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$ 0.59 Mln Shell share, MOD, 50/50. (US$ 1.97 Mln JV 100%)
Project	**Nembe Electric Power Interdependency Project Pre-FID IP**

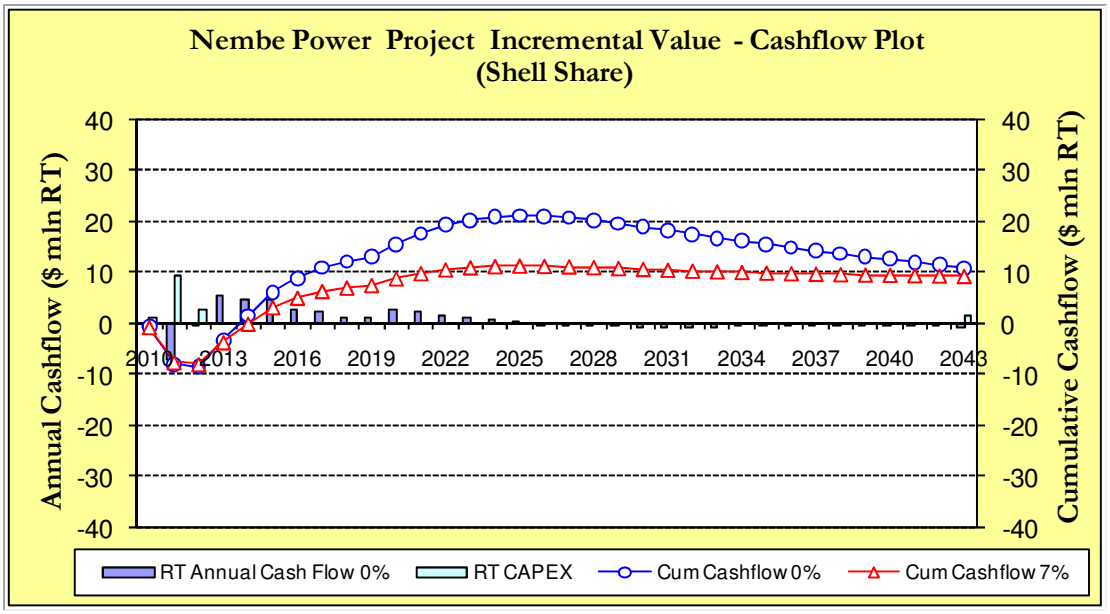
Main commitments

	(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
Total	**0.59**	**1.97**

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 (%)
Pre-FID (OPEX View)	-0.1	N/A	N/A
Pre-FID (CAPEX View)	-0.1	-0.25	N/A
Base Case Full Project*	9.2	0.75	N/A

**Incremental value due from Nembe Power project which represents the value difference between NFA with Power Project and NFA without the Power Project*

Section 1: The proposal (management summary)

This proposal seeks management approval of US$ 0.59 mln (Shell Share), for funding the activities, which need to be executed prior to Final Investment Decision (FID) currently scheduled for November, 2010. This pre-FID Investment Proposal is premised on the outcome of the project DRB meeting held on 18th November 2009. Please refer to attachment-1 for *Minutes of the Nembe Electrical Interdependency Project DRB Meeting –18th November 2009.*

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, Bassambiri and Satellites) 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 –1 flowstation to the outskirts of Nembe Ogbolomabiri and Bassambiri, where power will be generated via a gas driven turbine, 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/No.	Work Item Description	Estimate (US$mln)
1	Preliminary works, which includes Surveys and FEED.	2.0
2	Power generation, which covers the procurement and Installation of 2Nos. 5.1 MW Gas Turbines.	12.8
3	Procurement and Installation of the gas line, including the securing and clearing of the gasline right-of-way.	14.1
4	Upgrading of Ogbolomabiri and Bassambiri Town Distribution Network.	0.7
5	Construction of the Power Generation House, including land acquisition.	1.2
7	Project contingency, including provision for inflation and Owners cost.	14.3
	Total (100%- JV)	**45.1**

The commercial option, entailing SPDC supply of gas, while a 3rd party Electric Power Solution Provider generates power, installs transmission lines and operates the entire system, is also being considered.

