 6.79 mln (2012)
<b>Sensitivities (on base case)</b>								
High Capex (+ 25%)		-2.0	-0.22					US\$ 8.43 mln (2012)
Low Capex (- 15%)		-1.5	-0.25					US\$ 5.82 mln (2011)
Project with ring fencing		-10.5	-1.52					US\$ 11.77 mln (2017)
1.5% cost mark up due to BVA		-2.1	-0.29					
PIB (Version 12.0)		-4.1	-0.59					

Note: No revenue stream, hence SV-RT, RV-RT and HV-RT has same values

**Table 3: Awoba FOD Pre FID Key Project Parameter Data ranges (Shell Share)**

	Unit	Bus Plan BP11	Low	Mid	High	Comments
Capex (MOD)	US\$ mln	7.5	6.4	7.5	9.4	Provided in BP11
Opex (MOD)	US\$ mln	3.6	3.1	3.6	4.5	Provided in BP11
Production volume	Mmboe	NA	NA	NA	NA	
On-stream Date	mm/yyyy	Jan-13	NA	Jan-13	NA	

**Table 4: \*\*Awoba FOD Full Project Scope (Shell Share)**

PV Reference Date: 1/7/2011	NPV (\$/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)	84.4	46.7						
RV-RT (\$70/bbl RT11)	125.7	71.0	1.72	>50%	5.4	6.6	2014	US\$ 16.69 mln (2013)
HV-RT (\$90/bbl RT11)	168.6	96.3						
Sensitivities (on FLC)								
High Capex (+ 25%)		68.9	1.33					US\$ 21.62 mln (2013)
Low Capex (- 15%)		72.0	2.05					US\$ 13.75 mln (2013)
Project with ring fencing		69.6	1.69					US\$ 21.90 mln (2013)

**\*\*Awoba FOD full Project Scope summary:**

- Drilling and hooking up of 6 new wells (generating 12 new drainage points in 5 reservoirs)
- Utilize the existing ullage at the Awoba flow station.

**Table 5: Awoba FOD Full Scope Key Project Parameter Data ranges (Shell Share)**

	Unit	Bus Plan BP11	Low	Mid	High	Comments
Capex (MOD)	US\$ mln	48.1	40.9	48.1	60.2	Provided in BP11
Opex (MOD)	US\$ mln	1.2	1.0	1.2	1.5	Provided in BP11
Production volume	Mmboe	17.6	NA	17.6	NA	
On-stream Date	mm/yyyy	Jan-13	NA	Jan-13	NA	

## Economics Assumptions

### Base Case

- Project 50/50 Pre-FID costs treated as a cost only.
- SCD Opex provided by the project team.
- NDDC levy 3% of total expenditure.

