The Shell Petroleum Development Company of Nigeria Limited

Internal Investment Proposal

Summary Information

<table>
<tr><td>Directorate</td><td>Technical Directorate</td></tr>
<tr><td>Group equity interest</td><td>100% in SPDC, whereas SPDC is the Joint Venture (JV) operator of an unincorporated JV with a 30% interest.</td></tr>
<tr><td>Other shareholders / partners</td><td>Nigeria National Petroleum Company (NNPC: 55%), Total: 10%, Nigeria Agip Oil Company (NAOC: 5%) in SPDC-JV</td></tr>
<tr><td>Amount</td><td>Pre-FID element of US$1.54 mln Shell share, MOD 50/50 (US$ 5.13 mln 100% JV) out of a total Project cost of US$15.9 mln Shell share, MOD 50/50 (US$53.3 mln 100% JV).</td></tr>
<tr><td>Project</td><td>AGG & Flares Improvement Project (Obigbo & Agbada Scope)</td></tr>
<tr><td>Main commitments</td><td>
<table>
<tr><th></th><th>This Proposal (100% JV US$ mln)</th><th>This Proposal (Shell Share US$ mln)</th></tr>
<tr><td>FEED & Detail Engineering</td><td>5.0</td><td>1.5</td></tr>
<tr><td>SCD</td><td>0.13</td><td>0.04</td></tr>
<tr><td>Total</td><td>5.13</td><td>1.54</td></tr>
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</td></tr>
<tr><td>Source and form of financing</td><td>This investment will be financed with JV funding and Shell share capital expenditure will be met by SPDC's own cash flow. Based on this IP, an investment memorandum shall be issued for the JV partners' support.</td></tr>
<tr><td>Summary cash flow</td><td>Cost only evaluation. Cash Flow Plot not applicable.</td></tr>
<tr><td>Summary economics</td><td>
<table>
<tr><th>Summary economics</th><th>NPV (USD mln)</th><th>RTEP (%)</th><th>VIR7%</th></tr>
<tr><td>Base case</td><td>-1.1</td><td>NA</td><td>NA</td></tr>
<tr><td>High Opex</td><td>-1.4</td><td>NA</td><td>NA</td></tr>
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Section 1: The proposal

1.1 Management Summary

This Investment Proposal seeks approval of US$1.54 mln Shell share (including SCD Opex) to carry out the engineering (FEED and Detailed Design) of the Obigbo & Agbada scope of the AGG Improvement Project.

This project is an integral part of SPDC's flares down and associated gas utilisation campaign. The project will increase associated gas utilisation to at least 95% in the East, while eliminating AGG-related oil production deferments and operational gas flaring.

In addition to the incremental oil and gas production, the Project will allow the SPDC JV improve the availability of the Eastern domestic gas supply commitments.

The Obigbo and Agbada projects are part of a wider AGG improvement programme which also includes Imo River, Cawthorne Channel, Soku and Belema. Concept studies for the Obigbo & Agbada scope of the project was completed in November 2011 and DRB supported proceeding to the define phase. Concept studies for the other AGG facilities (Imo River, Cawthorne Channel, Soku and Belema) and their associated flow stations are in progress.

The P50 cost estimate for the full Obigbo & Agbada scope is US$ 15.6 mln Shell Share (US$52mln, MOD 100% JV) while the estimate for the FEED and Detailed Design is US$ 1.5 mln (US$5.0 mln, MOD 100% JV). This cost includes the FEED and detailed design, procurement of long lead items (gas scrubbers, crude export pumps, gas engine-driven generators) and the construction/installation contract.

1.2 Project Background

SPDC installed AGG facilities with a total capacity of about 900MMscf/d in the 1990's and early 2000's in order to convert the hitherto flared associated gas to value, while at the same time meeting environmental regulatory requirements. While the "new" AGG plants were fit for purpose at the time, their associated flow stations were not upgraded (some of these flow stations were built over 40 years ago). In addition, sizing of the AGG facilities were not done as part of an integrated Field Development Plan (FDP). This, in addition to other technical and operational reasons (including asset integrity, obsolescence, unavoidable abandonment, changes in operating envelop and reservoir depletion) have resulted in suboptimal performance of the AGG systems over time.

