# Memorandum to the Board of Royal Dutch Shell plc Group Investment Proposal

# **Summary Information**

Shell Petroleum Development Company of Nigeria Limited (SPDC)							
100% in SPDC, whereas SPDC is the Joint Venture (JV) operator of an unincorporated JV with a 30% interest.							
Nigeria National Petroleum Company (NNPC: 55%), Total Exploration and Production Company Nigeria (TEPNL 10%), Nigeria Agip Oil Company (NAOC: 5%)							
US\$105mln Shell share, MOD, 50/50 is requested for approval in this proposal of the 100% JV estimate of US\$165mln. This proposal includes Shell equity share (30%) of US\$50mln and Shell's MCA commitment on NNPC Share(36.67%) of US\$56mln							
Gbaran-Ubie CPF North Bank Sl	noreline Protec	ction Projec	t				
Description	Complete Budget (100% IV)	Complete Budget (30% Shell	Total NNPC MCA Carry (36.67% Shell	Total Shell Share (Equity + Carry)			
	(55555)	Share)	Share)	This proposal			
Facilities (F\$mln) 151.9 45.6 55							
PMT	9.7	2.9	0.0	2.9			
Total CAPEX (\$ mln)	161.5	48.5	55.7	104.1			
SCD	3.6	1.1	0.0	1.1			
Total OPEX (\$ mln)	3.6	1.1	0.0	1.1			
Total Project (\$ mln)	165.1	49.5	55.7	105.2			
1 1			` ,	funding vehicle			
mary cash flow ll Share)  NOT APPLICABLE(Cost Only evaluation)							
Summary Economics			RTEP (%)	VIR7			
,			NA	-0.27			
High Capex -29.3 NA -0							
	100% in SPDC, whereas SPDC is JV with a 30% interest.  Nigeria National Petroleum O Production Company Nigeria (TE U\$\$105mln Shell share, MOD, 5 100% JV estimate of U\$\$165mln U\$\$50mln and Shell's MCA come Gbaran-Ubie CPF North Bank SI  Description  Facilities (F\$mln) PMT Total CAPEX (\$ mln)  Total Project (\$ mln)  The premise for this proposal is a and the proposal is a part of the O  NOT APPLICABLE (Cost Onlaber)  Summary Economics (RV-RT13) Base case	100% in SPDC, whereas SPDC is the Joint Ven JV with a 30% interest.  Nigeria National Petroleum Company (Ni Production Company Nigeria (TEPNL 10%), N US\$105mln Shell share, MOD, 50/50 is request 100% JV estimate of US\$165mln. This propose US\$50mln and Shell's MCA commitment on Ni Gbaran-Ubie CPF North Bank Shoreline Protect Budget (100% JV)    Facilities (F\$mln)	100% in SPDC, whereas SPDC is the Joint Venture (JV) of JV with a 30% interest.  Nigeria National Petroleum Company (NNPC: 55% Production Company Nigeria (TEPNL 10%), Nigeria Agip US\$105mln Shell share, MOD, 50/50 is requested for app 100% JV estimate of US\$165mln. This proposal includes US\$50mln and Shell's MCA commitment on NNPC Shared Gbaran-Ubic CPF North Bank Shoreline Protection Project    Description	100% in SPDC, whereas SPDC is the Joint Venture (JV) operator of an a JV with a 30% interest.  Nigeria National Petroleum Company (NNPC: 55%), Total Ex Production Company Nigeria (TEPNL 10%), Nigeria Agip Oil Company US\$105mln Shell share, MOD, 50/50 is requested for approval in this proposal includes Shell equity: US\$50mln and Shell's MCA commitment on NNPC Share(36.67%) of UGbaran-Ubic CPF North Bank Shoreline Protection Project    Description   Complete Budget (100% JV)   Complete Budget (30% Shell (36.67% Shell Share)			

#### Section 1: The Proposal (Management Summary)

# 1.1 <u>Management Summary</u>

This Group Investment Proposal requests approval for funding of US\$105.2mln Shell Share (US\$49.5mln Equity & US\$55.7mln Carry) which is required for the execution of the Gbaran-Ubie CPF North Bank Shoreline Protection Project. This project has the objective of protecting the Gbaran CPF shoreline from ongoing erosion caused by Nun river action; this would ensure continuous operation of the CPF throughout its design life and beyond. The project has a P50 cost estimate 100%JV of \$165.1mln

RDS Board support for this project was secured in December 2012 as part of the GU2 bundle. Group CFO agreed that separate approvals of the individual GIPs by CEPV are not required as long as the overall headline size stays within the Board mandate. Tables 5&6 in Appendix 2, show that this GIP is aligned with the board approved GFP.

