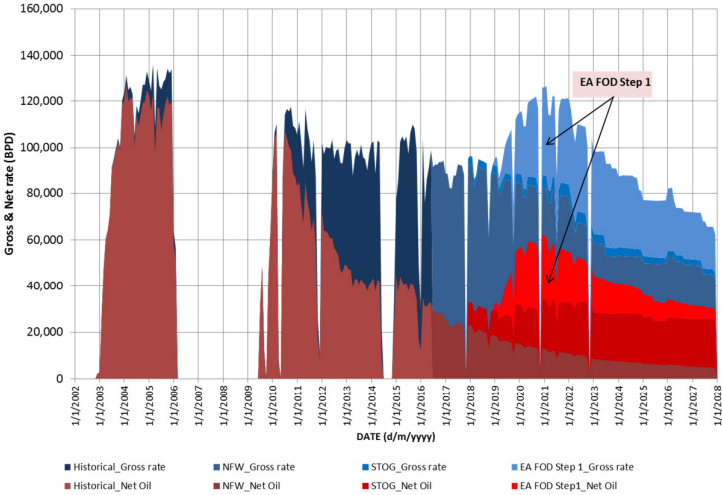
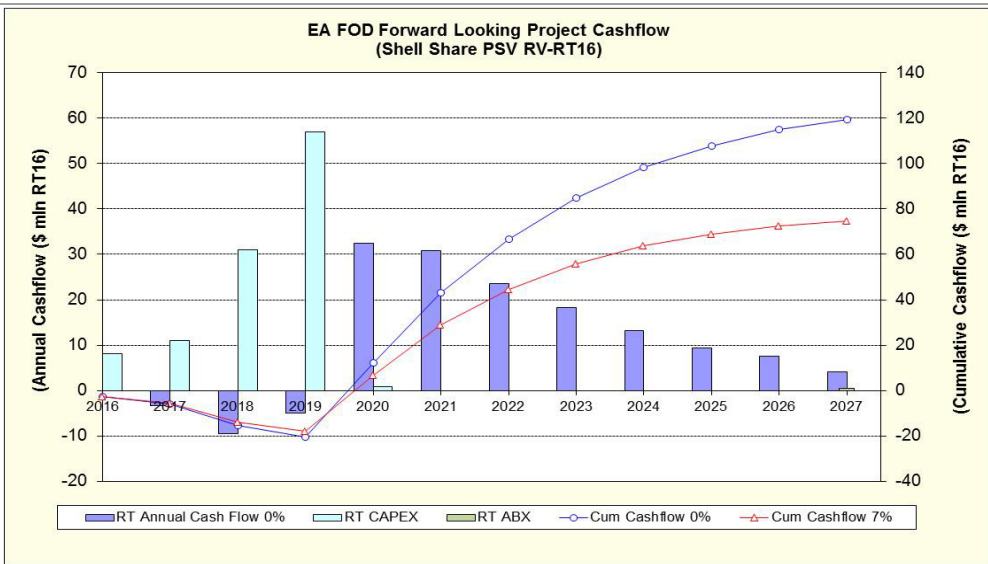


# Investment Proposal

## Summary information

Business unit and company	The Shell Petroleum Development Company of Nigeria(SPDC)																																																																								
Group equity interest	100% in SPDC, whereas SPDC is the Operator of an unincorporated JV with a 30% participating interest share.																																																																								
Other shareholders /Partners	Nigeria National Petroleum Company (NNPC: 55%), Total E&P Nigeria Limited(TEPNL): 10%, Nigeria Agip Oil Company (NAOC: 5%) in SPDC-JV																																																																								
Business or Function	Upstream International																																																																								
Amount	Pre-FID commitment: USD8.1 mln Shell Share, MOD, 50/50, (USD 27mln 100% Unit) Lifecycle: USD 115mln Shell Share, MOD, 50/50 (USD 384mln 100% Unit)																																																																								
Project	EA FOD Step1 – pre-FID commitment																																																																								
Main commitments	<table><tr><th>Description</th><th>Previously Approved IP 2015</th><th>2015 Spend to Date</th><th>Available from 2015 IP</th><th colspan="2">This Proposal</th><th colspan="2">Revised Pre-FID IP Budget</th></tr><tr><th>USD (mln) 50/50 MOD</th><th>100%</th><th>100%</th><th>100%</th><th>100%</th><th>Shell Share</th><th>100%</th><th>Shell Share</th></tr><tr><td>EIA/BM Studies</td><td>2.94</td><td>2.03</td><td>0.91</td><td>-</td><td>-</td><td>2.94</td><td>0.88</td></tr><tr><td>PMT</td><td>0.60</td><td>0.42</td><td>0.18</td><td>-</td><td>-</td><td>0.60</td><td>0.18</td></tr><tr><td>Casing &amp; Accessories</td><td>-</td><td>-</td><td>-</td><td>11.52</td><td>3.46</td><td>11.52</td><td>3.46</td></tr><tr><td>Sand Control/Chemicals</td><td>-</td><td>-</td><td>-</td><td>3.23</td><td>0.97</td><td>3.23</td><td>0.97</td></tr><tr><td>Tubing &amp; Other Completions</td><td>-</td><td>-</td><td>-</td><td>5.90</td><td>1.77</td><td>5.90</td><td>1.77</td></tr><tr><td>Wellhead/ Xmas trees</td><td>-</td><td>-</td><td>-</td><td>6.41</td><td>1.92</td><td>6.41</td><td>1.92</td></tr><tr><td><b>Total USD mln, 50/50 MOD</b></td><td><b>3.54</b></td><td><b>2.45</b></td><td><b>1.09</b></td><td><b>27.06</b></td><td><b>8.12</b></td><td><b>30.60</b></td><td><b>9.18</b></td></tr></table> <p>This Pre-FID IP is for the EA FOD Step 1 Project commitment on Long Lead Items being wellheads and well accessories required to ensure a project On Stream Date in December 2018. It is a supplemental IP on the Pre-FID IP Feasex of USD3.5mln (100% JV) approved in 2015 for EIA, see attachment 1. Table 1 (above) shows details of this proposal and earlier approved IP.</p>	Description	Previously Approved IP 2015	2015 Spend to Date	Available from 2015 IP	This Proposal		Revised Pre-FID IP Budget		USD (mln) 50/50 MOD	100%	100%	100%	100%	Shell Share	100%	Shell Share	EIA/BM Studies	2.94	2.03	0.91	-	-	2.94	0.88	PMT	0.60	0.42	0.18	-	-	0.60	0.18	Casing & Accessories	-	-	-	11.52	3.46	11.52	3.46	Sand Control/Chemicals	-	-	-	3.23	0.97	3.23	0.97	Tubing & Other Completions	-	-	-	5.90	1.77	5.90	1.77	Wellhead/ Xmas trees	-	-	-	6.41	1.92	6.41	1.92	<b>Total USD mln, 50/50 MOD</b>	<b>3.54</b>	<b>2.45</b>	<b>1.09</b>	<b>27.06</b>	<b>8.12</b>	<b>30.60</b>	<b>9.18</b>
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Reserves/Resources	Develop additional volumes of 14.6 MMboe, SS, by 2027 with OSD in Dec 2018.																																																																								
Production	<p>The project will develop additional volumes of 46.34MMstb of oil and 13.49Bscf associated sales gas contingent resource (2C) from EA and EJA fields via drilling and completion of 13 new development wells and 1 work over well. Of this volume, 12.26 MMstb of oil and 3.28 Bscf are contingent on the appraisal scope within the project. Incremental oil production from this project peaks at 24,985 bopd (annualized) in 2020, with associated sales gas production reaching circa 9.89 MMscfd by 2020 (Figure 4).</p> <p><b>EA/EJA Actual Production and OP16 Forecast Profile</b></p> 																																																																								

