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 53.0 million Shell share, MOD, 50/50 (USD 116.9 million 100% JV)
Project	**Nembe Creek Phase 2 FOD (Pre FID)**

Main commitments

Cost	100% JV (USD Mln)	Shell Share Equity (US$ Mln)	Shell Share MCA (US$ mln)	Total Shell Share based on MCA Funding (US$ mln)
Oil Development Drilling	7.0	2.1	2.6	4.7
Oil Development Completion	22.4	6.7	8.2	14.9
Oil Recompletion	6.1	1.8	2.3	4.1
Flowline Construction/Hookup	12.3	3.7	4.5	8.2
Oil Facilities	0.8	0.2	0.3	0.5
PMT	0.0	0.0	0.0	0.0
Total Capex	**48.7**	**14.6**	**17.9**	**32.5**
Location Preparation	18.5	5.5	0.0	5.5
Other expensed cost	46.6	14.0	0.0	14.0
FEED Opex	0.3	0.1	0.0	0.1
SCD OPEX	2.8	0.9	0.0	0.9
Total Opex	**68.2**	**20.5**	**0.0**	**20.5**
Total (CAPEX + OPEX)	**116.9**	**35.1**	**17.9**	**53.0**

Source and form of financing	Shell share of Pre-FID expenditure will be met by SPDC's own resources under the Alternative Funding arrangement.
Summary cash flow (Shell Share)	Cost Only evaluation. Cash flow plot not applicable.

Summary economics

Summary Economics (RV-RT12)	NPV7% (USD mln)	RTEP (%)	VIR7%
Pre-FID Base	-8.8	N/A	-0.30
Pre-FID High Capex	-10.5	N/A	-0.30
Full Project - Base Case	88.9	43	0.47

Section 1: The Proposal (Management Summary)

This pre-FID Investment Proposal is required to secure funding USD 53.0 mln total Shell Share based on MCA funding (USD 116.9 mln 100% JV) for the execution of Pre-FID activities required for the earliest set of wells in the Nembe Creek Ph2 Further Oil Development (FOD) project.

The key business driver for this project is to increase production through new oil addition and contribute to keeping the Niger Coastal Trunk Line (NCTL) and Soku Gas Plant full, and hence support SPDC's gas commitment to NLNG. The selected Nembe Creek Ph2 FOD concept to address this, as described in the 2012 FDP Update, consists of drilling, completion and hook-up of 8 new oil wells and 2 Recompletions, leveraging smart wells technology, to develop 73.9 MMstb (expectation recovery) of oil with 35,500 bopd initial potential.

Produced oil and gas from the wells will be evacuated via the four existing Nembe Creek Flowstations. The evacuation strategy is to utilise the ullage at the facility.

The 10 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 Q2, 2013. While funding arrangement for the full project scope is being finalized, preparation needs to be made for location constructions and procurement of long lead materials, especially flowlines and completion accessories. Average lead time for most of the wellhead and completion materials is 6-9 months.

Table 1: Nembe Creek Ph2 FOD Pre-FID Scope-Phased Expenditure Table (MOD 100% JV)

Description	2011	2012	2013	Total
Long Lead Materials (wellhead platforms, completion and smart accessories)	-	*0.8	94.5	95.3
Land Acquisition for one well (200m x 200m)	-	**0.1	-	0.1
Location Preparation (10 locations total)	-	#3.6	14.8	18.4
Opex (FEED+SCD Expenditure)	-	*#0.4	2.7	3.1
Total	**-**	**4.9**	**112.0**	**116.9**

* Amount is for fabrication of wellhead platform for all the 10 wells.
** Land acquisition for 1 well (UILP-2), which requires a new surface location.
# Location preparation covers the first 2 wells on the drilling sequence; these wells are to be drilled off existing well slots and do not require land acquisition.
*# Comprises $0.32k for FEED and $0.12mln to commence SCD activities.