The project is in the MCA tranche in BP13. The JV Partners (NAPIMS & IOCs) have been engaged and are aligned on the cost estimates (facilities and owners cost) and delivery schedule. The project cost and schedule targets are outlined in Table 1 below.

# 1.2 Project Background

The Gbaran Ubie Central Processing Facility (GBU-CPF) is located on the outside bank of a bend on the River Nun, north of Yenagoa (Capital of Bayelsa State). The Nun River is considered to be a direct continuation of the Niger River and is an untrained meandering rainwater discharge river with a sandy river bed which is surrounded by areas covered with clay and silt soils.

As a result of continuous river action, the outer bank of the river (where the GBU-CPF is located) is subject to continuous erosion. The initial plan was to protect the shoreline and riverbed on a portion of the southern section of the GBU CPF shoreline, which involved the installation of Reno mattresses along the shoreline and the adjoining riverbed.

In 2008, a contract was awarded to Pelfaco Nigeria Limited (an indigenous construction company) for this limited scope. However, in August 2010, a section of the Reno mattresses already installed on the GBU-CPF south bank failed and slipped into the Nun River, Investigation following the failure revealed the need to put in place a full protection system for the entire riverbank and bed (north and south of the GBU-CPF jetty) adjoining the GBU-CPF. Furthermore, a P&T study carried out in 2011 indicated that CPF will be impacted in 7 years based on assessed erosion rate of +/- 6m/yr

Consequently, in 2011, the services of an expert company, Nigeria Westminster Dredging and Marine Limited (NWDM) was secured to provide support to the indigenous company as a sub-contractor for the protection of the entire south bank (which was the critical section at that time), using a full rock revetment concept. The rock protection works were completed in September 2012 and 1 year post construction monitoring is currently ongoing.

During the construction works for the south bank, some sections on the north bank became critical, as the Nun river action had continued unabated and already installed facilities by the North bank were threatened. As a result of this, SPDC declared emergency on the North Bank in Q3 2011 and sand bags were dumped at critical sections, as a temporary mitigation action to prevent further deterioration and loss of facilities. This temporary measure has secured the bank till date. Additionally, P&T also carried out a feasibility study on the North bank and the full rock revetment concept was selected as optimum

In August 2012, a Contract and Procurement refresh strategy workshop was held with NAPIMS in attendance, at the workshop, NAPIMS's preferred option due to the urgency of the project was a single source award. On further engagement, it was agreed that SPDC should negotiate with Pelfaco and NWDM using the rates from the south back shore protection contract for full rock revetment.

# 1.3 Targets

The Cost and Schedule targets are contingent upon contract award in February 2015

	P50	P90
Total Project CAPEX (F\$mln)	165	182
RFSU	December 2016	

Table 1: Key Project Cost and Schedule Targets

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

The overriding business driver is to put in place an effective shore protection along the Nun River in order to safeguard the Gbaran Ubie Integrated Oil & Gas facility against erosion and scour effects of the Nun River

#### 2.1 <u>Summary Economics</u>

The FID economics evaluation was carried out on a forward-looking basis as a "cost only" using contractors cost provided by the project team. Sensitivity analysis was carried out to determine the values of the project at high CAPEX, 1 year project delay and 1.5% mark up due to BVA (Bench marked verified and approved) issues due to NNPC cost disputes. The evaluation assumed funding under the 2008 Modified Carry Arrangement (MCA) terms. The details of the results are in Table 2

PV Reference Date: 1/7/2013	NPV (S/	'S \$ mln)	VIR	RTEP	UTC (RT \$/bbl or		Payout-Time	Maximum
Cash flow forward from: 1/1/2013	0%	7%	7%	%	0%	7%		
Base Case								
RV* (\$90/bbl or \$2.01/mln btu)	-17.4	-24.3	-0.27	NA	NA	NA	NA	59.3(2015)
Sensitivities (using RV)								
High Capex (Prob < 0.10)		-29.3	-0.27					
1 year Project Delay		-22.2	-0.27					
1.5% cost markup due to BVA issues		-26.4	-0.27					

<sup>\*</sup>Same result applies to SV-RT & HV-RT as there

Table 2: Summary economics grid for Gbaran Infill Project

Parameter	Unit	PDR*	Low	Mid	High	Comments
(Shell Share)						
Capex (MOD)	US\$ mln	104.0	NA	104.1	125.0	JV & MCA
Production Volume	mln boe	NA	NA	NA	NA	Cost Only
Start Up Date		Mar-16	NA	Dec-16	NA	updated contract award schedule
Opex	US\$ mln	1.1	NA	1.1	1.3	SCD
Production in first 12 months	mln boe		***************************************	NA		cost only