# Investment Proposal

	Figure 4: EA/EJA Actual Production and Alternative Funding Forecast Profile																																																							
Source and form of financing	Shell Share of capital expenditure will be met by SPDC's own cash flow. NNPC's share will be financed through Alternative Funding (AF) arrangement.																																																							
Summary cash flow	<div><p><b>EA FOD Forward Looking Project Cashflow (Shell Share PSV RV-RT16)</b></p><p><b>EA FOD Forward Looking Project Cashflow (Shell Share PSV RV-RT16)</b></p><p>The chart displays financial data from 2016 to 2027. The left Y-axis represents Annual Cashflow (\$ mln RT16) ranging from -20 to 70. The right Y-axis represents Cumulative Cashflow (\$ mln RT16) ranging from -40 to 140. The X-axis shows years from 2016 to 2027. The legend includes: RT Annual Cash Flow 0% (blue bars), RT CAPEX (cyan bars), RT ABX (green bars), Cum Cashflow 0% (blue line with circles), and Cum Cashflow 7% (red line with triangles).</p><table><caption>Estimated Annual Cashflow Data (\$ mln RT16)</caption><thead><tr><th>Year</th><th>RT Annual Cash Flow 0%</th><th>RT CAPEX</th><th>RT ABX</th></tr></thead><tbody><tr><td>2016</td><td>-5</td><td>8</td><td>0</td></tr><tr><td>2017</td><td>-5</td><td>10</td><td>0</td></tr><tr><td>2018</td><td>-5</td><td>30</td><td>0</td></tr><tr><td>2019</td><td>-5</td><td>58</td><td>0</td></tr><tr><td>2020</td><td>32</td><td>0</td><td>0</td></tr><tr><td>2021</td><td>30</td><td>0</td><td>0</td></tr><tr><td>2022</td><td>23</td><td>0</td><td>0</td></tr><tr><td>2023</td><td>18</td><td>0</td><td>0</td></tr><tr><td>2024</td><td>13</td><td>0</td><td>0</td></tr><tr><td>2025</td><td>9</td><td>0</td><td>0</td></tr><tr><td>2026</td><td>7</td><td>0</td><td>0</td></tr><tr><td>2027</td><td>4</td><td>0</td><td>0</td></tr></tbody></table></div>				Year	RT Annual Cash Flow 0%	RT CAPEX	RT ABX	2016	-5	8	0	2017	-5	10	0	2018	-5	30	0	2019	-5	58	0	2020	32	0	0	2021	30	0	0	2022	23	0	0	2023	18	0	0	2024	13	0	0	2025	9	0	0	2026	7	0	0	2027	4	0	0
Year	RT Annual Cash Flow 0%	RT CAPEX	RT ABX																																																					
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## Section 1: The proposal (management summary)

This Pre-FID Investment Proposal seeks organisational approval additional USD27mln (MOD, 100% 50/50) funding for ordering of wells long lead items towards the execution of EA FOD Step1 Project. The main objective is to enable ordering of the wells LLIs - Conductor Sharing Wellheads which have a 15-month procurement lead time and other associated equipment project to support delivery of 1st oil in December 2018. This commitment has received the support of the AF Joint Funding Team. See attachment 1.

A further commitment of USD6.5mln (MOD, 100%) on EA FOD1 is required to support rig mobilisation commitment in September 2016 to ensure timely start of drilling in Forcados and subsequently EA, and guarantee on-stream dates. The total rig mobilisation cost estimate of USD8.3mln (MOD, 100%) is shared by the Forcados offshore/NAG wells and the EA FOD1 project.