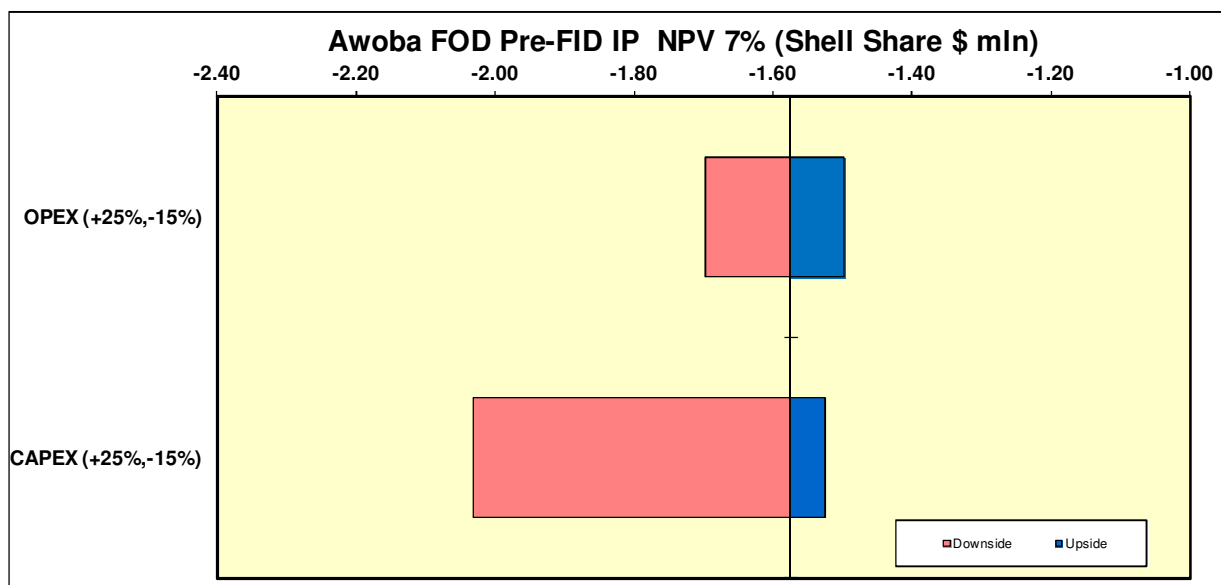
### Full Project Scope

- Oil PSV of \$70/bbl RT11. And export gas price for supply to NLNG RT11.
- Gas taxed under CITA with Associated Gas Framework Agreement (AGFA) incentive.
- ARPR 31/12/2010 variable OPEX was used.
- Flare Penalty of US \$3.5/mscf non-tax deductible.
- GHV of 1150Btu/scf.
- SCD Opex provided by the project team.
- NDDC levy 3% of total expenditure.
- Education tax of 2% assessable profit.

### PIB (House Version 12.0) Assumptions

- CIT is 30% of taxable income.
- Depreciation schedule for qualifying expenditure is 4 x 20% and 19%.
- NDDC levy calculated as 3% of total expenditure.
- SCD Opex provided by the project team and treated as Opex.
- Overseas Capex fraction assumed at 64%.
- 20% of overseas cost is non-deductible for determination.

**Chart 1: Awoba FOD Pre-FID Tornado Plot**



Note: About 67% of expenditure is Capex, hence a 25% increase depressed the NPV7% from –US\$1.6 to –US\$2.0 mln Shell Share. While a 25% increase in Opex depressed the NPV7% to –US\$1.7 mln Shell Share.

### ***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**

- **Funding constraints.**

The project is being proposed for Alternative Funding (AF) arrangement and engagements with NAPIMS to reach an agreement on funding is ongoing. There is a concern that reaching agreement on AF may be delayed or an agreement is not reached.

*Mitigation:* Pre-FID funding requirements will be met through the usual JV funding arrangements pending conclusion of AF arrangement. A conclusive AF agreement is required to progress post-FID activities. Where an agreement is delayed or not reached, the project will be rephrased to later years when an AF arrangement can be put in place or it can be funded from the JV base budget.

- **FID not materializing as planned.**

LLI's acquired risk not being utilized in event the FID for the project doesn't materialize as planned for whatever reasons.

*Mitigation:* Items acquired can be used in other planned projects (reference Section 1).

- **Delay in land acquisition.**

Delay in land acquisition will affect the timing of the location preparation and related activities in particularly and the overall project schedule in general.

*Mitigation:* The sequencing of the wells (including the planned Awoba NAG appraisal well) will be optimised in such a way that the wells that require land acquisition will be drilled last to give more time for the acquisition.

- **Community and Enabling Environment (Security, Sabotage, Political Environment):**

Hostage taking, existence of militant groups and (heightened) threat of insurgence are current realities in the Niger Delta especially in the swamp which could threaten project execution.

*Mitigation:* Global Memorandum of Understanding (GMoU) has been signed with the community and 2.5% of the total project cost will be used for Community projects. With improvements in the Niger Delta security following the Amnesty programme, it is envisaged that there will be a reduction in community related NPT, although it is still perceived that a safe and secure environment relies on the presence of the government security outfit in the area. Awoba field project specific site security plan is being finalized (awaiting sign-off) and will be reviewed with Corporate Security through the appropriate Area Security Advisors with any amendments approved by Head Security Operations East. 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:**

The project is planned to be executed under challenging circumstances in the Niger Delta Eastern Swamp.

*Mitigation:* HSE adviser has been assigned to the project and a HSE plan is being finalized (awaiting sign-off) and will be embedded during the execution of the project.

### 3.2 Opportunities

- **Keep Nembe Creek Trunk Line (NCTL) Plant full**

The new oil (and AG) generated will help arrest the decline in oil production in the field and contribute to keeping the Nembe Creek Trunk Line (NCTL) (and Soku Gas Plant) full.