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

Table 2: Project Cost Phasing (100% JV)

		2009	2010	2011	2012	2013	Total
OPEX $mln (100%)	Pre-FID		2.0				**2.0**
CAPEX $mln (100%)	Post FID			33.5	9.7		**43.2**
	Total	**0.0**	**2.0**	**33.5**	**9.7**	**0.0**	**45.1**

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 economics pre-FID IP was evaluated on a forward-looking and cost only basis, as the full value of the project would only be achieved on full project execution post-FID. The Pre-FID spend was treated as OPEX. There is also a CAPEX view assuming the project takes FID.

The full project scope was evaluated on a forward-look basis using BP09 NFA production forecast (Oil and AG) of the affected fields, and 50/50 CAPEX estimates. Evaluation was carried out based on two premises

1. NFA with Nembe Power project costs (assumes improved 3rd party deferment)
2. NFA without Nembe power project cost (assumes normal 3rd party deferment)

Base case results presented in table 4 represent the value difference between NFA with Nembe Power Project and NFA without the Nembe Power Project.

Sensitivities analysis shows the stand alone values of the NFA with Nembe power project and NFA without Nembe power project (see Cash flows in appendix 1). Other sensitivities evaluated include high CAPEX, license expiry in 2019 as well as the value impact of the petroleum industry bill (PIB).

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)	-0.1	-0.1	N/A					
RV-RT ($60/bbl & $1.63/Mscf RT10)	-0.1	-0.1	N/A	N/A	N/A	N/A	N/A	0.1 (2010)
HV-RT ($80/bbl & $2.15/Mscf RT10)	-0.1	-0.1	N/A					
BEP ($/bbl)					N/A	N/A		
CAPEX View								
SV ($50/bbl RT10)	-0.1	-0.1	-0.25					
RV ($60/bbl RT10)	-0.1	-0.1	-0.25	N/A	N/A	N/A	N/A	0.5 (2011)
HV ($80/bbl RT10)	-0.1	-0.1	-0.25					
BEP ($/bbl)					N/A	N/A		

Key Project Parameter Data (Shell Share)

Parameter	Unit	BP09	Low	Mid	High	Comments
OPEX (MOD)	US$ mln	0.59	0	0.59	0.0	Pre-FID spend only
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)	8.0	6.7	0.55					
RV-RT ($60/bbl & $1.63/Mscf RT10)	10.7	9.2	0.75		12.5	11.1	2015	8.7 (2012)
HV-RT ($80/bbl & $2.15/Mscf RT10)	16.1	14.2	1.16					
BEP ($/bbl)								
Sensitivities (using RV-RT)								
NFA with Nembe Power Project	134.9	78.7	6.42				2014	8.7 (2012)
NFA without Nembe Power Project	124.2	69.5	N/A				N/A	N/A
High Capex (+40%)	9.8	8.0	0.47				2016	12.1 (2012)
License expiry (2019)	12.7	7.3	0.60				2015	8.7 (2012)
PIB Sensitivty		7.3	0.60					

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

Economics Assumptions

- 31/12/2009 ARPR (Annual Review of Petroleum Resources) fixed and variable costs for the facilities were used.
- GHV of 1150 btu/scf for gas to NLNG.
- Associated Gas Framework Agreement (AGFA) Fiscal incentive applied.
- Flare penalty of $4/Mscf non-tax deductible.
- NDDC levy of 3% total expenditure.
- Education tax of 2% assessable profit.
- Abandonment cost is estimated at 10% of total project RT CAPEX

