

INVESTMENT PROPOSAL

FOR THE BONNY MINOR NAG RESERVOIRS DEVELOPMENT PROJECT

The Shell Petroleum Development Company of Nigeria Limited

Summary Information

Business unit and company	The Shell Petroleum Development Company of Nigeria Limited (SPDC)																																																																				
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: 10%, Nigeria Agip Oil Company (NAOC: 5%) in SPDC-JV.																																																																				
Business or Function	Exploration & Production (EP)																																																																				
Amount	US\$ 38.99mln Shell share (i.e. US\$ 129.95mln 100% JV), 50/50, MOD.																																																																				
Project	Bonny Minor NAG Reservoirs Development Project																																																																				
Main commitments \$ mln (MOD)	<table><tr><th>Description</th><th>JVUS \$mln (100%)</th><th>US \$mln (Shell Share)</th></tr><tr><td>4nos conventional NAG wells drilling and completion</td><td>83.14</td><td>29.94</td></tr><tr><td>Re-completion of 2nos gas wells</td><td>9.41</td><td>2.82</td></tr><tr><td>Location Preparation</td><td>14.61</td><td>4.38</td></tr><tr><td>FEED / Detailed Design (including front-end loading like ESHIA, ROW surveys)</td><td>1.33</td><td>0.40</td></tr><tr><td>4 Gas flowlines (2nos 8" x 7km plus 2nos 6" x 2km carbon steel)</td><td>11.90</td><td>3.57</td></tr><tr><td>Manifold extension</td><td>8.65</td><td>2.60</td></tr><tr><td>SCD</td><td>0.91</td><td>0.27</td></tr><tr><td>Total</td><td>129.95</td><td>38.99</td></tr></table>				Description	JVUS \$mln (100%)	US \$mln (Shell Share)	4nos conventional NAG wells drilling and completion	83.14	29.94	Re-completion of 2nos gas wells	9.41	2.82	Location Preparation	14.61	4.38	FEED / Detailed Design (including front-end loading like ESHIA, ROW surveys)	1.33	0.40	4 Gas flowlines (2nos 8" x 7km plus 2nos 6" x 2km carbon steel)	11.90	3.57	Manifold extension	8.65	2.60	SCD	0.91	0.27	Total	129.95	38.99																																						
Description	JVUS \$mln (100%)	US \$mln (Shell Share)																																																																			
4nos conventional NAG wells drilling and completion	83.14	29.94																																																																			
Re-completion of 2nos gas wells	9.41	2.82																																																																			
Location Preparation	14.61	4.38																																																																			
FEED / Detailed Design (including front-end loading like ESHIA, ROW surveys)	1.33	0.40																																																																			
4 Gas flowlines (2nos 8" x 7km plus 2nos 6" x 2km carbon steel)	11.90	3.57																																																																			
Manifold extension	8.65	2.60																																																																			
SCD	0.91	0.27																																																																			
Total	129.95	38.99																																																																			
See Table 1 for expenditure phasing.																																																																					
Source and form of financing	This investment will be financed from JV funding. Shell share capital expenditure will be met by SPDC’s own cash flow and/or the existing shareholder facility.																																																																				