A dedicated AGG & Flare Improvement Concept Team was set up in August 2011 to identify and assess the AGG issues and develop sustainable conceptual solutions. The scope covers the four AGG nodes in SPDC's Eastern Operations, namely Obigbo Node (comprising Obigbo North, Agbada2 and Imo River AGG facilities), Cawthorne Channel Node, Soku Node and Belema Node, while the AGG nodes in the West are covered under the SODA/DOMGAS portfolio.

The requested amount, for the entire AGG improvement project (Obigbo and Agbada scope) which include both the Pre-FID and post FID elements is shown in Table 1 below.

Table 1: PROJECT COST PHASING (US$mln MOD 100% JV)

	2012	2013	Total
Pre-FID	5.0	0.0	5.0
FID	30.7	16.3	47.0
SCD	0.9	0.4	1.3
Total	**36.6**	**16.7**	**53.3**

1.3 Scope of Work

The project work scope has been developed to address all the identified AGG performance issues. A summary of the scope of work planned to be executed under this proposal is as follows:

Low Volume of Produced AG

1. Design and installation of gas recycle loop at Obigbo and Agbada AG compressors

High Liquid Carryover

2. Design, procurement and installation of 2no. 2MMscf/d, 1.15m dia x 4.5m scrubbers for HP and LP duty at Obigbo North, Agbada-1 and Agbada-2 flow stations, respectively.

Low Fuel Gas Quality

3. Design, procurement and installation of 1no. fuel gas scrubber each at Obigbo North, Agbada 1 and Agbada 2 flow stations, respectively.

Instrument Air/Gas

4. Replacement of instrument gas systems with instrument air systems
5. Upgrade of existing instrument air systems from 70Nm3/h to 220Nm3/h, to meet instrument air requirements in the various facilities (flow stations and AGG plants in Obigbo and Agbada).

Pumping Capacity

6. Procurement and installation of 10Mbpd electric-driven crude export centrifugal pumps with remote operation capability (4no. in Agbada-1, 6no. in Agbada-2 and 5no. in Obigbo North)
7. Integration of new export pumps to existing PAS in Obigbo and Agbada AGG Plants.

Power System Inadequacy

8. Procurement and installation of 1no. 550kVA gas engine generator each at Obigbo AGG and Agbada AGG facilities, respectively.

Non-Functional Auto Drain

9. Rerouting of process condensate disposal line in Obigbo AGG plant to the LP header in Obigbo North flow station.
10. Rerouting of process condensate disposal line in Agbada AGG plant to the LP header in Agbada 2 flow station.

A pilot project on surge vessel gas collection is being undertaken in Imo River by the Conceptual Engineering team. This solution, if successful, will be deployed to other locations.

Some of the above scope have been identified as "quick wins" and shall be executed via existing Asset Engineering contracts.

Section 2: Value Proposition and Strategic and Financial Context

2.1 Justification for Expenditure

The proposed expenditures are required to execute FEED and Detailed Design for the Obigbo and Agbada scope of the AGG Improvement Project. Procurement of key long lead items, which are the gas scrubbers, gas engine generator sets, and instrument air packages, shall be initiated early in the FEED and will be covered in a separate pre-FID proposal. Early placement of purchase orders for the long lead items is critical to realizing the project schedule.

2.2 Production and Reserves

Obigbo North

The remaining recoverable volume in Obigbo North is 212.2MMstb of oil and 259.1Bscf of AG and AGG issues are responsible for about 10% oil production deferment in Obigbo, based on the December 2011 YTD actual deferment data. The AGG Improvement Project will, therefore, potentially eliminate this deferment, thereby boosting oil production and AG utilization accordingly.