<sup>\*</sup>PDR: Project Delivery Report( latest view)

Table 3: Key project Parameters (Shell share) used for the economics analysis

is no revenue stream

# Section 3: Risks, Opportunities and alternatives

# 3.1 Risks and Mitigation Plans

The project employs a comprehensive Risk and Opportunity Management system, with Risks affecting the Cost and schedule analyzed and worked into the project cost estimate and schedule accordingly. The top project risks and mitigation plans are described below;

Risks		Mitigations
1.	HSSE & SP Risks	
a.	Personnel Transfer, Jetty to Boat/barge (Drowning/Man over-board) during waterborne operations	<ul> <li>On site induction for all personnel.</li> <li>Deployment of only HUET/swimming-certified persons for water waterborne operations. Enforce buddy system for workers near or on water. Provide effective supervision /monitoring throughout the project phase. Provide life buoys and life lines for every vessel.</li> <li>Deploy only approved personal floatation devices (PFDs) /work vest.</li> <li>Provide and test Emergency Response preparedness</li> </ul>
b.	On Land & water transport (driving /boating)	<ul> <li>Carryout regular Craft/vehicles inspection and Maintain Craft/vehicle to manufacturers recommendations to avoid malfunction/breakdown</li> <li>Enforce driver/quarter master education program (DEP/MCA) to assure competence. Equipment selection to suit flood level. Carryout campaigns and implement Alcohol and drugs policy to avoid maloperation due to such influence</li> <li>Develop / Implement land/marine Journey Mgmt plan/procedures</li> <li>Routine monitoring of drivers/quartermasters.</li> <li>Deploy appropriate signage to reduce impact on 3<sup>rd</sup> party</li> </ul>
c.	Objects Under Tension/loading and offload of rocks	<ul> <li>Develop a maintenance plan for equipment and implement to eliminate equipment breakdown/ failure</li> <li>Ensure stable base/ structural support, to avoid tilting</li> <li>Deploy trained /competent operator to man equipments to avoid human error /Mal-operation</li> <li>Use lifting plan to manage all lifting activities</li> </ul>
d.	Weather (on land, water)	<ul> <li>Avail Weather information (forecast) through the use of sky scanners</li> <li>Avoid working in thunderstorm and under rain Evacuate to safety</li> <li>Train Personnel in the hazard of weather</li> <li>Cease all overhead work when wind speed is 40km/h or above</li> </ul>
e.	Community unrest /3 <sup>rd</sup> party interference	<ul> <li>Contractors are required to understand the requirements for securing Freedom To Operate (FTO), including labor rates in the host communities prior to bidding</li> <li>Develop and Implement Project Labor Agreement alongside already existing steady state GMOU to reduce</li> </ul>

	community unrest/inference.
	<ul> <li>Develop and implement a stake holder engagement plan</li> <li>Maintain a complaint register to track all issues and complaints</li> <li>Ensure implementation of GMOU with host communities before construction commences.</li> </ul>
f. Security	- Develop and deploy an approved security management plan that includes; security risk assessment and manning level
2. Hazardous waterborne operations which aggravates during high flood and high current seasons	
3. Limited dry weather window which if missed pushes construction over to following season thus elongating project completion period	performance incentive in contract to drive performance would also be included.
4. Pelfaco/NWDM in consortium agreement for the execution of the project, however there is the potential that one of them may not adhere to the terms stipulated in the consortium agreement	The terms of the EPC contract provide for enforcement on a joint and several basis against Pelfaco and NWDM
5. Poor quality work due to Contractor lacking right resources and experience to perform work in highly turbid water;	Apply learning from the South Bank Protection works which has just been completed include resourcing of dedicated QA/QC personnel, thorough review of all work processes and Quality checks of the rocks at the loading bay and the construction site
6. Need for sufficient tax base of SPDC as the MCA recovery mechanism is largely dependent on having a sufficient tax base within SPDC Ltd to absorb the capital allowances associated with the carry amounts	Analysis shows that SPDC Ltd has sufficient tax base to recover the MCAs and achieve the desired IRR
7. Delay in payment to contractors resulting from delay in issuance of mandate letters by NAPIMS can impact contractor performance	Continuous engagement with NAPIMS to ensure timely issuance of mandate letter and project cost monitoring to ensure that project is delivered within budget
Opportunities	
The project will provide an opportunity for	or skill and capacity transfer to local contractor and personnel

