Internal Investment Proposal

<table>
<tr><td>Business unit</td><td>Upstream International Operated, Nigeria/Gabon, Shell Petroleum Development Company of Nigeria Limited (SPDC)</td></tr>
<tr><td>Shareholders / partners</td><td>SPDC 30%, Nigeria National Petroleum Corporation (NNPC: 55%), Total Exploration & Production Nigeria Limited (TEPNL: 10%), Nigeria Agip Oil Company (NAOC: 5%) in SPDC-JV where SPDC is the Operator.</td></tr>
<tr><td>Amount (Shell share) MOD, 50/50</td><td>USD 6.29 Mln Capex
<table>
<tr><td rowspan="2">Capex (MOD)</td><td colspan="3">2014 (USD)</td><td></td></tr>
<tr><td colspan="2">Q4 2014</td><td>Q1 2015</td><td>Total</td></tr>
<tr><td>Rig move</td><td>3,474,458</td><td>3,670,683</td><td>3,670,683</td><td>10,815,824</td></tr>
<tr><td>Completion</td><td>2,089,559</td><td>2,991,433</td><td>2,991,433</td><td>8,072,425</td></tr>
<tr><td>Well Lift</td><td>694,564</td><td>94,564</td><td>694,564</td><td>2,083,692</td></tr>
<tr><td>Total 100% JV (MOD)</td><td>6,258,581</td><td>7,356,680</td><td>7,356,680</td><td>20,971,941</td></tr>
<tr><td>Shell Share</td><td>1,877,574</td><td>2,207,004</td><td>2,207,004</td><td>6,291,582</td></tr>
</table></td></tr>
<tr><td>Project</td><td>KOCR-027/AGBD-008/AGBD-016 Integrity Workover Project</td></tr>
<tr><td>Reserves / Resources</td><td>This project is aligned with SPDC’s strategic goals and priorities by maturing a total 2C Contingent Resource of 1.5 MMstb of oil and 3.6 Bscf of associated gas (SS) for the drainage points to production and transferring equivalent volume from Contingent Resource to Prove Developed in 2015.</td></tr>
<tr><td>Production</td><td>Total oil production from this project peaks at 936 bopd with associated gas production of 2.0 MMscf/d (281 bopd and 0.6 MMscf/d SS) by 2017 (the production rate is constrained by integrated SPDC forecasting model assumptions), project will reduce non-productive time and production deferment currently experienced in these wells as well as ensuring producing wells meet Shell group minimum safety standard.</td></tr>
<tr><td>Source and form of financing</td><td>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.</td></tr>
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Proposal Management Summary

This proposal seeks approval for the workover of KOCR-027, AGBD-008 and AGBD-016 oil wells to address the well integrity issues (replacement of existing bucked / punched tubing, installing TRScSSSV, Hold Up Depth (HUD) elimination) and restore integrity to the wells in accordance with SPDC Well Integrity Management Policy and safety standard.

Additionally, for the AGBD-008 and AGBD-016 wells, the workover opportunity will be used to install proper gas lift mandrels, for optimum performance and reduction of well operating cost and down time / deferment due to AGG outage. Also for KOCR-027 well, workover will provide opportunity to restore well to production by recompleting as a Single String Single (SSS) oil producer on the E2000X.

The workover is expected to add a total potential of 2,450 bopd and develop a total of 4.8 MMstb and 11.96 Bscf of oil and gas respectively from KOCR E2000X and AGBD E8000C reservoirs. Total Shell share Capex is USD $6.29mln.

Project Background:

AGBD-008 and AGBD-016 were initially completed on the AGBD-E8000C reservoir in 1965 and 1967 respectively. Both intervals started water production after some years of production and BSW increased to maximum of 60%, with attendant decrease in oil productivity. Thus, the wells have been previously worked over to manage water loading challenge.

Given that the reservoir drive mechanism is predominantly moderate to weak aquifer, the reservoir pressure had declined by more than 20% from the last FBHP in the interval. Currently therefore, the intervals could not flow or at least sustain flow naturally. Hence, insert orifice (via tubing punch) was installed to enhance vertical lift, using lift gas from the Agbada AGG plant.

However, the intervals production is adversely affected by AGG outage and/or compressor failure and wells quit frequently as a result.

Presently, the wells are always brought back to production via N_2 lift at a cost of ca. US$260,000.00 per intervention. At the current epileptic trend of the AGG, each of the intervals is likely to be down five to six times per year, and would each require a total N_2 lift intervention cost of US$1,560,000.00 per annum to keep the interval flowing with an average Non Productive time (NPT) of 6 months per year.