PIB_ Version 4.2 Assumptions

- PIB start year is 2010

- Royalty rates based on product (value) prices and production rates per PML (assumed equal to a field). Royalty rates are designed to be higher for easier and bigger producing assets.
- NHT depreciation schedule is 4x20%, 19% for qualifying expenditure.
- No capital investment credit/allowance (ITC or ITA) or uplift is granted under the PIB
- NHT rate is 50% for onshore and shallow water, and 30% for frontier acreages and Deep Water.
- NHT amount is the lesser of applicable tax rate multiplied by the taxable income and 2% of total revenue.
- CIT depreciation schedule is 3x25%, 24%, for qualifying expenditure.
- CIT is 30% of taxable income and is not deductible from NHT
- Education tax calculated as 2% of its assessable profit and it is not deductible for CIT, but deductible for NHT.
- NDDC levy calculated as 3% of corporate budget (Expex+Capex + Opex)
- Flaring penalty is calculated at $4mln/Btu MOD flat and it is not tax deductible for both CIT and NHT
- Withholding tax is applicable at a rate of 7.5%
- 20% of overseas cost is non-deductible for determination of NHT taxable income
- Costs that are not benchmarked, verified and approved are not tax deductible

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 and Contractor visit, prior to execution. 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,	Prior to DG-3 a HAZID workshop aimed at identifying the key hazards will be undertaken. Post DG-3, a QRA will assist in ensuring that the

	site works, construction and operation.	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

Alternative-1: Power Generation at Nembe-1 flowstation and transmission via Submarine cable.

Alternative-2: Power Generation at Nembe-1 flowstation and Transmission via Overhead cables.

Alternative-3: Power Generation at the outskirts of Communities and Gas Supply via Compressed Natural Gas (CNG), transported in Gas Transmission Modules (GTM's).

Alternative-4: Gas supply from Nembe-1 flowstation, Power Generation at outskirts of Nembe, Power transmission via Overhead cables.

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 Concept Engineering Team, supported by Project team (nominated to drive the Project), will be responsible for the project maturation to DG3. This will be done in conjunction with the Electrical Engineering Discipline Team. The Project team will be resident in the SODA and Domestic Gas Project team, and will have a reporting line to the SPDC MD.

As part of the ORP requirements, the project team will achieve the following milestones:

- ✓ Opportunity reframing/ risk management workshop.
- ✓ Produce project cost estimate at DG-3 and FID gates.
- ✓ Develop preliminary project execution plan and basis of design.
- ✓ Organise VAR at each ORP gate, health checks, peer reviews and hazard identification etc.
- ✓ Formal handover of selected concept to Project team after DG-3 gate.

Section 7: Budget provision

The 2010 funding requirement of $3.3mln has been captured in BP09 and has been recommended for approval by the JV Partners.

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
Total Commitment	0.59	0.00	0.00	0.00	0.00	0.00
Cash Flow						
SCD Expenditure	0.00	0.00	0.00	0.00	0.00	0.00
Pre-FID Expenditure	0.59	0.00	0.00	0.00	0.00	0.00
Operating Expenditure	0.02	0.00	0.00	0.00	0.00	0.00
Cash Flow from Operations	0.10	0.11	0.10	0.10	0.10	0.02
Cash Surplus/(Deficit)	(0.49)	0.11	0.10	0.10	0.10	0.02
Profit and Loss						
NIBIAT +/-	0.03	(0.01)	(0.01)	(0.01)	(0.01)	(0.06)
Balance Sheet						
Average Capital Employed	0.36	0.65	0.57	0.51	0.45	0.80

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 $0.59mln Shell share, MOD, 50/50 ($1.97mln 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

EPG-L-N
Date ..../..../....

Supported by:

.....
Chiedozie Emeka
EPF-G-FCR
Date ..../..../....

Supported by:

.....
Emmanuel Adeyeye
EPF-G-FCT
Date ..../..../....

Approved by:

.....
Nwoke Chris
EPF-G-TM
Date ..../..../....

Approved by:

.....
Andrew Birch
EPG-TP
Date ..../..../....

Initiator: _____
Abulokwe, Emeka
(EPG-TPEC)
Date …/…./….