#### 3.2 <u>Alternatives</u>

The Option of using Sheet piling was considered however alternative was not taken as a result of the following reason

- 1. The use of rock revetment is similar to the design used for the South bank which has been completed
- 2. Availability of material and installation technology for sheet piles from water are not readily available in Nigeria

#### Section 4: Carbon Management

This project is considered carbon neutral as the sources of emissions that come from this project are fugitives from equipment / machinery being used (cars, cranes, barges.etc) and these are negligible

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

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

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

This proposal complies with Shell Group Business Principles, policies and standards. Functional support for this proposal is provided by Projects & Technology (P&T), Finance, Social Performance, Contracting & Procurement, HSE, Operations, Legal, Security, Treasury, Controllers and Tax functions.

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

Project Assurance is in place for all work scope and management of change. This is a "P&T executed" project with P&T being accountable for the delivery of technical project integration and execution. A DRB with UI Nigeria and P&T participation is in place.

#### **Section 8: Budget Provision**

It is proposed that at FID, the project budget requirement will be from the alternative funding tranche. In line with current MCA agreements, it is expected that project FID OPEX and project management costs will continue to be funded via the regular JV budgetary process.

#### Section 9: Group Financial Reporting Impact

There are no unusual accounting issues related to this GIP. Expenditure related to the project will be accounted for in line with Group Policy. The financial impact of this proposal on Shell Group Financials is as indicated in the table below:

US\$ mln	2013	2014	2015	2016	Post 2016
Total Commitment	7.4	41.7	46.4	9.7	0.0
Commitment Phasing - SCD Opex	0.1	0.4	0.5	0.1	0.0
Cash Flow					
Capital expenditure	7.3	41.3	46.0	9.6	0.0
Cash Flow from Operations	1.2	7.9	16.7	18.1	47.4
Cash Surplus/(Deficit)*	-6.1	-33.4	-29.2	8.5	47.4
Profit and Loss					
NIBIAT +/-	0.2	1.4	2.5	1.0	-17.2
Balance Sheet					
Average Capital Employed	3.2	23.8	57.0	69.2	12.4

Table 4: Financial implications of the Project

#### Section 10: Disclosure

Material disclosures, if any, will be done in line with the Group Disclosure Guidelines.

#### Section 11: Financing

Financing for the main project scopes shall be through the MCA funding mechanism. NNPC approval has been obtained for project scope and cost and the MCA agreement has been signed off with the JV partners.

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

MCAs are no longer unusual in the oil and gas fiscal structure with the FIRS. SPDC Ltd will ensure that all information required for the tax return and tax audit robustness can be accessed. Relevant tax/fiscal risk is as discussed under Section 3 above.

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

Approval is sought for US\$105mln (Shell Share), for the execution of the CPF North Bank Shoreline Protection Project

## **Section 14: Signatures**

This Proposal is submitted for approval.

Supported by:	
Guy Janssens	
FM Nigeria & Gabon	
Date / /	
For Business Approval:	For Business Approval:
Erwin Nijsse	Harry Brekelmans
VP Finance Operated	EVP UI Operated
Date /	Date /

#### **Appendix 1: Assumptions**

#### **Economics Assumptions**

- Education Tax of 2% assessable profit.
- NDDC levy of 3% total expenditure.
- Abandonment estimated as 10% of total RT CAPEX.
- Condensate was treated as oil and taxed under Petroleum Profit Tax PPT (PPT tax rate of 85%).
- ARPR 31/12/2012 variable OPEX for Gbaran CPF was used.
- SPDC Generic Opex was used for new infrastructure
  - ➤ Oil fixed OPEX 3% of cum. oil CAPEX,
  - ➤ Gas fixed OPEX 3.5% of cum. gas CAPEX

#### **MCA** Assumptions

- Partial recovery of the carry costs through a Tax Relief against Petroleum Profit Tax currently at 85%,
- OPEX and PMT not carried under current MCA arrangement. This difference will be funded through the normal JV base budget cash calls.

# The additional MCA assumptions below would only apply when there is a revenue generating project that would benefit from this project.

- All project costs on the MCA to be recovered through cost oil.
- Remaining carry costs recovered through Carry Oil (following the fiscal depreciation schedule),
- Share Oil (to be paid as agreed amount over a minimum period) calculated based on the agreed Profit Oil ceiling of IRR 8%.
- Recovery to be completed by 2019 (before expiry of the Oil Mining Lease).