This workover is therefore proposed to provide the opportunity to pull out and replace the existing (punched) tubing, install proper gas lift mandrels for optimum performance, and reduce well operating cost in the AGBD-008 and AGBD-016 wells.

KOCR-027 was drilled and completed in the KOCR E2000X reservoir and came on stream in 1976. Water injection into the E2000X reservoir was initiated in 1990 for pressure maintenance. KOCR-027, located updip of an injector well (KOCR-030), started experiencing increased water production shortly after the water injection scheme. Chemical analysis of the produced water confirmed that the injected water contributed significantly to the increased water cut. The well was re-entered in 1992 and 1993 for gas exclusion and water shut-off repairs, where the upper and lower intervals were shut off to reduce HSBW and HGOR and the middle interval recompleted. Well subsequently produced with declining productivity and consistently high water cut.

Post another TT water shut off in 1996, the well failed to flow. It was Nitrogen lifted in 2000 but it recovered 98% BS&W. Consequently, RST logging was undertaken in March 2005 but was aborted because of Hold Up Depth (HUD).

The well is currently closed in for low productivity and is therefore available for workover. This work over will address the issue of the HUD in the well thus enhancing the integrity status in accordance with SPDC Integrity Management Policy and reducing injury to life and environment. Workover activities will consist of the retrieval of tubing, mill out packer, squeeze-off of existing perforation intervals, and re-perforating across 34 ft. of reservoir sand. The well will be recompleted as SSS on the E2000X sand.

Value Proposition and Economics Summary

The workover projects are all primarily aimed to address integrity issues in the three wells and ensure compliance with SPDC Integrity Management Policy, reducing injury to life and environment, thus

- *These projects will ensure producing wells meet Shell group minimum safety standard*

AGBD-008 and -016 projects will develop 2.0 MMstb of oil and 5.0 Bscf of associated gas in the AGBD E8000C reservoir and also reduce non-productive time and production deferment currently experienced in these wells. The execution of the AGBD projects will further eliminate the high cost of several N_2 lifts operations on the wells.

KOCR-027 is one of the wells programmed to deliver Oil & AG to the Gbaran CPF. The well is best positioned to drain the remaining recoverable oil on the South Eastern part of the E2000X structure. Production from the well will improve recovery from this oil rim reservoir prior to future KOCR E2000X reservoir gas cap blow down.

Collectively, the projects will

- *Add 2,450 bopd potential.*
- *Develop a total of 4.8 MMstb of contingent resource and 11.96 Bscf of associated gas from the Kolo Creek E2000X and AGBD-E8000C reservoir.*
- *Workover project's base case forecast has a startup date of January 2015 with an initial oil rate of 900 bopd from KOCR-027 (the first activity).*

Summary Economics

The economics for this IP was carried out on a forward-looking basis using the project 50/50 level III cost estimate and the production forecast of 3 wells. The base case was framed as the consolidation of the 3 wells (AGBD-008, AGBD-016 and KOCR-027).

Sensitivity analysis was carried out to determine the values of the project under:

- Low and High volumes scenario,
- High CAPEX and an
- Additional BVA (Benchmark Verified and Approved) view to address cost disputes with NNPC resulting in a 1.5% cost mark up.
- Short term price sensitivity was done due to the presence of volumes in 2015

For each of these sensitivities, the project showed very robust economic indicators. Details can be found on Table 1:

Table 1: Project Economics Parameters

PV Reference Date: 1/7/2014	**NPV (S/S $ mln)**		**VIR**	**RTEP**	**UTC (RT $/boe)**		**Payout-Time (RT)**	**Maximum Exposure (RT- AT)**
Cash flow forward from: 1/1/2014	**0%**	**7%**	**7%**	**%**	**0%**	**7%**	**(yyyy)**	**$mln (yyyy)**
Base Case								
SV ($70/bbl)	11.4	5.6	0.89					
RV ($90/bbl)	15.4	7.8	1.23	62	5.5	8.2	2016	5.7(2014)
HV ($110/bbl)	18.9	9.7	1.54					
Sensitivities (using RV-RT14)								
Low Volumes		4.6	0.73					
High Volumes		9.3	1.47					
High CAPEX (P90)		7.4	0.89					
Short term prices		7.8	1.24					
1.5% BVA		7.4	1.12					

