The Shell Petroleum Development Company of Nigeria Limited

Internal Investment Proposal

Summary Information

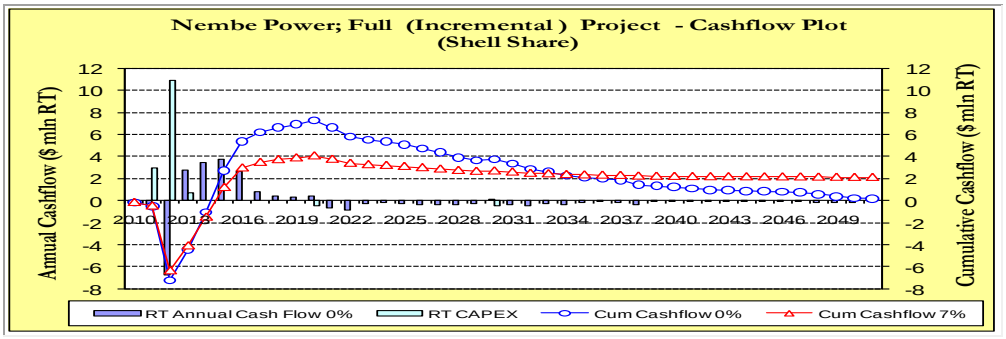
Directorate	Technical Directorate
Group equity interest	100% in SPDC, whereas SPDC is the Joint Venture (JV) operator of an unincorporated JV with a 30% interest.
Other shareholders / partners	Nigerian National Petroleum Corporation -NNPC (55%), Total FinaElf (10%), and Nigerian Agip Oil Company –NAOC- (5%)
Amount	US$2.19mln Shell share, MOD, 50/50. (US$7.31mln JV 100%)
Project	**Nembe Electric Power Interdependency Project Updated Pre-FID IP**

Main commitments

	(US$Mln)	
	Shell Share	**JV**
Geomatic Survey of Gas Line route	0.16	0.53
Soil Survey	0.02	0.07
FEED and Detailed Design	0.40	1.33
EIA Revalidation	0.01	0.03
SITE PREPARATION (sand search/sand filling)	1.14	3.80
10% for Order Placement (Procurement of Line Pipes)	0.04	0.15
10% for Order Placement (Procurement of 3 nos. gas engine generators)	0.42	1.40
Total	**2.19**	**7.31**

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. Formal JV partners' approval will therefore be obtained.

Summary cash flow



Summary economics

At Ranking PSV ($60/bbl RT10)	NPV7% ($m)	VIR7%	RTEP (%)
Base Case Pre-FID	**-0.3**	NA	NA
Base Case Full Project	**1.9**	**0.01**	NA

Section 1: The proposal (management summary)

This proposal seeks management approval of US$2.19 mln (Shell Share), for funding the activities, which need to be executed prior to Final Investment Decision (FID) currently scheduled for April 2011. This updated pre-FID Investment Proposal is premised on the outcome of the project DRB meeting held on 23rd September 2010 Please refer to attachment-1 for *Minutes of the Nembe Electrical Interdependency Project DRB Meeting –23rd September, 2010.*

Currently, the Nembe Creek district is the largest district in the Eastern swamp and consists of the Nembe-1 to 4 and Odeama Creek flowstations. Nembe Creek is currently the single largest producing field in SPDC East. Premised on BP09, the Nembe 1, 2, 3 and 4 flowstations are planned to export an average of 65Mbopd to Bonny Terminal and 38MMscf/d to NLNG. As at 31.12.09, the Nembe fields had undeveloped oil reserves of 724MMstb and undeveloped gas reserves of 1318Bscf (NNS reserves).

Secondly, SPDC has a total of 4nos. diesel power generating sets (2nos. -1000kVA and 2nos. – 800kVA) installed at Ogbolomabiri and Bassambiri. The monthly diesel requirement for the generator sets is 240,000 liters. Currently, SPDC incurs an annual diesel procurement cost of approximately US$3.9 mln, to ensure the continued operation of the power generating sets. The cost of diesel for power generation is borne by SPDC. Previous instances when SPDC has defaulted in the supply of diesel for the generating sets have resulted in various threats from the communities. Currently, the freedom –to-operate for the Nembe Creek Trunkline replacement works and SPDC operations in the area is under threat.