Delaying the pre-FID commitment until financial close would result in:

- **Schedule Delay:** This directly impacts the schedule and delays the on-stream-date delivery significantly.
- **Reduction in Produced Oil Volume:** In view of the Sea Eagle FPSO end 2027 cut-off date assumed in the forecast premise, a delay in production reduces the total additional recoverable volume developed for the project pre-dry dock. Monthly reduction is estimated to be 0.3% of total volume pre dry-dock.

# Investment Proposal

**Table 2: Full Project Expenditure Description and Phasing (MOD)**

DESCRIPTION (in USD Mln)	Proposal (100%)	Proposal (Shell)	2016 (100%)	2016 (Shell)	2017 (100%)	2017 (Shell)	2018 (100%)	2018 (Shell)	2019 (100%)	2019 (Shell)	2020 (100%)	2020 (Shell)
<b>FACILITIES SCOPE</b>												
Detailed Engineering (13 well scope)	0.68	0.20			0.68	0.20						
Procurement (13 well Scope)	3.00	0.90					3.00	0.90				
Mob/Demob for Hookup	0.50	0.15					0.40	0.12			0.10	0.03
Onshore Fabrication	1.06	0.32					1.06	0.32				
Offshore Installation	1.99	0.60					0.25	0.08	1.49	0.45	0.25	0.08
Contractor PMT	0.71	0.21			0.16	0.05	0.16	0.05	0.33	0.10	0.06	0.02
Pre-Construction Tie-ins	0.69	0.21			0.69	0.21						
Logistics/Consumables/Messing	1.98	0.59			0.03	0.01	0.68	0.20	0.66	0.20	0.62	0.19
Owner's Cost	3.35	1.00			0.67	0.20	1.00	0.30	1.17	0.35	0.51	0.15
NPT + VAT (Facilities)	2.12	0.64			0.31	0.09	1.11	0.33	0.49	0.15	0.21	0.06
<b>Sub-total Facilities</b>	<b>16.09</b>	<b>4.83</b>	<b>0.00</b>	<b>0.00</b>	<b>2.54</b>	<b>0.76</b>	<b>7.66</b>	<b>2.30</b>	<b>4.14</b>	<b>1.24</b>	<b>1.75</b>	<b>0.52</b>
<b>WELLS SCOPE</b>												
Rig mob+ startup	4.72	1.41					4.72	1.41				
Development Drilling & Completion	354.53	106.36	27.06	8.12	34.84	10.45	95.33	28.60	197.29	59.19		
PDSS	0.24	0.07							0.24	0.07		
Rig demob	1.47	0.44									1.47	0.44
SCD	7.22	2.17			2.89	0.87	2.17	0.65	2.17	0.65		
<b>Sub-total Wells</b>	<b>368.18</b>	<b>110.45</b>	<b>27.06</b>	<b>8.12</b>	<b>37.73</b>	<b>11.32</b>	<b>102.22</b>	<b>30.66</b>	<b>199.69</b>	<b>59.91</b>	<b>1.47</b>	<b>0.44</b>
<b>TOTAL</b>	<b>384.3</b>	<b>115.3</b>	<b>27.1</b>	<b>8.1</b>	<b>40.3</b>	<b>12.1</b>	<b>109.9</b>	<b>33.0</b>	<b>203.8</b>	<b>61.1</b>	<b>3.2</b>	<b>1.0</b>

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

The EA FOD Step 1 project aligns with SPDC's goals and priorities. It was instrumental to the case for the renewal of OML 79 license in December 2014. The project will develop additional volumes of 46.34MMstb of oil and 13.49Bscf associated sales gas contingent resource (2C) from EA and EJA fields via drilling and completion of 13 new development wells and 1 work over well.

### 2.1 Summary Economics

The results of the Pre-FID evaluation are shown in Table 1, cost-only without revenue. The full project value is in Table 2 below, using the 50/50 full project cost estimates and the production forecast as provided by the team and supported by relevant TAs.

Sensitivities were also carried out on the base case to show the impact of various scenarios on the value of the project. Refer to the Tornado chart1 below for the results of these sensitivities.

The base case assumes the presidential advised price of \$2.3/Mscf for the EA/Bonga gas diversion to Gigagas. This price has been kept flat in MOD for the life of the project though subject to negotiations and as such, represents a pessimistic view. The project returned robust VIR7 above the screening value of 0.6 for both the base case and various sensitivities.

**Table3: PRE-FID Economics (Shell Share RV RT-16)**

PV Reference Date : 1/7/2016	NPV \$US mln Shell Share		VIR	RTEP	UTC \$/bbl - RT		Payout Time(RT)	Maximum Exposure. (Shell Share)
<b>Cash flow forward from : 2016</b>	<b>0</b>	<b>7%</b>	<b>7%</b>	<b>%</b>	<b>0%</b>	<b>7%</b>	<b>Year</b>	<b>\$mIn, (yyyy)</b>
Base Case								
RV (\$80/bbl, RT16)	-1.2	-1.4	-0.17	NA	NA	NA	NA	2.5
<b>Sensitivities (Using PSV-RV)</b>								
High Pre-FID cost (+15%)		-1.6	-0.17					