Economics Assumptions:

- Condensate PSVs of $90/bbl @RV-RT14 with Bonny offset applied.
- NLNG contracted 2014 Gas Price $2.08/Mmbtu RT14 for KOCRK 027
- Domestics gas price based on NGMP profile
- Gas assumed to be treated under CITA with AGFA incentive
- Condensate assumed to be treated as oil, therefore taxable under PPT (Tax rate of 85%)
- Flare Charge of $3.5Mscf
- Gas Heating Value (GHV) of 1150btu/scf for gas sold to NLNG and 1000btu/scf for Domestic market gas
- NDDC levy of 3% total expenditure.
- Education tax of 2% assessable profit.
- Abandonment cost is estimated at 10% of RT CAPEX

Risks and Alternatives

The key risks and mitigation factors for the project are discussed in Table 2.

Risks	Description	Mitigation
Funding (NNPC not able to fund its own equity share)	Schedule and cost overruns risk, arising from challenges in getting NAPIMS to fund her equity share directly or through MCA.	Budget has been approved internally for this project and included in OP14. Early engagement of NAPIMS
Contracting; Late approval from NAPIMS/DPR	Risk of delayed approvals from NAPIMS / DPR on time hence delaying the actual execution of the workover.	Existing contract will be used. Engage NAPIMS / DPR early using avenues like QMR to seek.
Non-integral well post- completion operations.	Possible packer leak as a result of damaged seal assembly over liner hanger during completion operations.	Adhere to approved completion procedures. Carry out integrity tests after landing tubing. Test annulus after setting production packer.
Casing integrity.	Possible corrosion/leak due to exposure to formation water behind casing.	Take USIT after retrieving tubulars. Patch casing if damage imminent.
Inability of well to flow after completion.	Possible formation fluid contamination /scales formation due to kill/workover fluid incompatibility.	N2 to create underbalance for flowback and gas lift well to sustain clean-up/production. Acid wash to clean well if LCM is used.
Inability to pull tubing.	Possible seal and packer malfunction (due to old age) resulting into tubing being stuck.	Cut tubing above packer and fish.
No injectivity into perforations	Injectivity required for successful squeezing off of perforations.	Carry out injectivity test prior to squeeze operations.
Losses of completion fluid after perforation.	Completion fluid overbalance, absence of filter cake.	Use of appropriate LCM to cure losses. Monitor record and report losses.
Fire/Explosion	Risks to people and assets	Strict compliance with HSSE guidelines and pressure control manual - Have HAC zoning properly marked, all third party engines needs to be fitted with spark arrestors. Maintain primary well control throughout the operation. Ensure that secondary well control equipment is certified and key personnel appropriately trained / certified. Isolate all hydrocarbon release sources from any ignition source. Have fire teams and fire equipment on stand-by. Routine kick and fire drills.
Social Performance	Community issues arising from unmet expectations and lack of effective engagement	Proactive engagement of communities, payment of GMoU top up fund on time.

Risks	Description	Mitigation
Safety and Environment	• Exposure: Injury to personnel, acute / chronic health impacts. • Spills: Environmental pollution & reputation	Adopt manufacturer recorded practices for safe handling of chemicals. Use appropriate PPE at all times. Comply with Life Saving Rules. Spill containment bund will be constructed around the diesel tanks. Adsorbent materials (rolls, pads etc) shall be available on rig at all times.
Security.	Security challenge in the Niger Delta. Agbada field location is generally yellow (medium risk) with stealing, land dispute and internal communal wrangling being the major security threats. Hostage taking/Community disturbance	Ensure LTO is obtained & implement MoU, Put security plan in place and ensure strict adherence.

Opportunities:

This project is hinged on achieving mandatory HSE requirement for well safety, implement gas lift and re-perforation operations to add reserves and reduce non-productive time and production deferment currently experienced in the wells.

- Adopt the HSSE CF and management system elements relevant to delivery of Goal Zero. Including deployment of essential risk mitigation measures - hardwares, procedures and supervision.

Alternatives

The candidate wells have undergone all quality checks and assurances to ensure that all subsurface and well engineering risks are identified and mitigated. Alternatives to these projects include:

- AGBD-008 and -016: Continue to produce wells with the orifice insert. Carry N_2 lifting anytime there is disruption in AGG supply to bring well onstream. This alternative will result in half year NPT and deferments. The time to produce the reserves will be double, leading to delayed revenue, greater OPEX, in addition to an estimated annual N_2 lifting cost of US$1,560,000.00 per well.