The Nembe (Ogbolomabiri and Bassambiri) Electrical Interdependency Project is premised on the deployment of gas-driven power generator that will eliminate the need for the diesel generators currently installed in Ogbolomabiri and Bassambiri. The base case option is to provide a gasline from SPDC Nembe 4 manifold to the outskirts of Nembe Ogbolomabiri and Bassambiri, where power will be generated via gas driven generators, installed in a remotely located Power Generating House. The generated power will be transmitted to Ogbolomabiri and Bassambiri communities, via overhead cables. The Town Distribution Network will be upgraded, prior to the project being commissioned. The Level-1 cost estimates for the key aspects of the project are detailed in table-1 below:

Table1: Full Project Cost (100% JV):

S/N	Work Item Description	Estimate (US$mln)
1	Preliminary works, which includes route and geotechnical Surveys, land acquisition and site preparation	7.09
2	Power generation, which covers the procurement, installation and commissioning of 3Nos. 3.1MW gas generators	13.85
3	Procurement and Installation of the gas line, including the securing and clearing of the gasline right-of-way.	5.93
4	Upgrading of Ogbolomabiri and Bassambiri Town Distribution Network.	1.23
5	Construction of the Power Generation House, gas processing Equipment and transmission lines	6.23
7	Project contingency, including provision for inflation, EPC premium and Owners cost.	23.47
	Total (100%- JV)	**57.79**

The cost phasing 100% JV, for the full project is detailed below:

Table 2: Project Cost Phasing (100% JV)

		Prior	2009	2010	2011	2012	2013	Total
OPEX $mln (100%)	Pre-FID			7.3				**7.3**
CAPEX $mln (100%)	Post FID	0.0			10.0	38.0	2.5	**50.5**
	Total	**0.0**	**0.0**	**7.3**	**10.0**	**38.0**	**2.5**	**57.8**

The 2010 budget is included in the SPDC business plan and has been approved by the JV Partners. It is expected that the project will be funded as part of the SPDC base case budget.

Section 2: Value proposition and strategic and financial context

This proposal is consistent with the strategy and objectives of SPDC, which is to reduce deferment due to the 3rd party shutdown, by creating an interdependent "umbilical" between the Nembe flowstations and the main host communities. The project is consistent with the SPDC Business plan and a Step-out approval, from SPDC Community Electrical Interdependency Policy has been obtained to progress this project. The project will add value to the business in form of reduction in the disruption of production at Nembe-1, 2, 3 and 4 flowstations. Additionally, the project will result in a reduction in OPEX, premised on eliminating the need for diesel utilisation by community generators.

Summary Economics

The base economics for this pre-FID IP was evaluated on a forward-looking and cost only basis. The full value of the project would only be achieved on full project execution post-FID.
The pre-FID cost has been treated as OPEX and sensitivity on the capitalizing the Pre-FID cost assuming the project takes FID was also evaluated.

The full project scope was evaluated on a forward-look basis using 50/50 MOD (level 111) cost estimates and the incremental (acceleration) production forecast gained from improvements in 3rd party deferment on BP10 corporate production forecast for the Nembe Node

The '*opportunity*'[1] value of the gas (900MMscf/d) that will be utilized by the electrical interdependency project was treated as a cost to the project, while the savings on diesel ($3.9mln/annum) as well as 2MW diesel generator replacement ($1.7mln RT10 in 2020 and 2030 respectively) was credited to the project.

The incremental values of the various options were evaluated as the difference between the: -

1. NFA production with improved 3rd party deferment, ARPR OPEX net-of the annual diesel cost, the '*opportunity*' value of the fuel gas treated as additional OPEX. And the facility cost was treated as Oil infrastructure[2] cost
2. BP10 NFA production forecast without an improvement in 3rd party deferment and ARPR OPEX (assumed to already include the cost of diesel provided to the Nembe communities annually to enable LTO) for Nembe FS.

[1] The gas will be taken from AG in the node that is usually sold to NLNG T1-6; the fuel gas cost was computed as the value of the fuel gas - if it were sold to NLNG under the T1-6 supply contract.

[2] All Facilities assumed to be owned by SPDC

The results for the full project base case (as described above) and sensitivities are presented in table 4.