Summary cash flow	<table border="1"><caption>Bonny NAG Monor reservoir Devt Project -Cashflow (Shell Share PSV RV-RT)</caption><thead><tr><th>Year</th><th>RT Annual Cash Flow 0% (\$ mln RT)</th><th>RT CAPEX (\$ mln RT)</th><th>Cum Cashflow 0% (\$ mln RT)</th><th>Cum Cashflow 7% (\$ mln RT)</th></tr></thead><tbody><tr><td>2010</td><td>0.0</td><td>0.5</td><td>0.0</td><td>0.0</td></tr><tr><td>2011</td><td>-0.5</td><td>1.5</td><td>-0.5</td><td>-0.5</td></tr><tr><td>2012</td><td>-2.0</td><td>7.0</td><td>-2.5</td><td>-2.5</td></tr><tr><td>2013</td><td>16.0</td><td>0.0</td><td>13.5</td><td>11.0</td></tr><tr><td>2014</td><td>9.0</td><td>7.5</td><td>22.5</td><td>18.5</td></tr><tr><td>2015</td><td>9.0</td><td>0.0</td><td>31.5</td><td>27.5</td></tr><tr><td>2016</td><td>6.0</td><td>2.5</td><td>37.5</td><td>30.0</td></tr><tr><td>2017</td><td>9.0</td><td>2.5</td><td>46.5</td><td>32.5</td></tr><tr><td>2018</td><td>6.0</td><td>0.0</td><td>52.5</td><td>34.0</td></tr><tr><td>2019</td><td>4.0</td><td>0.0</td><td>56.5</td><td>35.0</td></tr><tr><td>2020</td><td>2.0</td><td>0.0</td><td>58.5</td><td>35.5</td></tr><tr><td>2021</td><td>4.0</td><td>0.0</td><td>62.5</td><td>36.0</td></tr></tbody></table>				Year	RT Annual Cash Flow 0% (\$ mln RT)	RT CAPEX (\$ mln RT)	Cum Cashflow 0% (\$ mln RT)	Cum Cashflow 7% (\$ mln RT)	2010	0.0	0.5	0.0	0.0	2011	-0.5	1.5	-0.5	-0.5	2012	-2.0	7.0	-2.5	-2.5	2013	16.0	0.0	13.5	11.0	2014	9.0	7.5	22.5	18.5	2015	9.0	0.0	31.5	27.5	2016	6.0	2.5	37.5	30.0	2017	9.0	2.5	46.5	32.5	2018	6.0	0.0	52.5	34.0	2019	4.0	0.0	56.5	35.0	2020	2.0	0.0	58.5	35.5	2021	4.0	0.0	62.5	36.0
Year	RT Annual Cash Flow 0% (\$ mln RT)	RT CAPEX (\$ mln RT)	Cum Cashflow 0% (\$ mln RT)	Cum Cashflow 7% (\$ mln RT)																																																																	
2010	0.0	0.5	0.0	0.0																																																																	
2011	-0.5	1.5	-0.5	-0.5																																																																	
2012	-2.0	7.0	-2.5	-2.5																																																																	
2013	16.0	0.0	13.5	11.0																																																																	
2014	9.0	7.5	22.5	18.5																																																																	
2015	9.0	0.0	31.5	27.5																																																																	
2016	6.0	2.5	37.5	30.0																																																																	
2017	9.0	2.5	46.5	32.5																																																																	
2018	6.0	0.0	52.5	34.0																																																																	
2019	4.0	0.0	56.5	35.0																																																																	
2020	2.0	0.0	58.5	35.5																																																																	
2021	4.0	0.0	62.5	36.0																																																																	
Summary economics	<table><tr><th>Shell Share, RT-10</th><th>NPV7% (USD mln)</th><th>VIR7%</th><th>RTEP</th></tr><tr><td>Base case</td><td>22.8</td><td>0.78</td><td>74.9%</td></tr><tr><td>Low Realization Forecast</td><td>16.3</td><td>0.56</td><td>65.0%</td></tr><tr><td>High Realization Forecast</td><td>37.2</td><td>1.28</td><td>91.9%</td></tr></table>				Shell Share, RT-10	NPV7% (USD mln)	VIR7%	RTEP	Base case	22.8	0.78	74.9%	Low Realization Forecast	16.3	0.56	65.0%	High Realization Forecast	37.2	1.28	91.9%																																																	
Shell Share, RT-10	NPV7% (USD mln)	VIR7%	RTEP																																																																		
Base case	22.8	0.78	74.9%																																																																		
Low Realization Forecast	16.3	0.56	65.0%																																																																		
High Realization Forecast	37.2	1.28	91.9%																																																																		

INVESTMENT PROPOSAL
FOR THE BONNY MINOR NAG RESERVOIRS DEVELOPMENT PROJECT

Section 1: The proposal (management summary)

This Investment Proposal (approval for a funding of US\$38.99mln Shell share i.e. US\$ 129.95mln– 100% JV) is required for the execution of the Bonny Minor NAG Reservoirs Development Project.