# Investment Proposal

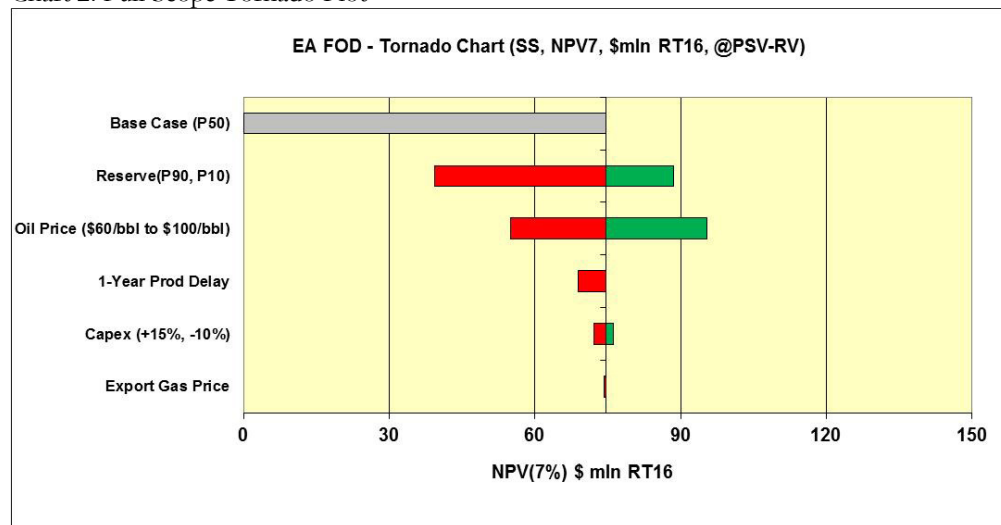
Table 4: Full Project Economics Result (Shell Share RV RT-16)

PV Reference Date: 1/7/2016	NPV (S/S \$ mln)		VIR	RTEP	UTC (RT \$/bbl)		Payout-Time (RT)	Maximum Exposure
Cash flow forward from: 1/1/2016	0%	7%	7%	%	0%	7%	(yyyy)	\$mln (yyyy)
Base Case								
SV (\$60/bbl RT16 & NGMP Gas Profile)	89.3	54.9	0.59					
RV (\$80/bbl RT16 & \$2.30/mmbtu Flat)	119.2	74.5	0.80	65%	9.1	11.1	2020	20.3
HV (\$100/bbl RT16 & \$NGMP Gas Profile)	151.1	95.5	1.03					
<b>Sensitivities (using RV)</b>								
RV (\$80/bbl RT16 & \$2.30/mmbtu Flat) Pre-FID cost	-1.2	-1.4	-0.17	NA	NA	NA	NA	2.5
High Capex (+15%)		72.1	0.68					
Low Capex (-10%)		76.2	0.91					
High Production (P10)		88.6	0.95					
Low Production (P90)		39.3	0.43					
1-Yr Production Delay		69.0	0.74					
Base (Export Gas Price)		74.3	0.80					

Table 5: Key Project Parameters Data Ranges (100% Project)

Parameter	Unit	Low	Mid	High	Comments
Capex (MOD)	US\$ mln	339.3	377.0	433.6	Capex for EA FOD Step1
Opex (MOD)	US\$ mln	12.0	13.0	13.4	Opex includes SCD and ABCM.
Production Volume	mln boe	28.8	48.7	57.2	
Start Up Date	mm/yy	Jun-19	Dec-18	Dec-18	
Production in first 12 months	mln boe	2.63	4.58	4.60	

Chart 2: Full Scope Tornado Plot



# Investment Proposal

## Economics Assumptions

- Oil Price of \$80/bbl RV-RT16 assumed as base with short term prices.
- Gas price of \$2.30/mmbtu MOD flat, used as base case in view of EA/Bonga gas diversion to Giga Gas.
- Export Gas price of \$1.66/mmbtu RT-16 and NGMP Domestic gas profile used as sensitivities respectively
- Oil was taxed under PPT (PPT tax rate of 85%).
- Flare charge of N10/Mscf
- ABCM OPEX used in the evaluation as provided by the project team
- SCD assumed as 2.5% of MOD Capex
- Gas taxed under CITA with AGFA (Associated Gas Framework Agreement) incentive.
- NDDC levy of 3% total expenditure.
- Education tax of 2% assessable profit.
- Gas Heating Value (GHV) of 1000btu/scf and 1150btu/scf Domestic and Export respectively.
- 10% of RT Capex assumed as abandonment cost.

## ***Section 3: Risks, Opportunities, Mitigation Plans and Alternatives***

### **Key Risks**

#### ***Economic***

- *Project Cancellation or non-closure of Alternative Funding:* This investment is expected to be financed with Alternative Funding (AF) arrangement. In the unlikely event that Financial Close for the AF arrangement is not achieved, the LLIs will be funded through individual JV partner cash call contributions. Shell Share of capital expenditure will be met by SPDC's own cash flow. A resolution has been signed by the JFT members to this effect, and NOAC, who is not participating in the AF, has been formally informed. Furthermore, the exposure on cancellation is \$1.9mlnSS and \$0.3mln NAOC share (being cost for the conductor sharing wellheads currently only used on the EA drilling platforms and thus cannot be capitalised). See table 1.
- *Schedule slippage:* The project economics is sensitive to schedule slippage and there are multiple items on critical path. These include: Order of Wells LLI, EIA approval, Award of Contracts, Funding Agreement, Rig mobilization for Forcados offshore activities (as Forcados offshore wells precede the EA wells on the drilling sequence), completion of detailed engineering design, procurement of well-hook up items, drilling and hook-up of first two wells and first oil.