Table 3: Economics Grid –Pre FID

PV Reference Date: 1/7/2010	NPV (S/S $ mln)		VIR	RTEP	UTC (RT $/boe)		Payout-Time (yyyy)	Maximum Exposure $mln (RT)
Cash flow forward from: 1/1/2010	0%	7%	7%	%	0%	7%		AT
OPEX View								
SV-RT ($50/bbl & $1.37/Mscf RT10)	-0.3	-0.3	N/A					
RV-RT ($60/bbl & $1.63/Mscf RT10)	-0.3	-0.3	N/A	N/A	N/A	N/A	N/A	0.3 (2010)
HV-RT ($80/bbl & $2.15/Mscf RT10)	-0.3	-0.3	N/A					
BEP ($/bbl)					N/A	N/A		
Sensitivities								
CAPEX View	-0.3	-0.5	-0.25					

Key Project Parameter Data (Shell Share)

Parameter	Unit	BP10	Low	Mid	High	Comments
CAPEX (MOD)	US$ mln	1.55	-	-	-	BP10 CAPEX is for 2010 only, which is the period covered by the pre-FID request
OPEX (MOD)	US$ mln	0.00	0	2.19	0.0	Pre-FID spend treated as OPEX Per finance recommendation
Sales Volume	mln boe	N/A	0.0	0.0	0.0	
Start Up Date	mm-yy	N/A	NA	NA	NA	

Table 4: Economics Grid – Full Project

PV Reference Date: 1/7/2010	NPV (S/S $ mln)		VIR	RTEP	UTC (RT $/boe)		Payout-Time (yyyy)	Maximum Exposure $Mln (RT)
Cash flow forward from: 1/1/2010	0%	7%	7%	%	0%	7%		AT
Base Case*								
SV-RT ($50/bbl & $1.37/Mscf RT10)	-0.4	0.8	-0.02					
RV-RT ($60/bbl & $1.68/Mscf RT10)	0.2	1.9	0.01		3.1	11.1	2015	7.9 (2012)
HV-RT ($80/bbl & $2.15/Mscf RT10)	1.2	4.0	0.08					
BEP ($/bbl)								
Sensitivities (using RV-RT)								
NFA with Nembe Power Project	247.0	154.9	15.65				2010	0.1 (2010)
NFA without Nembe Power Project	246.9	153.1	0.00				2010	0.14 (2010)
High Capex (+40%)*	-0.9	0.4	-0.04				2015	12.5 (2012)

**This represents the value difference between NFA with Power Project and NFA without the Power Project*

Economics Assumptions

- Oil taxed at PPT.
- Gas taxed under CITA with Associated Gas Framework Agreement (AGFA) incentive
- 31/12/2009 ARPR (Annual Review of Petroleum Resources) OPEX for Nembe 1-4 flow stations was used and SPDC Generic OPEX was used for new facilities.
    - SPDC generic OPEX assumptions:
        - Oil fixed OPEX of 3% of cum. oil CAPEX respectively
- NDDC levy of 3% total expenditure.
- Education tax of 2% assessable profit.
- GHV of 1150btu/scf
- Abandonment cost is estimated at 10% of total project RT CAPEX

Section 3: Risks, opportunities and alternatives

S/No.	Risk Description	Mitigation /Remedial Effort
1	**Project Funding-** General JV funding issues as applicable to SPDC projects	The need to adhere to SPDC base case budget and if the base case budget is not in line with the Project CAPEX phasing, it might result in Project slippage. – Manage within existing SPDC Business Planning and monthly BCC framework. Provide an execution strategy, which is robust and flexible in terms of deployment.
2	**Inadequate Work Scoping** - Project Cost overrun might be caused by inadequate work scooping due to worksite unavailability, inflation and limited number of technically capable contractors willing to work in the Swamp	Pro-active engagement of communities in other to facilitate worksite availability for SPDC is ongoing Project execution strategy will take the need to involve host communities in certain aspects of the construction.
3	**Local Content Implementation Requirement** - Non-adherence to local content requirements	Continuous engagement with the NCD department in SPDC, during each stage in the project. SPDC FEED team or a competent Design consultant in Nigeria will do detailed Engineering design.
4	**Project Acceleration -** Utilisation Domestic Gas Contract	The opportunity exists to accelerate the Project delivery schedule by the utilisation of the Domestics Gas contracts for the procurement of Gas Generators, cables and site construction works. – Early engagement of NAPIMS is required to ensure that their buy-in is obtained for the execution strategy.
5	**Health, Safety and Environment –** Hazards encountered during site survey, site works, construction and operation.	HAZID workshop aimed at identifying key hazards has been conducted. A QRA will assist in ensuring that the selected concept will be executed and operated with a tolerable risk level and in conformance with the principal of ALARP. In addition, contractors to be selected will be competent in managing HSE risks. Lesson learnt from on-going projects will be applied in updating a fit-for-purpose project HSE case to manage all significant risks to ALARP. Also an EIA will be undertaken for the project

Alternatives Considered

(i) **Option 2A**: Gas Engines located adjacent to Nembe-4 manifold and overhead lines used for transmitting power to Nembe-Ogbolomabiri and Bassambiri.