Four new wells will be drilled to develop 162 Bscf of Non-Associated Gas from six gas reservoirs. About 7.6 Bscf of the total gas to be developed will be dedicated to running the Bonny Oil and Gas Terminal (BOGT) as fuel gas. The NAG production will be via the Bonny NAG Plant to NLNG T1 – 6 from Q2 2013 for about ten years before the wells will quit production. These wells will make use of available free capacity resulting from the decline in production of the existing wells.

The project was initiated post DG 1 on the 15th of May 2007 and taken through the Assess and Select phases between May and October 2007. In a combined Project Assurance Reviews (PARs 2 and 3) held 24th of October 2007, the supported development concept was drilling of three gas wells (two smart and one conventional well) and the extension of the BNAG manifold at Oloma. However because emphasis was on early gas, the Decision Review Board (DRB) at the Decision Gate 3 (DG3) of January 2008 supported the alternative concept of drilling 4 conventional gas wells. The DG3 of April 2009 approved the FDP concept of:

- 1 Drilling 4 conventional wells and installing downhole gauges and V-monitors for all wells.
- 2 Installing 2nos 6" x 2km and 2nos 8" x 7km flowlines from the wellheads to Oloma NAG manifold.
- 3 Extending the Oloma manifold by the installation an additional manifold skids (4nos x 6" lig x 14" hdrs x 1500# CS skids).

In August 2009, the Project Team presented a schedule with execution in 2012/2013 mainly driven by rig availability in line with the BP09 approved LTDS. Coinciding with this is the production forecast showing that some of the existing NAG wells will be quitting around 2012/2013. Consequently, management requested for a review of the sidetrack concept. Sidetracking some of the wells is technically impossible; however re-completion of the identified wells is not possible because the target reservoirs are deeper than the existing well depths. Though three wells passed the sidetrack evaluation criteria for technical feasibility, their combination in the sidetrack concepts required the drilling of more wells and thus their economic evaluation showed no advantage over the FDP concept. The DRB on the 10th of November 2009 approved to carry on with the FDP concept dropping the concepts with sidetracks.

The project is targeting drilling the first well by October 2012 and first gas is expected April 2013.

Table 1 contains the project expenditure phasing.

INVESTMENT PROPOSAL

FOR THE BONNY MINOR NAG RESERVOIRS DEVELOPMENT PROJECT

Table 1: Total Project Expenditure Phasing (US \$mln MOD JV 100%)

ACTIVITY DESCRIPTION	100% Total	Prior Years	2010	2011	2012	2013	2014	2015	2016	2017
SURFACE FACILITIES COST ESTIMATE										
Location Preparation	14.61				1.68	5.62	3.21		2.63	1.46
FEED/ Detail Design	1.33		0.87	0.46						
Flowlines	11.90			4.52	3.69	3.32	0.37			
Manifold Extension (Incl. sand probes)	8.65			0.09	4.28	3.85	0.43			
Total Surface Facilities (\$ MOD)	36.49		0.87	5.06	9.65	12.80	4.01	-	2.63	1.46
WELLS COST ESTIMATE										
4 Conv. NAG Wells Drilling and Completion	83.14				15.73	45.26	22.15			
Recompletion of 2No Wells	9.41								4.70	4.71
Total Wells (\$ MOD)	92.55				15.73	45.26	22.15	-	4.70	4.71
SURFACE FACILITIES & WELL COST ESTIMATE										
Overall Project Cost (\$ MOD)	129.04		0.87	5.06	25.38	58.06	26.16	-	7.33	6.17
SCD OPEX	0.91		0.02	0.13	0.24	0.32	0.10	-	0.07	0.04

Section 2: Value proposition and strategic and financial context

The project will supply 4 – 92 MMscf/d gas to NLNG T1-6 in addition to making available 2 MMscf/d fuel gas to run the Bonny Oil and Gas Terminal (BOGT) from Q2, 2013. The gas supply is expected to last for 10 years.