The impact of the AGG Improvement Project on the NFA production forecast is shown in Figure 1 below.

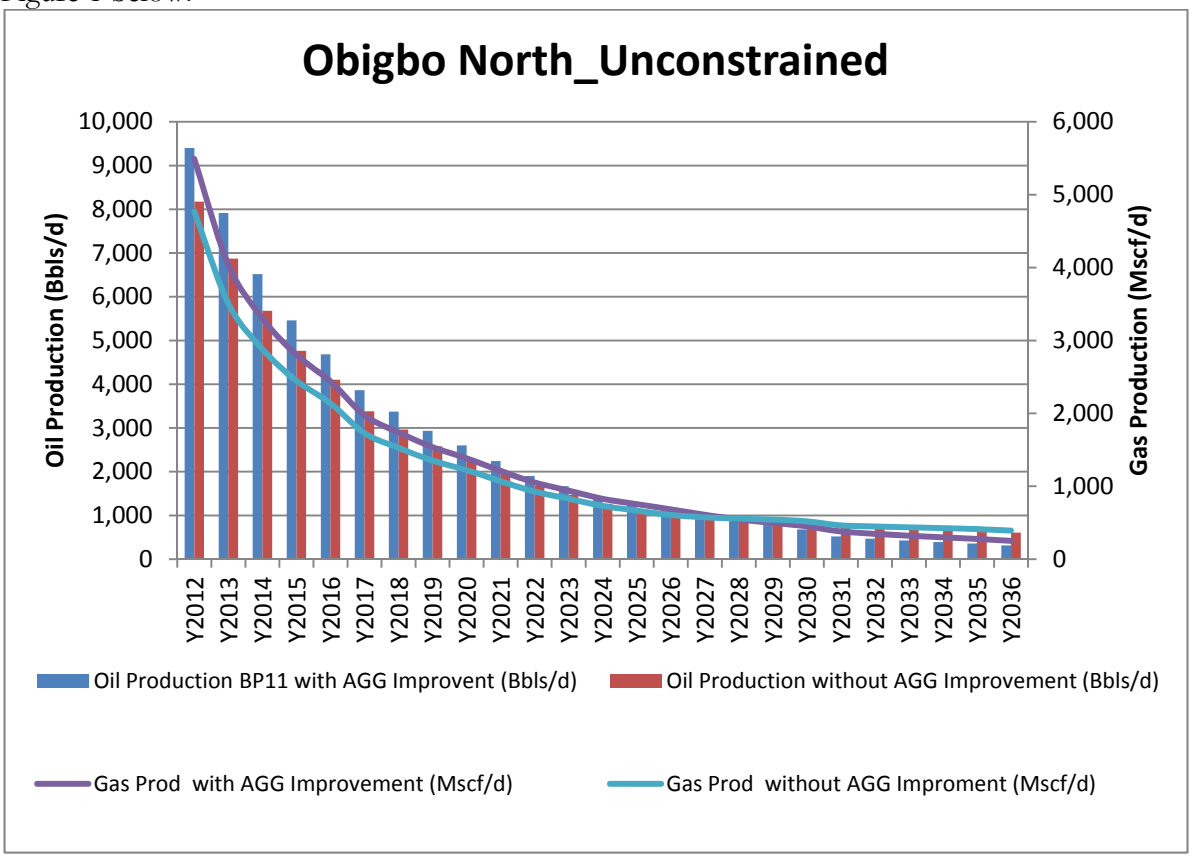

Figure 1: Obigbo North Production Forecast

Agbada

The remaining recoverable volumes in Agbada Field are 266.3MMb of oil and 670.8Bscf of AG and AGG issues are currently responsible for about 8% oil production deferments in Agbada 1 & 2 (based on the December 2011 YTD actual deferment data), thus the AGG Improvement Project will potentially eliminate this deferment, thereby boosting oil production and AG utilization accordingly.