(ii) **Option 2B**: Gas Turbines located adjacent to Nembe-4 manifold and overhead lines used for transmitting power to Nembe-Ogbolomabiri and Bassambiri.

(iii) **Option 3A**: Gas Engines located adjacent to Nembe-4 manifold and sub-marine cable used for transmitting power to Nembe-Ogbolomabiri and Bassambiri.

(iv) **Option 3B**: Gas Turbines located adjacent to Nembe-4 manifold and sub-marine cable used for transmitting power to Nembe-Ogbolomabiri and Bassambiri.

Section 4: Corporate structure, and governance

A Decision Review Board approved for the SPDC Electrical Interdependency Project will govern the project. Functional approvals and technical support will be obtained prior each Decision Gate. The Opportunity Realisation Process will be implemented for the project.

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

In order to progress the project through the ORP process relevant functional input and support will be sought to ensure seamless execution. SPDC HSE and SCD policies will be adhered to, with a view to minimise the risk of incidents/accidents and disruptions. In addition, a project specific HSE plan will be put in place.

Section 6: Project management, monitoring and review

The Nembe Electrical Interdependence team, from SPDC Major Projects has been mobilised for project execution. The Project Manager is on seat and has assumed full responsibility for this project after DRB-2/3. The project team has been constituted and resources is from the SODA/Domgas team which will include a project service group consisting of Contracting and Procurement (SCM), discipline team, Accounting, Information Management, Cost, Planning and QA/QC.

Section 7: Budget provision

The approved budget for 2010 is F$3.9mln, the balance budget requirement for this expenditure will be provided for in 2011 budget by the JV.

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	2015
Total Commitment	2.19					
Cash Flow						
SCD Expenditure						
Commitment OPEX	2.19					
Capital Expenditure						
Independent OPEX	0.07					
Cash flow From Operations	(0.96)	0.62				
Cash Surplus/(Deficit)	(0.96)	0.62				
Profit and Loss						
NIBIAT +/-	(0.33)					
Balance Sheet						
Avg Capital Employed	0.31	0.31				

Section 9: Disclosure

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

Section 10: Financing

The base case assumption is that SPDC will fund the project. After the deployment of the Interdependency project, SPDC will also fund the operations and maintenance of the facility.

However, the option of surcharging a stipulated tariff for power consumption, beyond a certain consumption threshold is also being considered. The tariff structure will be implemented and reviewed by the Nembe Utility Board. This tariff structure if implemented will help SPDC reduce the annual operations and maintenance cost of the Power project.

Section 11: Taxation

The Operating and Capital expenditures are tax deductible at the statutory rate of 85% under the Petroleum Profit Tax Act-2004. Fiscal depreciation in respect of the capital expenditure is given over 5 year's straight line with 1% retention in the fifth year. In addition, a one-off investment allowance of 5% is claimable on capital expenditure.

Section 12: Key Parameters

This investment proposal seeks approval for $7.3mln Shell share, MOD, 50/50 ($57.8mln-100% JV) for the Pre-FID activities for Nembe electric power interdependency project.

Section 13: Signatures

This Proposal is submitted to EPG-TP for organisational approval

Supported by:

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Tunji Mayaki

LSUI/AF

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

Supported by:

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Ali Siddiqi

FUI/LF

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

Supported by:

.....

John Etukudo

FUI/LFd

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

Approved by:

.....

Nwoke Chris

FUI/FB

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

Approved by:

.....

Andrew Birch

UIG/T/P

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

Initiator: _____

Gbole-Wikina, Ema

(UIG/T/PDT)

Date …/…./….

Attachment-1: Minutes of the Nembe Electrical Interdependency Project DRB Meeting –September, 2010

2010-09 DRB
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