#### ***Commercial***

- *Early Procurement of Wells Long Lead Items:* With the longest procurement lead time of 15 months, the conductor sharing wellheads stand out as a critical path item on project first oil delivery. Support for this IP enables order of the wells long lead items in August, and a first spud date in EA by November 2017. The NAPIMS award recommendation for the wellhead contract has been received, contract loaded in OMNICON and approval received from the Joint Funding Team (NNPC/NAPIMS/SPDC/TEPNG) to commit the required USD27mln (100%) ahead of AF financial closure. See attachment 2.
- *Lack of Funding:* The LLI commitments are to be funded under ongoing Alternative Funding mechanism. This proposal seeks commitment on the LLIs ahead of AF financial close. The mitigation in place is a formal commitment by the Joint Funding Team (NNPC, NAPIMS, SPDC, TEPNG) to honour cash call request for the LLIs in the unlikely event that AF Financial Close is not achieved. NAOC, who is not part of the AF arrangement, has been issued similar commitment recommendation for their support.
- *Cost Escalation:* Though the expectation is that prices will remain stable or go lower due to global market demand, bid price escalation in drilling and facilities tenders may occur due to a perceived increase in country risk due to the Niger Delta security situation. This is mitigated by ensuring that the right contingency, risks premium and inflation are incorporated in the level 3 cost estimates.
- *Project Cancellation or Early Termination of Rig Contract:* In the unlikely event of project cancellation or reduction of project scope, early termination fee (ETF) or rig stacking cost will be borne by the project. Termination Fee is estimated as 50% of Operating Day Rate x Remaining Days of CONTRACT DURATION. Also, the project will bear the cost of well equipment (e.g. Wellhead, Christmas tree, 36" conductors, etc.) already ordered or received that may not be transferable to any other project.

# Investment Proposal

- *Schedule slippage:* The project economics is sensitive to schedule slippage and there are multiple items on critical path. These include: Order of Wells LLI, EIA approval, Award of Contracts, Funding Agreement, Rig mobilization for Forcados offshore activities (as Forcados offshore wells precede the EA wells on the drilling sequence), complete detailed engineering design, procurement of well-hookup items, drilling and hook-up of first two wells and first oil.
- *Contract:* Conductor Sharing Wellhead dedicated Contract now in place with adequate ceiling for the required work scope.

## ***Political***

- *Environmental Impact Assessment [EIA] Approval:* The project schedule is premised on receipt of EIA approval by August 2016, before alternative funding (AF) financial closure; and thereafter FID will be taken. The EIA approval from FMEnv was received 30 June 2016. The EIA approval from DPR is expected in August 2016. This EIA is premised on the outcome of the environmental evaluation (EE) and biological monitoring (BM) studies which have now been completed and draft report prepared (the EE and BM work scope were the focus of the approved 2015 Pre-FID IP). The project team's outlook on this approval remains August 2016.

## ▪ **Key Opportunities**

The key opportunities identified in the project are as follows:

### **Economic, Commercial**

- *Schedule:* Ordering of the LLIs enables timely arrival of equipment and materials, timely start of drilling to ensure promised OSD and additional produced volume pre-dry-dock can be secured.
- *Production:* Ordering of the LLIs enables timely arrival of equipment and materials, timely start of drilling to ensure promised OSD and additional produced volume pre-dry-dock can be secured.

### ***Section 4: Carbon management***

Based on GHG assessment carried out, the CO2 emission for this project is expected to less than 50ktpa. Therefore, no GHG Plan is required.

### ***Section 5: Corporate structure, and governance***

This project fits within the existing SPDC corporate structure and governance. Consequently, it will comply and respect all relevant and existing governance requirements.

### ***Section 6: Functional Support and consistency with Group and Business Standards***

This proposal complies with Group Business Principles, policies and standards. Full functional support covering SCD is provided for in the full project scope. Additionally, there will be a focus on Nigerian Content Development (NCD) as already indicated above. The Finance, Supply Chain Management, Legal, and Tax functions have provided functional support for this Investment Proposal.

### ***Section 7: Project management, monitoring and review***

The project is managed by a properly constituted project team. The Project Controls and Assurance Plan (PCAP) is compliant with the ORS having project specific DRB, DE, BOM and PM in place. A Project Control and Assurance Plan (PCAP & OAP) have been approved to define the applicable controls for DEFINE phase.

### ***Section 8: Budget provision***

The project funding plan (including the long lead items) is included firmly in OP16, as it will be funded through Alternative Funding (AF) arrangement.

### ***Section 9: Group financial reporting impact***

There is no material Group financial reporting impact and financial impact analysis is not required as this pre-FID IP is below the threshold of USD20mln, MOD Shell share.

### ***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 Alternative Funding (AF) arrangement. In the unlikely event that Financial Close for the AF arrangement is not achieved, the LLIs will be funded through individual JV partner cashcall contributions. Shell Share of capital expenditure will be met by SPDC's own cash flow.

# Investment Proposal

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

There are no unusual taxation features at this stage.

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

### Expenditure:

The main aspect of this proposal is the approval for commitment in Q3 2016:

USD27mln, MOD, 50/50 100% JV (i.e. USD8.1mln, Shell Share) for EA FOD Step1 long lead items namely, Conductor Sharing Wellheads and associated equipment.

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

This Proposal is submitted for organizational approval.

Supported by:

For Organizational approval:

.....  
Jan Van Bunnik

SPDC Finance Director

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

.....  
Philip Mshelbila  
GM, Gas  
Date.... / .... / ....

*Initiator:*        *Esben Johnsen UPO/G/DJ*

## **Appendices:**

Appendix-I – Economic Assumptions.