- KOCR-027: If the re-completion operation is not successful, the well will be abandoned. The additional reservoir recovery from this operation will be regretted and only the integrity objective will be carried.

Carbon Management

All produced gas will be evacuated via Gbaran CPF and Agbada flowstation. Carbon emission will be minimal as is currently the practice in the fields.

Governance

This proposal is within the SPDC corporate structure and governance framework.

Group and Business Standards

This proposal and the execution of the project are consistent with the Group Business Standards. Functional supports for this proposal have been provided by Technical, Finance, Legal, Treasury, Social Performance and Tax functions etc. Structure exists within contracting team to handle and support standard operations and requirements of the nature of this workover.

Project Management, Monitoring and Review

The execution of the project is managed through the Land East Field Development & Execution Team, Wells and Engineering Hub Teams in line with the UIO/G organizational model. The Sustainable Development and Community Relations directorate is instrumental in creating the community relations that allow the team to operate. There will be regular progress report of the well delivery activities to Development Manager Onshore, the Development General Manager and to the JV Partners. All significant reviews and follow up actions had been done in the Development and Engineering Teams. Following successful completion, the wells will be handed back to the Land East Production Operations Team.

Budget Provision

This project has been included in the 2014/15 JV Programme. The project is proposed to be financed via JV funding for SPDC projects.

Group Financial Reporting Impact

This work over project will result in additional reserves being booked. The cost of the project will be capitalised and depreciated in line with Group policy. The initial outlay will hurt cash.

Production from restored reserves will boost midstream gas supply to NLNG, which will be a help to revenue, NIAT and cash.

Disclosure

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

Financing

This investment will be financed with SPDC JV funding, so formal JV approval will be required from the SPDC JV partners. The Shell share of the investment will be financed by SPDC's own resources.

Taxation

There are no unusual Taxation features.

Final Signature (Optional – all support and approvals done in eIP)

for : **Upstream International Operated, Nigeria**	
Van Bunnik, Jan *SPDC Finance Director*	*Ojulari, Bayo* *GM Development*

Appendix A - Detailed Project Parameter Data

Project Focal Point / Indicator	Chima Emelle UIO/G/DNL
DRB: Decision Executive if applicable	SPONSOR: Tom Everitt UIO/G/DN
DRB: Members if applicable	ADM: Vincent Nwabueze UIO/G/DNL

Performance Parameters	Unit	*BPX-1*	GIP	Variance details
Total GIP Opex (Shell share)	USD Mln	NA	6.3	*Opex activity.*
FID Date	MMM/YY	NA	Oct 2014	
First Oil/Gas Date	MMM/YY	NA	Jan 2015	

Performance Parameters	Unit	*BPX-1*	GIP	Variance details
Proved Developed Reserves (GES[(1)] @ RV-RT)	MMboe	NA	3.2	
Expectation Developed Reserves (GES or SWIS[(2)])	MMboe	NA	4.8	
UDC [(3)] (MOD)	USD/boe	NA	4.34	
Oil - Initial Rate (100%)[(4)] Gas - Capacity (100%)[(4)]	b/d – Oil MMscf/d-Gas	NA	2450 NA	

NOTES: Conversion of gas volumes to boe: use SIEP standard conversion of 1 Bcf = 0.1724 MMboe

(1) GES: Group Entitlement Share

(2) In PSC environment quote SWIS.

(3) UDC: SS Project Capex/GES Developed Expectation Reserves (or SWIS in PSC environment)

(4) Initial stable oil flow or first 3 months average production rate.

Appendix B - Detailed Cost per drainage point

PHASES	DAYS	COST (USD) 100% JV	
KOCR-027 (Q4 2014)			

Rig Move & Preparation	40.9	3,474,458	
Completion	8.2	2,089,559	
Well Lift	0	694,564	
Total		6,258,581	
AGBD-008 (Q4 2014)			
Rig Move & Preparation	34.2	3,670,683	
Completion	3.3	2,991,433	
Well Lift	0	694,564	
Total		7,356,680	
AGBD-016 (Q1 2015)			
Rig Move & Preparation	34.2	3,670,683	
Completion	3.3	2,991,433	
Well Lift	0	694,564	
Total		7,356,680	
Gross Total (KOCR-027/AGBD-008/AGBD-016)		20,971,941	**Shell Share = USD 6,291,582.30**