Summary Economics

The project economic evaluation was done on a forward-looking basis using the 50/50 CAPEX and expectation production forecasts. Sensitivity analysis was carried out for the project using 90/10 CAPEX estimate, the low realisation and high realisation forecasts. See Tables 2 below for further details.

Table 2: Economic Grid (Shell Share)

PV Reference Date: 1/7/2010	NPV (S/S \$ mln)		VIR	RTEP	UTC (RT \$/boe)		Payout-Time (RT)	Maximum Exposure (RT)
Cash flow forward from: 1/1/2010	0%	7%	7%	%	0%	7%		AT (S/S \$ mln)
Base Case								
SV (\$50.3/bbl & \$1.39/Mscf)	27.9	17.1	0.59	60.2%	7.3	8.1		
RV (\$60.4/bbl & \$1.66/Mscf)	36.4	22.8	0.78	74.9%	7.3	8.1	2014	9.2 (2013)
HV (\$80.7/bbl & \$2.19/Mscf)	53.5	34.1	1.17	102.1%	7.4	8.1		
BEP (RT \$/Mscf)					0.5	0.6		
Sensitivities (using RV)								
High Capex (Prob < 0.10)		20.3	0.56	57.9%			2015	12.1 (2013)
Low Reserves (Prob < 0.85)		16.3	0.56	65.0%			2014	9.3 (2013)
High Reserves (Prob < 0.15)		37.2	1.28	91.9%			2014	9.0 (2013)
CITA only		6.5	0.22	20.1%			2017	16.7 (2013)
1.5% cost markuo due to BVA* issues		20.8	0.68					
PIB IAT** version terms		-8.0	-0.28					

*Benchmarked, verified and approved (BVA) by NNPC

** Inter-Agency Terms (IAT)

INVESTMENT PROPOSAL

FOR THE BONNY MINOR NAG RESERVOIRS DEVELOPMENT PROJECT

Key Project Parameter Data Ranges

	Unit	Bus Plan (BP09)	Low	Mid	High
Capex (MOD)	US\$ mln	34.5		38.7	48.4
Investment OPEX (SCD)				0.3	0.3
Production Volume	mln boe	8.2	5.9	7.7	11.9
Start Up Date	mm/yyyy	Jan-12	Apr-13	Apr-13	Apr-13
Production in first 12 months	mln boe	2.0	0.92	0.94	1.07

Economic assumptions (Base case):

- NAG will be sold to NLNG T1-6 at \$1.66/Mmbtu RT10.
- Condensate treated and sold as oil at \$60.4/bbl RT10.
- Project was evaluated under CITA fiscal regime with AGFA incentives
- ARPR (31-12-2009) OPEX estimate for Bonny GP used for evaluation.
- SCD treated as OPEX
- 10% of total project CAPEX RT cost assumed as abandonment cost
- GHV of 1150 btu/scf
- NDDC levy of 3% of total expenditure
- Education tax of 2% assessable profit

PIB – Base Case IAT (version 5 141C Feb '10) assumptions:

- Royalty rates based on proposals for existing fields (20% for gas)
- Gas Netback prices (double sales export price) for Royalty and Allowances
- National Hydrocarbon Tax (NHT) rate 50% and CIT 30%
- No production allowances as fields are already producing
- 20% of overseas cost (30% of SPDC spend) is non-deductible for NHT taxable income
- Further 5% disallowance of costs due to Benchmark, Verified, Approval conditions
- Withholding tax (WHT) of 7.5%