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

- **Long Lead Items (LLIs for 10 planned wells):** LLI's will be used for a number of projects as follows:
    a) Long lead materials not related to the smartwell accessories amount to about 41% of the total pre FID cost. Based on agreement with SSAGS+ project team, these materials can be utilised in the Southern Swamp AG Solution Plus (SSAGS+) FOD project {**FID already taken in Apr 2012**}. As such, this fraction of the cost has been treated as capex in the economics.
    b) Awoba FOD Project (FID planned for Q4 2012).
    c) Santa Barbara LOD Phase 2 (FID planned for Q1 2013).
- **Land Acquisition (200m x 200m**): Acquired land will be utilized whenever the FID finally materializes.

- **Location Preparation:** 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, Strategic and Financial Context

This 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 10 wells) is about 35.5Mbopd with a peak production rate of about 25 Mbopd taking into account surface facility constraints.

Summary Economics

The Pre-FID economic evaluation was carried out as a cost-only evaluation on a forward looking basis using 50/50 level II cost estimates.

Long Lead materials were generally treated as opex except for those elements/items where alternative use was identified for SSAGS+ project. Thus, only 41% of the total pre FID costs are deemed capitalisable in the economics analysis. Details are shown in Table 2 below.

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

- High Capex.
- 1.5% cost markup due to Benchmark Verified and Approved (BVA) issues with NNPC.

Table 2: Nembe Creek Ph2 FOD Pre-FID Economic Grid (Shell Share)

PV Reference Date: 1/7/2012	NPV (S/S $ mln)		VIR	RTEP	UTC (RT $/boe)		Payout-Time (RT)	Maximum Exposure (RT- AT)
Cash flow forward from: 1/1/2012	0%	7%	7%	%	0%	7%	(yyyy)	$mln (yyyy)
Base Case								
SV ($50/bbl & $1.30/mmbtu RT12) *								
RV ($70/bbl & $1.73/mmbtu RT12)	-8.0	**-8.8**	**-0.30**	N/A	N/A	N/A	N/A	*18.6 (2013)*
HV ($90/bbl & $2.27/mmbtu RT12) *								
Sensitivities (using RV)								
High Capex (+17%)		**-10.5**	**-0.30**					
1.5% Cost mark-up due to BVA issues		**-10.4**	**-0.33**					

* SV and HV same as RV as a cost only evaluation

Parameter	Unit	BP11 Provision	Low	Mid	High	Comments
Capex (MOD) *	US$ mln	102.57	N/A	32.45	37.97	* BP11 Value represents Full Project scope and based on JV funding
Opex (MOD)_Project	US$ mln	N/A	N/A	20.48	23.96	SCD and Pre-FID Opex
Production Volume	mln boe					
Start Up Date	mm/yy					
Production in first 12 months	mln boe					

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 incremental production forecast. The details are shown in Table 3 below.

Table 3: Nembe Creek Ph2 FOD Full Project Scope Economic Grid (Shell Share)

PV Reference Date: 1/7/2012	NPV (S/S $ mln)		VIR	RTEP	UTC (RT $/boe)		Payout-Time (RT)	Maximum Exposure (RT- AT)
Cash flow forward from: 1/1/2012	0%	7%	7%	%	0%	7%	(yyyy)	$mln (yyyy)
Base Case								
SV ($50/bbl & $1.30/mmbtu RT12)	107.4	**56.2**	**0.30**					
RV ($70/bbl & $1.74/mmbtu RT12)	161.3	**88.9**	**0.47**	43	8.6	9.6	2015	*62.7 (2013)*
HV ($90/bbl & $2.27/mmbtu RT12)	215.0	**121.4**	**0.64**					

Economics Assumptions

Pre-FID Investment

- Pre-FID evaluation is treated as a cost only.
- SCD Opex provided by the project team.
- Pre-FID cost is treated as opex except where alternative use of the long lead materials have been identified and agreed with other project team. In case of this project, only 41% of the total pre FID cost is capitalisable. Besides location preparation and SCD/FEED cost, approximately $46.6mln of the remaining pre FID cost are to be expensed.
- NDDC levy 3% of total expenditure.
- Abandonment cost is estimated at 10% of total project RT CAPEX