Figure 2 below shows the impact of AGG Improvement Project on the Agbada 1&2 NFA production forecast.

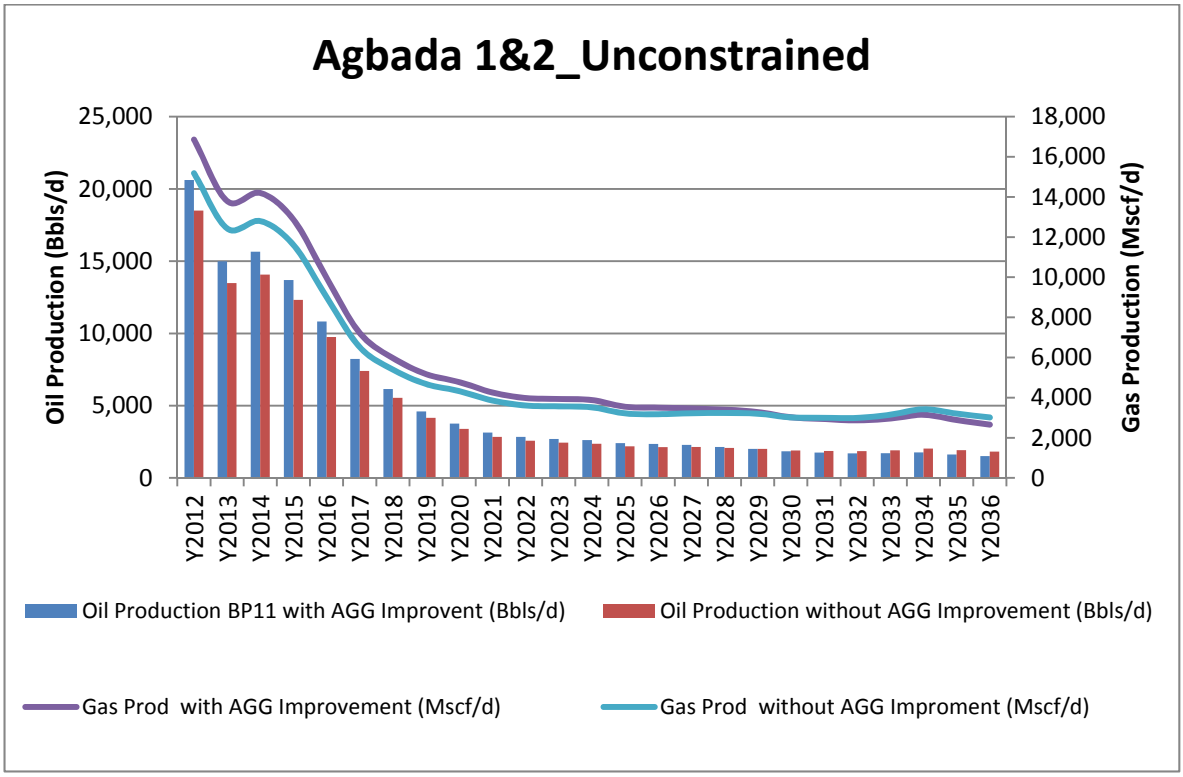

Figure 2: Agbada 1 &2 Production Forecast

Furthermore, growth projects such as Agbada FOD1-3 and Obigbo Node IOGD 1-4, which are currently in the ORP maturation funnel will benefit from the AGG Improvement Project.

2.3 Summary of Economics

The Pre-FID IP for the AGG Improvement for Agbada and Obigbo Nodes was evaluated as a cost only using the level II cost estimates. All the Pre-FID cost elements were treated as OPEX pending when the project takes FID where the relevant costs will be capitalized. Details are shown in table 2 below.

Further analysis was carried out to ascertain the value of the Full project scope after the project takes FID using the Level II cost estimates and the improved production forecast. The detailed results are shown in table 3 below. Table 4 shows the Pre-FID (Cost only) key parameters.