Sensitivities were carried out to assess the project value at the following conditions:

1. The project Full Life Cycle (EoFL)
2. High (P10) and Low (P90) realizations
3. High (P90) and Low (P10) CAPEX
4. 1 year production delay.
5. 2019 License Expiry

### **Attachments:**

1. 2015 Approved Pre-FID-IP
2. Signed Resolution on JFT Commitment for LLI

## EA Further Oil Development Project – Step 1 e-IP Approvals (SPDC 152761)

<input type="checkbox"/> Controller	Ike , Ndubuei	Supported	Supported subject to budget availability.	27-APR-2015	30-APR-2015
<input type="checkbox"/> Legal	Blum , Barbara	Supported		27-APR-2015	06-MAY-2015
<input type="checkbox"/> Tax	Otinle , Oledapo	Supported	Supported	27-APR-2015	08-MAY-2015
<input type="checkbox"/> Treasury	George , Lolomari	Supported		27-APR-2015	28-APR-2015
<input type="checkbox"/> Economics	Akande , Olujimi	Supported		28-APR-2015	28-APR-2015
<input type="checkbox"/> SPCA					19-MAY-2015
<input type="checkbox"/> HSE	Amadi , Amadi	Supported	Supported	12-MAY-2015	12-MAY-2015
<input type="checkbox"/> Security	Eosa , Edet	Supported	A signed off Security Plan required prior to commencement.	12-MAY-2015	12-MAY-2015
<input type="checkbox"/> IT					
<input type="checkbox"/> SCM	Moskinyo , Odekan	Supported	Note that LDL may be required to proceed with the contract.	11-MAY-2015	
<b>Finance Support/Approval</b>					
<input type="checkbox"/> Finance Signature	Okunade , Mojeed	Approved	Approved	20-MAY-2015	20-MAY-2015
<input type="checkbox"/> Finance Director					
<input type="checkbox"/> GM Finance					
<b>Organisational Support</b>					
<input type="checkbox"/> Corporate Planning Mgr					
<input type="checkbox"/> GM Regional Planning					
<input type="checkbox"/> Capital Expenditure Review Panel					
<b>Organisational Approval</b>					
<input type="checkbox"/> General Manager	Olegunju , Toyin	Awaiting review		21-MAY-2015	
<input type="checkbox"/> Regional Vice President					



## Internal Investment Proposal (Pre-FID IP-Lite)

Business unit	Shell Petroleum Development Company of Nigeria Limited (SPDC)			
Group Equity Interest	30%, with SPDC as Operator of an incorporated Joint Venture (JV)			
Shareholders / partners	Nigeria National Petroleum Corporation (NNPC: 55%), Total Exploration & Production Nigeria Limited (TEPNL: 10%), Nigeria Agip Oil Company (NAOC: 5%) in SPDC-JV			
Amount (Shell Share) MOD, 50/50	Environmental Impact Assessment (EIA)/ Environmental Evaluation/ Biological Monitoring (BM) : 0.88 USD mln SS (MOD) Project Management Team (PMT) Cost : <u>0.18 USD</u> mln SS (MOD) <b>Total : 1.06 USD mln SS (MOD)</b>			
Project	Pre FID IP-Lite for EA Further Oil Development (FOD) Project - Step 1			
Summary Economics	Summary economics	NPV7 (USD mln)	RTEP (%)	VIR7
	Base Case	-0.16	NA	NA
	High OPEX(+25%)	-0.20	NA	NA
	Full Project	105.3	>100%	1.04

### Proposal Management Summary

The EA FOD Step I Project Scope is to drill, complete & hook-up 13 new wells and 1 work over from existing drilling platforms DP-A, DP-B and DP-J.

The purpose of this document is to request funds (USD 1.05 mln Shell Share) for Environmental Impact Assessment (EIA), Environmental Evaluation Studies (EES) & Biological Monitoring Studies (BM) plus costs for Project Management (PMT) which will be carried out within the year until approval of the Investment Proposal for the Group Final Investment Decision (FID), which is scheduled for December 2015 (Deterministic).

The EA FOD Project Implementation requires that an EIA approval be secured in time for the delivery of the project. The Department of Petroleum Resources (DPR) has given directive to carry out an Environmental Evaluation and Biological Monitoring Studies for the EA & EJA Fields with the outcome forming the basis for the EA FOD EIA permit.

In addition, the EA Field is a No-Discharge Zone and DPR waiver for discharge has expired. SPDC request to renew waiver in 2011 was rejected by DPR. As it stands, both EES and BM are also mandatory activities for the asset to provide to DPR to guarantee continued production.

There is currently no existing contract within SPDC to accommodate the extensive Biological Monitoring Study scope as approved by the DPR. It is therefore exigent to close the gap by

completing the entire study scope via a separate contract. In addition, the study outcomes will enhance benefits and provide mitigation measures for any adverse impacts (if any) from EA production operations and proposed project, thus, safeguarding people and the environment.

Furthermore, the progress of this project is critically based on alternative funding provision from an International Financier. The International Financier for the project requires an early provision of all relevant approvals to enable their decision on the funding and also require a Q4 2016 On-stream Date for production on the project (FOD Step 1). This requirement has led to a change in the date for the Final Investment Decision (FID) for the EA FOD from Q2 2016 to Q4 2015 thus putting significant pressure on the delivery schedule for the EA FOD EIA permit. In addition, revision by the DPR of the earlier approved studies scope with introduction of an expanded scope has put further pressure on the schedule.

Therefore, if the EA FOD is to be executed in line with revised plan, there is an urgent need for a fast track collation of documentation by April 2015 to satisfactorily meet the investor's requirement and timely support their decision process which helps facilitate funding agreement and guarantee funding provision to progress the project. Also, the project team needs to expedite mobilisation for field data gathering on BM/EIA by May 2015 to guarantee provisional EIA approval by Q4 2015 and final EIA approval by Q2 2016.