Full Project Scope

- Oil PSVs of $50/bbl @SV-RT12, $70/bbl @RV-RT12 (base) and $90/bbl @HV-RT12 with appropriate Bonny offset applied.
- 2012 NLNG PSV was used.
- Oil was taxed under PPT (PPT tax rate of 85%).
- Gas was taxed under CITA with AGFA incentives.
- OPEX Assumptions as follows:
    - SPDC Generic fixed OPEX assumptions was applied for the new development
        - Oil fixed - 3.0% of cum. oil CAPEX
        - Gas fixed - 3.5% of cum. gas CAPEX
    - Variable OPEX as follows
        - SPDC 31/12/2011 ARPR Variable OPEX for Nembe flow stations was used. The OPEX variable value is the average of the variable OPEX of the 4 Nembe flow stations
- NDDC levy of 3% total expenditure.
- Education tax of 2% assessable profit.
- 2.5% of the project MOD CAPEX assumed as SCD.
- GHV of 1150 BTU/Scf used.
- Gas flare penalty of $3.5 /Mscf was applied and is not tax deductible
- Abandonment cost is 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

- Cost overrun does not attract any profit oil but recovered through cost oil only.
- Oil PSVs of $50/bbl @SV-RT12, $70/bbl @RV-RT12 (base) and $90/bbl @HV-RT12 with applicable offset applied for Bonny.
- OPEX and PMT not carried under current MCA arrangement.

Section 3: Risks, Opportunities and Alternatives

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

3.1 Risks

- **Delay in securing Alternate Funding for project:**
  The project is being proposed for Alternative Funding (AF) arrangement and engagements with NAPIMS to reach an agreement on funding is ongoing. Any delay in securing the AF arrangement will potentially impact on the FID for full project scope. Pre-FID budgetary requirements will be met through sole risk funding from the IOC partners (i.e., excluding NNPC) pending conclusion of AF arrangement. A conclusive AF agreement is required to progress post-FID activities.

  Mitigation: Where a funding agreement is delayed or not reached at all, the project will be re-phased to later years when an AF arrangement can be put in place or when it can be funded from the JV base budget. In this case, some part of the acquired long lead materials, especially the non-smartwell scope will be deployed to other planned projects (reference Section 1).

- **Delay in land acquisition:**
  Delay in land acquisition will affect the timing of the location preparation for 1 of the 10 planned wells and related activities in particularly and the overall project schedule in general.

  Mitigation: The sequencing of the wells will be optimised in such a way that wells not requiring new land acquisition can be drilled first to allow more time to manage any uncertainties pertaining to acquiring land and preparing the attendant location.

- **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 Nigeria Government 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. A project-specific Security Plan is being signed-off by Corporate Security Team in conjunction with the Area Security Advisor. Specific threats will be managed through the Security & Surveillance Centre (SIS) and communicated in good time to those that need to "Know" and "Act" as required.

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

  Mitigation: A HAZID workshop has been carried out to outline key HSSE risks that could impact on the project. Resulting from this, a Project HSSE Plan (which will be supported by an ALARP

demonstration) has been finalized and will be embedded in the execution plan. In addition to this, an HSE Adviser will be assigned to support its execution.

3.2 Opportunities

- **Use of existing facilities:**
  The philosophy adopted for this project is to use existing facilities as much as possible in order to reduce surface footprint associated with this project. By using existing well slots for the proposed wells, only one (1) of the 10 wells will require new location acquisition. Also, opportunity to utilize existing flowline RoW by excavation of disused flowlines has been assessed for the project. This further reduces land take.

- **Well and Reservoir Management:**
  The planned smart well completions offer an opportunity to acquire subsurface 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 7 MMstb SS (2013)

- **Knowledge Sharing:**
  This project will provide a very good opportunity for the new Wellsite Petroleum & Well Engineers to obtain requisite operations experience under the close supervision of the more experienced operations personnel.

3.3 Alternatives

There are no alternatives to drilling these wells to develop the reserves outlined 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 pre FID investment proposal.

The Nembe Creek FOD Phase 2 project is at Define Phase. It is being managed in line with the ORP and fits within the existing SPDC corporate structure and governance framework.