- **Well and Reservoir Management:**

The planned development wells offer an opportunity to acquire more data that will allow effective reservoir management decisions during the future field life

- **Proved Reserves Addition:**

The project is expected to facilitate Proved Reserves Addition (PRA) of about 5.3MMstb (2012)

- **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

- **Use of existing facilities and drilling campaign:**

There is also the opportunity to use existing locations and facilities and carry out a drilling campaign with the Awoba North West & Awoba NAG appraisal wells, and possibly, Awoba North Block II exploration.

### **3.3 Alternatives**

There are no alternatives to drilling these wells to develop the reserves given in this proposal.

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

The DRB overseeing this project was engaged on the 16th November 2011 and DE mandate secured to progress this investment proposal.

The Awoba FOD project is at Define Phase. It is being managed in line with the ORP and fits within the existing SPDC corporate structure and governance.

The well proposals have been matured fully through the Global Well Delivery Process (GWDP) and have been signed-off by the respective discipline authorities, and have recently been dispatched to NAPIMS for JV endorsement.

## ***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 has been provided by Finance, Social Performance, Supply Chain Management, HSE, Production Operations & Maintenance, Legal, Treasury and Tax functions

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

<b>Assurance Events/Gates</b>	<b>Date</b>
DG1	Jul 2005
DG2	Aug 2006
DG3	Dec 2007
VAR4	May 2012
DG4	June 2012
FID	Q3 2012
Spud Date for 1 <sup>st</sup> Well	Q1 2013
OSD	Q2 2013

The execution of the project is managed through the DSSE Field Development & Execution Team, Wells and Engineering Hub Teams in line with the SPDC organizational model. Following successful completion, the wells will be handed back to the Swamp East Production Operations Team. 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

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

Awoba FOD is included in the BP11 base plan and incremental budget in the 2012 JV Programme. The project is being proposed for Alternative Funding (AF) arrangement and engagements with NAPIMS to reach an agreement on funding is ongoing. Offsets will be identified within the 2012 JV base budget for these LLIs pending conclusion of ongoing AF discussions. Post-FID activities will await conclusion of the AF agreement.

### ***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	2011	2012	2013	2014	2015	2016
<b>Total Commitment</b>		<b>11.14</b>				
<b>Cash Flow:</b>						
SCD Expenditure		0.28				
Pre-FID OPEX		3.31				
Capital Expenditure (LLI)		7.55				
Operating Expenditure		0.34				
Cash flow From Operations		2.47	3.27			
Cash Surplus/(Deficit)		(5.07)	3.27			
<b>Profit and Loss:</b>						
NIBIAT +/-		(0.31)				
<b>Balance Sheet:</b>						
Avg Capital Employed		2.38	3.13	1.49	1.49	1.49

### ***Section 9: ESHIA***

#### **SCD Plan**

Bille and Ke (of Degema Local Government Areas in Rivers State) are the two main communities in the project area. Interface with the communities will be through the existing GMoU that covers the area.

Issues and legacies that could become potential “show stoppers” to the project have been catalogued and most of these issues are in the process of being addressed including the Bille Community Electricity Interdependence project. Worthy of note is that none of these legacy issues have in anyway hampered our ongoing production activities from the Awoba field courtesy of the GMoU in place.

#### **EIA**

EIA plan for Awoba FOD project is covered under the Awoba NAG EIA scope which also addresses the requirements for Awoba NAG and Awoba NW Appraisal wells. The EIA report has been finalised and sent to regulators (Federal Min. of Environment & DPR) for consideration. Estimated additional cost up to final approval level is not expected to exceed N3-5m (\$20,000-30,000) which is within the uncertainty band of the cost estimate.



### ***Section 10: Disclosure***

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

### ***Section 11: Financing***

This investment is expected to be financed with JV partners funding and Shell Share of capital expenditure will be met by SPDC's own cash flow.

### ***Section 12: Taxation***

There are no unusual taxation features at this stage.

### ***Section 13: Key Parameters***

The following is the main aspect of this proposal:

***Approval for US\$11.14mln Shell Share (US \$37.13mln MOD 100% JV) to cover Awoba FOD Pre-FID activities costs.***

### ***Section 14: Signatures***

This Proposal is submitted to UIG VP Technical for approval.

**Supported by:**

**Approved by:**

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*Bernard, Bos (FUI/F)*

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

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*Bart, Lismont (UIG/T)*

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

*Initiator:* \_\_\_\_\_

*Ozoemene, Uche (UIG/T/DFSS)*

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