INVESTMENT PROPOSAL
FOR THE BONNY MINOR NAG RESERVOIRS DEVELOPMENT PROJECT

Section 3: Risks, opportunities and alternatives

<u>RISKS</u>	<u>MITIGATION MEASURES</u>
Volume Uncertainty	The volume uncertainty associated with this development results from structural and petrophysical uncertainties identified and analysed in the course of this project. This uncertainty is taken into account in the range of scenarios evaluated and the low case is also economic. (see table 2).
Insecurity of the waterways	The general insecurity and current tension (hostage-taking, vandalism, disruptions, etc) in the Niger Delta may persist or repeat in the future. This may affect the project, especially execution and operation, with consequent project delays and cost overrun. Continuous stakeholder engagement and flexible project management (e.g. acceleration of critical activities) are proposed as preventive and recovery mechanisms against this threat.
Procurement delays and cost escalation	Robust economic models have been built and sensitivity studies performed on the integrated project and these results are favourable. However, unanticipated cost escalation and delays could erode project value. Securing the approval for this investment proposal in 2010 will enhance placing order for the procurement of long lead materials and equipment (in time for the main construction works planned from Q3 2011) and will mitigate these potential threats and ensure project value is realised. These early procurements will be carried out through SPDC's Supply Chain Management (SCM).
Legacy SCD Issues in the Bonny Node	Some legacy SCD projects from the previous developments in the area have been identified. If unresolved, these could result in community disturbances during the execution phase of the project, with consequent project delays and cost overrun. This threat will be mitigated by continuous stakeholder engagement and ensuring that other benefits to the communities e.g. employment opportunities and provision of contract services are agreed upon before commencement of project execution. Also key legacy projects are being addressed. For instance Oloma water scheme is completed though not functional due to lack of power. Similarly, NAPIMS has approved SPDC termination of the non performing contractor who was handling Oloma, Ayaminima, Epelema, Minima & Sangamabie interdependency electrical project. NAPIMS has also supported quick fix to enable the community have light/repair of faulty gensets for these communities whilst SPDC commence the process of re- awarding the contract to a new contractor. The Bonny Integrated Business Complex Project has also kicked off and progressing well.
Inability to secure ESHIA approval within scheduled timeframe	Though Project categorization received from the FMEV in November 2007 rated it a category 1 project, which requires 2 seasons sampling. Further engagement of regulators is being done to limit data sampling to the 1 season already completed, since robust data exists in the Bonny Area.
Execution of Petroleum Industry Bill (PIB)	Planned changes to the country's management of the oil and gas industry and in particular the fiscal terms are being considered by the National Assembly. Proposed fiscal changes disfavour existing dry gas

INVESTMENT PROPOSAL

FOR THE BONNY MINOR NAG RESERVOIRS DEVELOPMENT PROJECT

	fields such as this and the development would only be profitable if proposed wording on Production Allowances for new Field Development Plans are included in the final PIB. Sustained lobbying is being carried out with the legislators to encourage the adoption of these provisions.
--	--

Opportunities

- Unique attraction offered by the Bonny Minor NAG Reservoirs Development Project stems from its proximity to existing gas infrastructure (Bonny NAG plant and Oloma NAG manifold).
- Opportunity to prolong the service life of the existing Bonny NAG Plant by maintaining production through it post 2013 for the next 10 years (excluding downtime) thereby making the plant available for future gas developments in the Node.
- Reduction of footprint and environmental impact through the use of selective completion wells.
- Provision of some 155 Bscf of short-term gas supply to militate against supply shortfall at NLNG.
- Maintaining synergies with other on-going projects in the Bonny node i.e. the Bonny Flowstation AG Solution Project.
- Sustainability of 7.6 Bscf fuel gas supply to Bonny Terminal for the next 10 years.

Alternatives

1. The alternative concept will involve the drilling of three gas wells in the six target reservoirs (two smart wells and one conventional) and the extension of the Oloma NAG manifold by the installation of an additional manifold skid. This concept was not selected because the project schedule and the smart well contractual process were misaligned, with the latter potentially delaying the former.
2. The other alternative will involve sidetracking Bonny well 27T in addition to drilling of three conventional wells (two in Bonny North and one in Bonny). The economics evaluation shows that the FDP concept returns marginally higher NPV / VIR than this concept because of consequent drop in UR in spite of the seeming drop in well and flowline costs.