The well proposals are being matured through the Global Well Delivery Process (GWDP) and, at the time of preparing this document, the reviewed drafts are being finalised for final sign-off.

Section 5: Functional Support and Consistency with Group & 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

Assurance Events/Gates	Date
DG1	Jun 2006
DG2	May 2007
DG3	Apr 2008
Integrated Project Review	Q4 2012
DG4/FID	Q4 2012
Spud Date for 1st well	Q2/Q3 2013
OSD	Q4 2013

The execution of the project is managed through the Swamp East Asset Dev Team (Field Development & Execution), 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

Nembe Creek Ph2 FOD is included in SPDC's business plan and incremental budget in the 2012 JV Programme. NAPIMS approval has already been received to include this project in the basket of SPDC opportunities to be funded under MCA/AF arrangements. Pending endorsement of MCA/AF proposal by NNPC, the IOCs have agreed on sole risk funding to support 2012 long lead materials procurement, while remaining 2013+ workscope will be progressed once MCA/AF agreement is reached.

Section 8: Group Financial Reporting Impact

There are no unusual accounting issues related to this GIP. Expenditure related to the project will be accounted for in line with Group Policy. The financial impact of this proposal on Shell Group Financials is as indicated in the table below:

US$ mln	2012	2013	2014	2015	2016	Post 2016
Total Commitment	1.6	51.3	0.0	0.0	0.0	0.0
SCD OPEX	0.0	0.8	0.0	0.0	0.0	0.0
OPEX: LLM, Loc Preparation, Land Acquisition + FEED	1.3	18.3	0.0	0.0	0.0	0.0
Cash Flow						
Capital expenditure	0.2	32.2	0.0	0.0	0.0	0.0
Cash Flow from Operations	-0.2	12.0	7.5	1.9	1.9	2.1
Cash Surplus/(Deficit)*	-0.5	-20.3	7.5	1.9	1.9	2.1
Profit and Loss						
NIBIAT +/-	-0.2	-2.1	-0.5	-0.5	-0.5	-3.4
Balance Sheet						
Average Capital Employed	0.1	9.4	14.4	9.2	6.8	0.9

Section 9: ESHIA

SCD Plan

Nembe communities and some other satellite communities (of Nembe Local Government Area in Bayelsa State) make up the communities in the project area. Interface with the communities will be through the existing GMoU that covers the area.

The implementation of the SCD contents for the Nembe Creek FOD Phases 1 and 2 will largely run back-to-back. The Social Performance Team began the community engagements for these projects in Q2, 2006. All through, the community representatives were informed of the drilling campaign in Nembe Creek will comprise all planned wells for the two phases. However, there is need to review the community stakeholder engagement and social performance plans to reflect the revised schedule of the project considering the sensitivity of this area.

EIA

EIA approvals are available from both Directorate of Petroleum Resources (DPR) and Federal Ministry of Environment (FEMV). Below is specific outline of EIA approval history for the project.

FEMV: In 2001, approval was obtained for 43 wells under umbrella of Nembe FDP. Out of this scope, further revalidation was done in 2006 to cover 8-10 wells for Nembe Creek FOD Phase 1 project. In 2010, FEMV endorsed that SPDC could continue to execute further

development activities under subsisting 2001 EIA approval provided there is no change in scope. Thus, FEMV approval for project is available.

DPR: Approval for Nembe FOD was first obtained in 2008 under an umbrella of 36 legacy SPDC projects. This approval was revoked by DPR in 2010 and SPDC was requested to revalidate the EIA. Following further data gathering and EIA scope revalidation/update carried out in 2011, a new approval was obtained in Mar 2012 for Nembe Creek FDP covering Phases 1 & 2 and other associated drilling activities.

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 will be financed by the Private Partners under Alternative Funding (AF)/Modified Carry (MCA) arrangement. 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$53.0 mln Shell Share (US $116.9 mln MOD 100% JV) to cover Nembe Creek Ph2 FOD Pre-FID activities costs.

Section 14: Approvals

This Proposal is submitted to UIG VP Technical for approval.

Supported by:

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Bernard, Bos *(FUI/F)*

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

Approved by:

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Bart, Lismont *(UIG/T)*

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