Sensitivities carried out on both the base case and the full project scope are:

Pre-FID Scope (Cost Only):

- High Opex.
- Project with ring fence.
- 1.5% cost mark-up provision due to costs dispute by NAPIMs on Benchmark Verified and Approved (BVA) issues.

Full Project Scope:

- High CAPEX
- 1 Year project scheduled delay.
- 1.5% cost mark-up provision due to costs dispute by NAPIMs on Benchmark Verified and Approved (BVA) issues.

Table 2: Pre-FID Scope- Cost Only (Shell Share)

PV Reference Date: 1/7/2012	NPV (S/S $ mln)		VIR	RTEP	UTC (RT $/boe)		Payout-Time (RT)	Maximum Exposure (RT)
Cash flow forward from: 1/1/2012	0%	7%	7%	%	0%	7%	yyyy	mln
Base Case								
HV-RT ($90/bbl RT12)	-1.1	-1.1	NA	NA	NA	NA	NA	US$1.09 mln (2012)
Sensitivities (on the base case using HV-RT)								
High Opex (+25%)		-1.4	NA				NA	US$ 1.36 mln (2012)
Project with ring fencing		-1.6	NA				NA	US$ 1.55 mln (2012)
1.5% BVA cost mark-up		-1.2	NA				NA	NA

Note: No price impact hence RV-RT and SV-RT same with HV-RT results.

Table 3: Full Project Scope (Shell Share)

PV Reference Date: 1/7/2012	NPV (S/S $ mln)		VIR	RTEP	UTC (RT $/boe)		Payout-Time (RT)	Maximum Exposure (RT)
Cash flow forward from: 1/1/2012	0%	7%	7%	%	0%	7%	yyyy	mln
Base Case								
SV-RT ($50/bbl RT12 & NGMP proflie RT12)	92.7	**65.9**						
RV-RT ($70/bbl RT12 & NGMP profile RT12)	150.2	**104.1**						
HV-RT ($90/bbl RT12 & NGMP profile RT12)	210.6	**143.7**	9.46	>50%	11.7	9.1	2012	US$ 1.78 mln (2012)
Sensitivities (Using HV-RT)								
High CAPEX (+25%)		140.1	7.38				2012	US$ 1.56 mln (2012)
1 Year schedule delay		135.6	9.55				2012	NA
1.5% BVA cost mark-up		136.2	8.54				NA	NA

Table 4: Pre-FID Scope Key Project Parameters Data ranges (Shell Share)

	Unit	Bus Plan BP11	Low	Mid	High	Comments
Capex (MOD)	US$ mln	2.8	NA	NA	NA	Pre-FID elements treated as OPEX
Opex (MOD)	US$ mln	0.1	1.3	1.5	1.9	Pre-FID elements and SCD OPEX
Production volume	Mmboe	NA	NA	NA	NA	Cost only evaluation
On-stream Date	mm/yyyy	NA	NA	Sep-12	Sep-13	High based on 1 Year delay for Full scope

Economics Assumptions

Pre-FID scope:

- Pre-FID 50/50 cost estimates treated as OPEX.
- SCD cost of 2.5% of MOD CAPEX.
- NDDC levy 3% of total expenditure.

Full Project Scope:

- Oil PSV of $90/bbl HV-RT12 with Bonny offset.
- SPDC NGMP Domestic gas aggregate price profile RT12.
- 31/12/2011 ARPR Fixed and variable OPEX for Agbada and Obigbo was used.
- Gas was taxed under CITA with Associated Gas Framework Agreement (AGFA) incentive.
- Flare Penalty of US $3.5/mscf non-tax deductible.
- GHV of 1000Btu/scf for gas supply to Domgas.
- SCD cost of 2.5% of MOD CAPEX.
- 10% RT CAPEX assumed as abandonment cost.
- NDDC levy 3% of total expenditure.
- Education tax of 2% assessable profit.