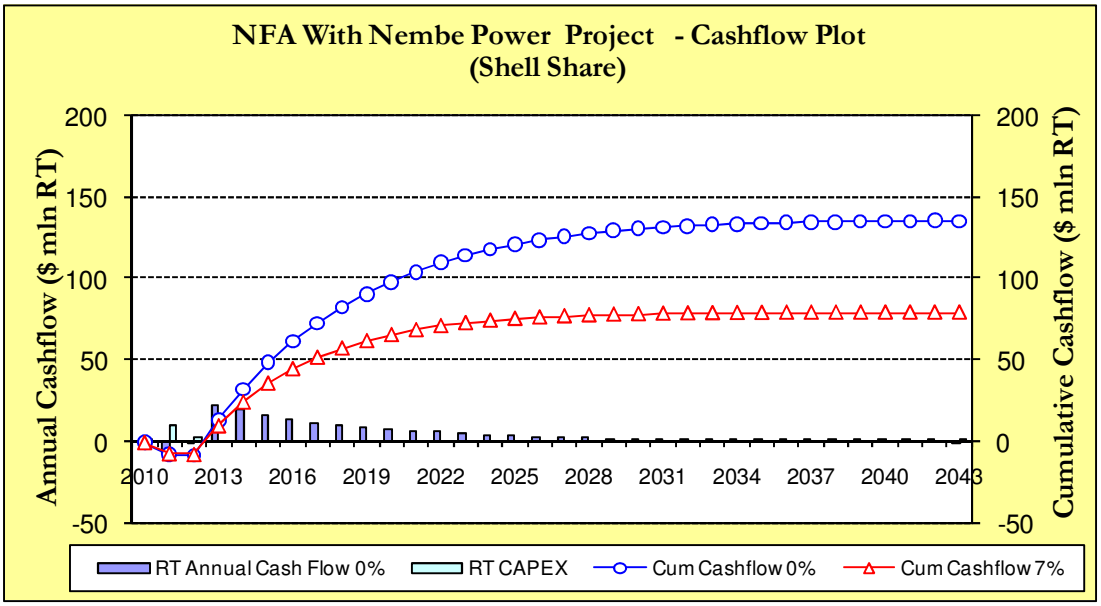
Attachment-1: Minutes of the Nembe Electrical Interdependency Project DRB Meeting –18th November 2009

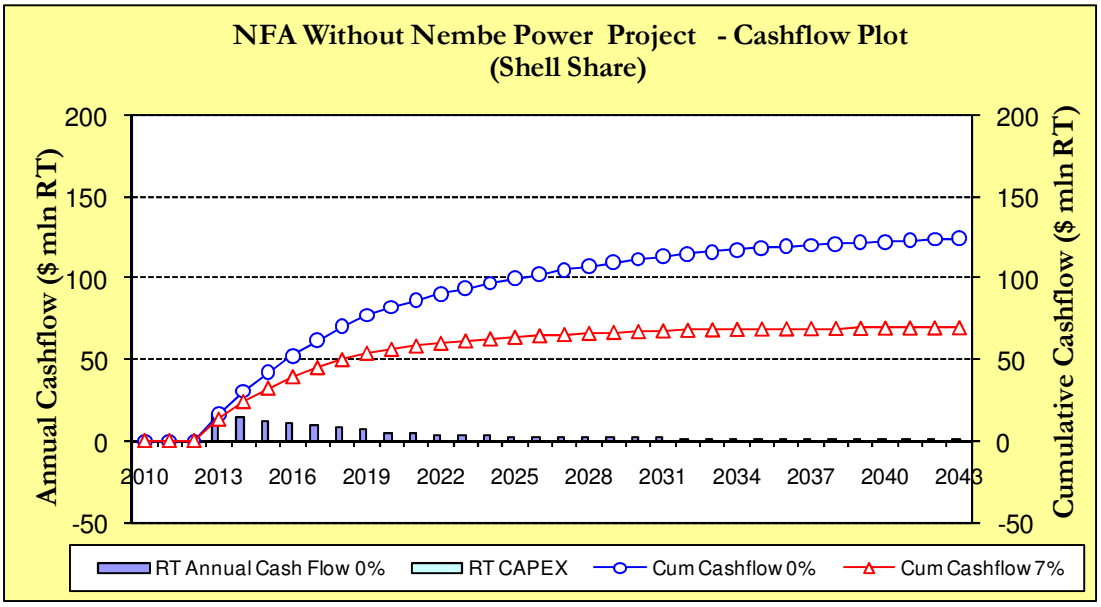
Minutes of Nembe (Ogbolomabiri, Bassambiri and Satellites) Electrical Interdependency Project DRB Meeting
18-Nov-2009.