Section 4: Corporate structure, and governance

The existing corporate structure and arrangements of SPDC-JV (with SPDC as operator) will be used as the vehicle for the investment and operations.

An SPDC Decision Review Board (DRB) will continue to advise.

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

This proposal complies with the Group Business Principles, policies and standards. This project has benefited from full functional support covering ESHIA, Field Development Planning, OR&A and SCD. Besides contributing to SPDC's supply commitment to NLNG and extending fuel gas supply to the Bonny Terminal, the project will contribute to sustainable development of Nigerian people within the node. Additionally, there will be a focus on Nigerian Content Development (NCD). The Finance, Supply Chain Management, Legal, and Treasury/Tax functions will provide functional support for this proposal.

INVESTMENT PROPOSAL

FOR THE BONNY MINOR NAG RESERVOIRS DEVELOPMENT PROJECT

Section 6: Project management, monitoring and review

The Medium Projects and Discipline Engineering team under UIG/T/PM is managing the project post DG-3. The project team is adequately resourced. The Major Project Services Team UIG/T/PS and the Corporate Matrix Technical Support Team UIG/T/PM support the Project Quality Management Systems. This project has been matured in line with the Opportunity Realisation Process (ORP) and has undergone the necessary Project Assurance Reviews - PARs 2 & 3 held 24th October 2007. Key decisions have been reviewed and are supported by the Decision Review Board (DRB) at the Decision Gate 3 (DG3) of April 2009, in August 2009 in an engagement meeting with the Decision Executive and in November 2009 by the DRB. Value delivery will be ensured through regular reviews (PERT) and GWDP.

Section 7: Budget provision

In BP10, the project is in the base programme but under Alternative Funding together with all other export gas projects. In BP09, in order to commence and progress definition of the project whilst awaiting IP approval, a provision of F\$0.872 was made in the 2010 JV Budget to cover completion of FEED and Detail Design, ESHIA wet season sampling and delivery of ESHIA report. The cost of full preparation survey and requirement for acquisition was also included in the 2010 JV Budget. An estimated cost of \$5.065mln has been provided mainly for procuring long lead materials for surface facilities in 2011. Ordering of the surface facilities long lead materials is scheduled for Q4 2010 to ensure delivery in Q4, 2011. Wells long lead materials are required on site by Q3, 2012.

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	0.27	1.59	7.43	16.80	8.02	4.88
Cash Flow						
SCD Expenditure	0.01	0.04	0.07	0.09	0.03	0.03
Capital Expenditure	0.27	1.55	7.35	16.71	7.99	4.85
Operating Expenditure	0.00	0.00	0.00	0.00	0.00	0.00
Cash Flow from Operations	0.05	0.31	1.61	7.74	17.74	68.75
Cash Surplus/(Deficit)	(0.22)	(1.24)	(5.75)	(8.97)	9.75	63.90
Profit and Loss						
NIBIAT +/-	0.01	0.07	0.36	4.69	13.99	38.66
Balance Sheet						
Average Capital Employed	0.16	1.25	6.59	21.32	37.20	303.70

Section 9: Disclosure

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

Section 10: Financing

The project will be funded with JV funding and Shell share capital expenditure will be met by SPDC's own cash call.

INVESTMENT PROPOSAL
FOR THE BONNY MINOR NAG RESERVOIRS DEVELOPMENT PROJECT

Section 11: Taxation

The income tax from the project will be in accordance with Petroleum Profit Tax Rate and relevant income tax applicable.

Section 12: Key Parameters

This investment proposal seeks approval for US\$38.99mln Shell share (i.e. US\$ 129.95mln 100% JV), 50/50, MOD for the implementation of the Bonny Minor NAG Reservoirs Development Project.

Section 13: Signatures

This Proposal is submitted to EPG for approval.

Supported by:

For shareholder approval:

.....

Bos, Bernard (FUI/F)

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

.....

Craig, Ian (UIG)

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

Initiator:

Oputa, Nkenamchi Benedict (UIG/T/PM)

Project Manager (UIG/T/PM)