Section 3: Risks, Opportunities and Alternatives

3.1 Risks and Mitigation Plans

Risk	Planned Mitigation
Construction in live facilities.	The contracts shall be tendered among pre-qualified contractors with proven brown field construction experience.
Extended delivery time by in-country equipment fabrication contractors	The limited in-country capacity for some of the project works, especially pressure vessel fabrication, has been identified. Early engagement of proven local vendors has been initiated with a view to ensuring a seamless take off once the orders are placed. There is also a plan to seek a waiver from NCDMB to procure some critical items from overseas if the need arises.
Production deferments due to prolonged plant downtime.	Shutdown plans for all affected assets shall be developed for the project activities and these shall be incorporated in the project schedule and the tender package for the construction contracts. These plans shall, as much as possible, ensure that all activities requiring plant shutdown are aligned with planned maintenance activities as per the IAP.

3.2 Opportunities

Execution of this project is an opportunity to reduce oil production deferment in the Obigbo North and the Agbada fields by about 10% and 8% of the IPSC, respectively, based on 2011 performance. Additionally, the project will reduce gas flaring in both nodes; to achieve the corporate target AG utilization of 95%.

3.3 Alternatives

SPDC needs to utilize produced AG and eliminate routine flaring in order to retain its LTOs. In addition, SPDC needs to meet her domestic gas supply commitments, which is partly from the AGG facilities. These objectives can be realized if the existing AGG facilities are performing optimally. Though the gas flaring objective may also be met by shutting in production, this is really not a preferred alternative because of the impact on production and revenue.

Section 4: Corporate Structure and Governance

The existing corporate structure and governance arrangements of SPDC-JV, with SPDC as operator still subsist for this investment.

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

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

Section 6: Project Management, Monitoring and Review

This project is being matured in line with the ORP process and shall undergo all necessary Value Assurance Reviews, and the processes shall be scaled as per the size (cost) and complexity of the project, in line with the ORP. The project currently resides with the AGG & Flares Improvement Concept team, but shall be executed by a fully resourced integrated project team. There is an identified Decision Executive, Business Opportunity Manager, Project Manager and various Operations Managers, as per the respective assets.

Several scope alignment engagements/workshops have been held with other teams across the company in order to ensure that all relevant scopes are captured and that scopes are not duplicated in other teams.

Section 7: Budget Provision
A budget provision of $2.754 mil is provided for FEED of AGG Improvement Project in BP11.

Section 8: Group Financial Reporting Impact
The Financial impact of this activity on Shell Group Financials is as indicated in the Table below:

	2012	2013	2014	2015	2016	Post 2016
Total Commitment	1.58					
Cash Flow						
SCD Expenditure	0.04					
Pre-FID Expenditure	1.54					
Capital Expenditure						
Operating Expenditure	1.58					
Cash flow From Operations	-1.38	0.3				
Cash Surplus/(Deficit)	-1.38	0.3				
Profit and Loss						
NIBIAT +/-	-1.09					
Balance Sheet						
Avg Capital Employed	0.15	0.15				

Section 9: Disclosure
Materials disclosures, if any, will be done in line with the Group and SPDC Disclosure policies and guidelines.

Section 10: Financing
This investment will be financed with JV funding and Shell Share capital expenditure will be met by SPDC's own cash flow.

Section 11: Taxation
There are no unusual taxation features at this stage.

Section 12: Key Parameters
Approval is sought for US$1.54mln Shell share (US$5.13 mln 100% JV) for FEED and Detailed Design.

Section 13: Signatures
This Proposal is submitted to SPDC General Manager for approval.

Supported by:	For Business approval:
..... Tigho Agwae (BFM Development/Engineering, FUI/FB) Date:..../..../....	..... Toyin Olagunju (GM, Onshore/Shallow Offshore Projects) Date:..../..../....

Initiator: _____ *Mr Auwal Muhammad* *(Project Lead, UIG/T/PECD)* Date …/…./….	