Date/Gate:	18th Nov 2009	Project	Nembe (Ogbolomabiri, Bassambiri and Sat.) Elect. Interdependency
Decision Executive:	Bayo Olarewaju-Alo	Venue:	PHC – B1 176-177
Panel Members:	Mason Oghenejobo, Vincent Chukwueke, Dipo Olanrewaju	Participants	Emeka Abolukwe, Belije Madu
		BOM	Tony Attah,
Scribe	Victor Agbaroji	Regrets:	Cor Zegeelar, Vincent Holtam, Ubaka Emelumadu, Adeoye Emiloju

Objectives.	Decision Context	Decisions Taken.	Action Party.	Comments.
A. The project seeks to supply electric power to the Nembe communities inter-dependently with the SPDC Flowstations in Nembe. The project is to be executed in phases. Phase-1 will involve Nembe 1,2,3 and Jalingo communities. The phase-1 project is already ongoing and is contract award stage. Phase-2 will involve Nembe metropolis - Ogbolomabiri and Bassambiri, while phase-3 will involve the other Nembe satellite communities. The Nembe (Ogbolomabiri, Bassambiri and Satellites) Electrical Interdependency Project is premised on the deployment of gas-driven power generation that will eliminate the need for the diesel generators currently installed in the Ogbolomabiri, Bassambiri and the satellite communities. In a bid to accelerate the speed of project delivery, the following project execution options will be considered: ❖ SPDC execution of gas supply. SPDC construction and maintenance of power generation, transmission and distribution network. ❖ SPDC execution of gas supply. 3rd part Build, Own, Operation and Maintenance of power generation, transmission and distribution network. Since one of the execution options being	❖ Step Out from the current SPDC Electrical Interdependence Policy ❖ Approval to initiate the Nembe (Ogbolomabiri, Bassambiri and Satellites) Electrical Interdependency Project to enhance license to operate in Nembe-1, 2 3 and 4 flow stations. ❖ Support and approve resources for maturation of this project through the Opportunity Realisation Process. ❖ Approval for the project to hold a combined PAR2/3. ❖ Approval to initiate pre-FID approval for the following activities (i) Commence EIA study. (ii) Initiate the gas line route survey. (iii) Commence process for the procurement and coating of the 6-inch gas line.	Decision 1: Not Supported by DE. The DRB recommends that team should revert back to the MD for a written step out outside the approved SPDC inter-dependence policy Decision 2: Supported by DE. It is approved for the project to be initiated. Decision 3: Supported by DE. The project should be resourced accordingly with the requisite functional support to concretise participation by 'support' functions Decision 4: Supported by DE. The DRB supports the team to hold a combined PAR2/3 Decision 5: Supported by DE. The DRB supports this for only activities that are consistent across all options for consideration such as EIA and surveys NO PROCUREMENT is approved Required Actions. 1. The team is to evaluate with strong consideration a 3rd party execution option 2. Involve the commercial team to reduce possible waiting time if the 3rd party option is to be progressed. 3. Revert to the MD for a written step out from the approved SPDC inter-dependence policy. 4. Hold the planned PAR2/3 ASAP (Dec/Jan)	Emeka Emeka Bayo Emeka	-

Appendix 1:




NFA Without Nembe Power Project - Cashflow Plot
(Shell Share)
Annual Cashflow ($ mln RT)
Cumulative Cashflow ($ mln RT)
200
150
100
50
0
-50
2010
2013
2016
2019
2022
2025
2028
2031
2034
2037
2040
2043
RT Annual Cash Flow 0%
RT CAPEX
Cum Cashflow 0%
Cum Cashflow 7%