The completion of BM/EIA will facilitate the achievement of the main value drivers of the EA FOD which are:

- Achieve additional field development with reward of 50.6MMstb;
- Improve cash flow from operating asset and contribute to SPDC growth aspiration;
- Utilize the available ullage in the FPSO to maximize asset utilization;
- Reduce the unit operating cost by increasing the production in the field

The approved scope of work to be executed for the BM contract includes but not limited to:

- Measurement of the biological effect of the effluent using Laboratory bred organisms exposed to the effluent and other waste water,-acute and chronic (bioaccumulation) tests,
- Determination of the relationship between the physicochemical characteristics of the recipient medium as influenced by the effluent on the functional or structural aspects of the biological community.
- Determination of Eco toxicity, Bio-concentration and Bio-magnification of the effluent constituents within five trophic levels.

The cost basis is detailed in the value proposition paragraph.

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## Value Proposition and Economics Summary

The company estimate is based on prevailing market rates obtained through market survey and experiences drawn from the just concluded Bonga Field Biological Monitoring Studies

(2014) and benchmarked with contract N02003056 with cost estimate breakdown shown in table 1:

**Table 1: BM/EIA Cost Breakdown**

**EA FOD EIA and Biological Monitoring Study VS Bonga Biological Monitoring Costs**

	Item	EA Budget Estimate (F\$)	Bonga Expense (F\$)	Remarks
1	Environmental Baseline (EIA for EA FOD) and Biological Monitoring Data Gathering and analyses and reporting including procurement of test organisms and Habitat	1,571,694	569,984	Scope of EA bigger than Bonga and now include provision for procurement of organisms and Habitat water/ Natural Seawater (Items 6 & 11, below)
2	Hire of Work Vessel (MV Meleody) and Security vessel	668,532	1,155,142	Different vessels for Shallow and Deep Offshore, resp.
3	Remaining FMENV Desktop Approval processes (Panel Review and Accessed charges)	78,906	37,500	Bonga did not do Desktop; cost was for chopper hire.
4	Personnel Carrier & Security Vessel for Regulator's witnessing of, fishing activities and Sea Water Trucking from Bonny (@\$18,000 per day for 43 days)	0	774,000	Some part of the cost captured in number 1.
5	Fuel for Work Vessel (including security)	100,184	330,009	Shallow and deep offshore locations,
6	Supply of Juvenile fish, Mollusc and Crustacean using a fishing Fishing Trawler	0	530,079	(integrated in Item 1, above)
7	Logistics Bookings, Flights and accommodation for all personnel involved (Flight/logistics for regulators x2 each (DPR, FMENV, NIMASA + SPDC CSRs) for the	240,679	191,371	This includes Cost for dedicated DPR staff for the EA EE/BM Study participation and joint review session. EA study duration is longer than for Bonga.
8	Personnel Carrier ( Shadowing fishing	0	5,451	based on Approval not required for EA
9	Navigation and Positioning Contract -	19,325	87,142	Shallow and deep offshore locations,
10	Cost of Hilux from KI to Trans Amadi Daily	9,086	9,416	Supervision of lab work, etc.
11	Fuel , PC, Tug boat and security crew	0	69,272	(integrated in Item 1, above)
12	Personnel Logistics: Accommodation and Feeding for Dedicated Driver & Rep for (120	12,429	4,660	One additional rep to remain in the lab; from Bonga's experience.
14	Cost of Tug Boat from Bonny Terminal to KI	0	119,011	Lab Bred Organism to be used (integrated in Item 1, above).
15	Technical Support from Shell Global Solution including Microtox and SPME Bioassay	100,000	100,000	For EA, This cost covers Fate and Effects study/ Produced Water Discharge
	<b>Sub-Total</b>	<b>2,800,835</b>	<b>3,983,037</b>	
	Contingency (5%)	140,042	199,152	
	<b>Total Estimated Cost (inc. 5% contingency)</b>	<b>2,940,877</b>	<b>4,182,189</b>	

The associated total PMT cost Pre-FID is 0.6 mln USD. This project cost will be treated as Opex in line with the classification of all Pre-FID costs and the detailed cost breakdown leading to the Shell Share is shown in table 2:



Table 2: Cost Breakdown Grid (Shell Share)

Cost Description	USD (mln)	Shell Share (USD mln)
BM/EIA	2.94	0.87
PMT	0.60	0.18
<b>Total</b>	<b>3.54</b>	<b>1.06</b>

## Risks and Alternatives

To deliver the BM/EIA, the project team has to manage the following significant risks and issues:

### Funding

**Issue & Risk:** Without a satisfactory Biological Monitoring and EIA assessment, the EIA approval from DPR would not be assured and the International Financiers will not fund the project.

**Mitigation:** Following engagements with DPR, the Terms of Reference (ToR) for the BM/EIA has been approved and ITT has been issued with a view to conclude contracting process and award contract in April and mobilise in May for the field data gathering once the Pre IP-Lite is approved.

### Local Content Requirements

**Issue & Risk:** The Nigerian Content Development Management Board (NCDMB) guideline requires compliance to local content utilisation, field execution and analysis to be performed in-country.

**Mitigation:** The project team has taken the risk of non-compliance to the NCDMB guidelines into consideration and ensured that the contracting strategy has minimised this risk. The contractors under consideration for ITT are 100% local contractor.

### Incompetent Contractor/Personnel

**Issue & Risk:** Execution of these project activities by an incompetent contractor / contractor personnel resulting to increased HSE risk and potential ineffective emergency response.

**Mitigation:** To mitigate this risk the project, environmental and commercial teams have put in place a thorough ITT and assessments (capability and commercial) to ensure that the competency, capacity and standards required are fully guaranteed.

### Dropped Object during Lifting Operation

**Issue & Risk:** Accidental dropping of object during loading and unloading of equipment into vehicle/vessel can result to injury to personnel or damage to the equipment.

**Mitigation:** The project team shall ensure that only trained personnel are employed in loading/unloading operations of equipment; daily tool box meetings are held; full site supervision

is in place, appropriate and adequate PPEs are used; only pre-moiled equipment are used and overloading of vehicles/vessels/boats are avoided.