## Appendix 2: Scope & Cost Estimate for the Gbaran CPF North Bank Shoreline Protection Project

#### **SCOPE**

Mobilise all personnel, material and equipment to provide full revetment and bed protection of the Gbaran-Ubie Central Processing Facility North Shoreline of approximately 1000 metres. The scope includes the following:

- Site data revalidation surveys (Bathymetric and Geotechnical)
- Detailed design
- Dredging to prepare the riverbed/bank to receive protection works and for sand filling works
- Procurement, delivery and installation of 2,200 units of 6mx2mx0.23m Maccaferri type Reno Mattresses underlain with approved quality geotextiles materials.
- Procurement, transportation and installation of approx 280,000 MT of rock
- Provision of full and real-time survey for bed / bank preparation, sheet piling and rock placement operations.
- Installation of Small Craft Intrusion Barriers (SCIB) System.
- Provision of project management services.
- 1 year post installation monitoring works

# **COST ESTIMATE**

The cost estimate (MOD 100% JV) for the full Gbaran CPF North Bank Shoreline Protection Project is as shown below.

	COST PHASING							
Description	2013	2014	2015	2016	Total			
Facilities Capex 100% JV (FUS\$mln) - less PMT& SCD	10.1	60.5	67.6	13.7	151.9			
Total Capex 100% JV (FUS\$mln) - less PMT&SCD	10.1	60.5	67.6	13.7	151.9			
PMT 100% JV (FUS\$mln)	1.9	3.2	3.0	1.5	9.7			
Opex 100% JV (FU\$\$mln)	0.3	1.4	1.6	0.3	3.6			
Total Opex 100% JV	2.2	4.7	4.6	1.8	13.3			
Total 100% JV (FUS\$ mln)	12.3	65.1	72.2	15.5	165.1			
MCA Carry (36.67) + Shell Share (30%)	6.7	40.3	45.1	9.1	101.2			
Shell Share Equity Opex only (30%)	0.7	1.4	1.4	0.6	4.0			
Total Shell Share (FUS\$ mln)	7.4	41.7	46.5	9.7	105.2			

Table 4: Yearly estimated expenditure

MCA 2 Projects	100% SPDC JV	Shell Equity Share	SPDC LTD MCA Share	Total Headline Size
Bonny NAG Minor Reservoir Devt	116	35	42	77
Gbaran 2A (C4, Epu, Koroama) including North Bank	1018	305	352	657
Gbaran 2B (KoloCreek to Soku)	721	216	245	461
Soku NAG Compression	92	28	33	60
Soku Pipelines (All 4 loops)	460	138	159	297
Total - MCA 2 Bundle All values in \$Million	2407	722	831	1553

Table 5: Excerpt from Group Finance Proposal showing projects with the MCA2 Bundle

	BASIS FOR THE GFP				BASIS FOR THE NORTH BANK GIP				
		Shell	SPDC	Total	100% JV	Shell	SPDC	Current	
	100% JV	Equity	Ltd	Headline	cost	Equity	Ltd	IP	
	cost	Share	Share	Size	(GIP)	Share	Share	Request -	
Total Infill project cost	925	277	339	617				-	
Total North Bank project cost	165	50	61	110	165	49.5	60.5		
Total cost	1,090	327	400	727	165	50	61	110	
Pre-FID (JV Funded)	(55)	(17)	(20)	(37)				-	
SCD - Infill	(14)	(4)	(5)	(9)				-	
SCD - North Bank	(4)	(1)	(1)	(2)	(4)		(1)	(1)	
	1,018	305	373	678	162	50	59	108	
PMT Element - Infill	(45)		(17)	(17)				-	
PMT Element - North Bank	(10)		(4)	(4)			(4)		
			352	657	162	50	56	105	

Table 6: Reconciliation between the GFP and the GIP

# **GLOSSARY**

AF – Alternative Funding

CPF - Central Processing Facility

DRB - Decision Review Board

ESFS – Estimate & Schedule Fact Sheet

GHG – Green House Gas

GMoU - Global Memorandum of Understanding

HEMP - Hazard & Effects Management Process

HSE – Health, Safety & Environment

HV – High Value

IOC – International Oil Companies

MCA – Modified Carry Agreement

MOD – Money of the Day

NAG – Non Associated Gas

NAPIMS - National Petroleum Investment Management Services

NLNG - Nigeria Liquefied Natural Gas Limited

NPV - Net Present Value

PMT - Project Management Cost

PPT – Petroleum Profit Tax

PSV - Project Screening Value

RFSU – Ready For Start Up

RT - Real Term

RTEP – Real Term Earning Power

RV – Ranking Value

SCD – Sustainable Community Development

SV – Screening Value

VIR - Value Investment Ratio