### Alternatives

Alternatives considered was to use any existing contract within SPDC to close the gap, unfortunately no suitable contract currently exist in the company as this scope was just newly introduced by the DPR. The EIA/EES scope is however via an existing call of contract with the SPDC environment team.

### Carbon Management

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The proposal will not add appreciable amounts of flare gas hence Carbon Management effects have not been considered.

### Corporate Structure and Governance

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The existing corporate structure and governance arrangements of the EA FOD with SPDC as operator still subsist for this investment.

### Group and Business Standards

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This proposal complies with Group Business Principles, policies and standards. Functional support for this proposal is provided by Finance, Social Performance, Supply Chain Management, HSE, Operations, Legal, Treasury and Tax functions.

### Project Management, Monitoring and Review

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There is an identified Decision Executive, Business Opportunity Manager, Front End Development Manager and Project Manager. The existing Project Decision Review Board will control any major change proposals and will monitor value delivery based on reviews. Projects & Technology oversight will be exercised through membership of the DRB.

### Budget Provision

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The project is included in the OP'14 base plan, but budget amount has been revised upward with offset been sought. The requested amount is for the project to execute one-off BM/EIA (USD 2.9 million – 100%, USD 0.87 million – Shell Share), 12 months project management team expenditure (USD 0.6 million – 100%, USD 0.18 million – Shell Share). The Pre-FID IP- Lite will be funded via JV, being a FEASEX spend. The current 2015 budget provision is Only 40% of total budget requirement for these activities, shortfall will be addressed through budget offset. The Project post FID is planned to be funded via the Alternative Funding (AF) Arrangement.

### Group Financial Reporting Impact

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No material finance reporting impact.

## Disclosure

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

## Financing

Shell share of the capital expenditure will be met by EA FOD own cash flow – the EA FOD is not generating cash at this stage, so SS will be paid by SPDC Ltd and Unit Partners' funding. Expenditure related to this project will be accounted for in line with Group Policy.

## Taxation

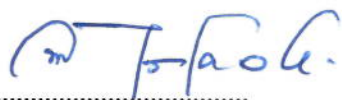
There is no unusual Taxation feature.

## Functional Support

N/A

## Signatures

*Supported by:*

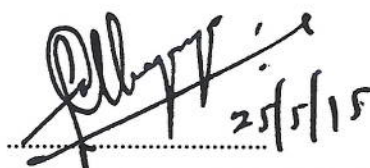


Okunade, Mojeed O SPDC-FPT/PO

FM Projects Nigeria Onshore / Shallow Water Date

21/05/15

*Approved by:*



Olagunju, Toyin AA SPDC-PTP/O/N

GM Project Nigeria - Operated

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



**MINUTES OF NNPC/NAPIMS/ SPDC/TEPNG JFT MEETING**

**Venue:** SPDC Office, Central Business District, Abuja

**Date:** 23<sup>rd</sup> & 24<sup>th</sup> June, 2016

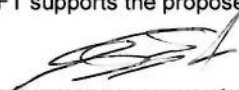
**Purpose:** JFT Meeting on EA FOD1 & Short Term Oil Generation (STOG) Projects


**Action Points**

1. SPDC (Kunle & Fata) has committed to sharing the detailed cash call requirements of the items on the LLIs with hard cash outflow schedule on monthly basis, to all JV partners (**Done**)
2. SPDC (Foster) to provide details of costing for all STOG projects next week.
3. JV partners to review the legal consultant evaluations/rankings from the FA, and revert after internal engagements by next JFT concall on 30<sup>th</sup> June, 2016.
4. 4 legal consultants will be selected (2 International and 2 Nigerian). This will be closed out w/c 27<sup>th</sup> June, 2016.
5. SPDC to schedule a face to face meeting between JFT and NCDB on the peculiarities of the AF, and formulating a special case approach for managing JFT approval processes. Update expected next JFT concall on 30<sup>th</sup> June, 2016
6. Operator to prepare a package of contracts for accelerated NAPIMS approval
7. SPDC to draft a memo for JFT endorsement on item no. 6 above
8. FA to work with the Operator on a risk decision paper for the management of the contracts (rigs), and the impact of executing contracts after financial close on the overall project. Update expected next JFT concall on 30<sup>th</sup> June, 2016.
9. FA to reach out to Lummus with an engagement contract w/c 27<sup>th</sup> June
10. FA to plan financial modelling training for NAPIMS representatives by end of July 2016.
11. Operator to represent additional LLI requirements (USD32Mio out of USD64Mio) prior to financial close, a month before required.

**Resolutions**

1. JFT gives approval of the schedule of long lead items (LLI) totalling USD29.3Mio, (comprising well head equipment and accessories costs for EA FOD: \$27Mio, and Forcados NAG Well: \$2.3Mio) as presented by the JV Operator. This is subject to TEPNG review and feedback on the cash call impact prior to financial close).
2. JFT gives provisional approval of the schedule of long lead items (LLI) totalling USD2.5Mio (comprising facilities cost of Forcados NAG: \$0.7Mio, Forcados Workover Land: \$1.8Mio) as presented by the JV Operator. The final cost is subject to the outcome of the cost review exercise going on in PH.
3. In the unlikely event that the financial close is not achieved on these projects, all committed costs shall be fully underwritten by all JV partners, in the proportion of their shareholding in SPDC JV ventures.
4. JFT supports the proposed memo for an Accelerated approval process through NAPIMS for all critical contracts.

  
For: NNPC

  
For: SPDC

\_\_\_\_\_  
For: TEPNG

  
For: Financial Adviser