

The Shell Petroleum Development Company of Nigeria Limited

Internal Investment Proposal

Summary Information

Directorate	Technical Directorate.																																										
Group equity interest	100% in SPDC, whereas SPDC is the JV operator of an unincorporated Joint Venture with a 30% interest.																																										
Other shareholders / partners	Nigerian National Petroleum Corporation (NNPC) 55%; TotalFinaElf (10%); and Nigeria Agip Oil Company (NAOC) 5%.																																										
Amount	US\$ 5.09 mln MOD Shell share, in additional to previously approved US\$4.88 mln MOD bringing the total amount US\$9.97mln.																																										
Project	Shore protection to SPDC Facilities and Ogulagha Town at Forcados Terminal																																										
Main commitments	<table border="1"> <thead> <tr> <th rowspan="2">Activity Description</th><th colspan="2">Previously Approved (US\$ mln)</th><th colspan="2">This Proposal (US\$ mln)</th></tr> <tr> <th>Shell Share</th><th>100% JV</th><th>Shell share</th><th>100% JV</th></tr> </thead> <tbody> <tr> <td>Construction of 1.5km long revetment at Forcados Terminal</td><td>4.43</td><td>14.76</td><td>1.06</td><td>3.53</td></tr> <tr> <td>Construction of additional 550m revetment behind the helipad</td><td>0.00</td><td>0.00</td><td>2.20</td><td>7.33</td></tr> <tr> <td>Construction of crown wall and dredging of effluent slot</td><td>0.00</td><td>0.00</td><td>1.06</td><td>3.53</td></tr> <tr> <td>Contingency (15%)</td><td>0.45</td><td>1.50</td><td>0.66</td><td>2.2</td></tr> <tr> <td>SCD (2%)</td><td>0</td><td>0</td><td>0.11</td><td>0.37</td></tr> <tr> <td style="text-align: right;">Total</td><td>4.88</td><td>16.26</td><td>5.09</td><td>16.96</td></tr> </tbody> </table>				Activity Description	Previously Approved (US\$ mln)		This Proposal (US\$ mln)		Shell Share	100% JV	Shell share	100% JV	Construction of 1.5km long revetment at Forcados Terminal	4.43	14.76	1.06	3.53	Construction of additional 550m revetment behind the helipad	0.00	0.00	2.20	7.33	Construction of crown wall and dredging of effluent slot	0.00	0.00	1.06	3.53	Contingency (15%)	0.45	1.50	0.66	2.2	SCD (2%)	0	0	0.11	0.37	Total	4.88	16.26	5.09	16.96
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Source and form of financing	This investment will be financed with JV funding and Shell share capital expenditure will be met by SPDC's own cash flow and/or existing shareholder facility. Formal JV partners' approval will therefore be obtained.																																										
Summary cash flow	Not applicable as analysis is cost only																																										
Summary economics	The project was evaluated on incremental forward-looking basis as a 'cost' only oil facility expenditure. The project returns NPV 7% \$US-1.21mln with the maximum exposure \$US3.10mln in 2011																																										

Section 1: The Proposal

Management Summary

This investment proposal seeks approval for an additional sum of US\$5.09 mln Shell Share MOD, US\$16.96 mln 100% JV to enable completion of shore protection to SPDC facilities in the Forcados Terminal and Ogulagha Town.

The Shore protection to SPDC Facilities and Ogulagha Town project was for the construction of 1500m length of revetment to protect the eroding beach along the coastline. This revision to the previous IP is to accommodate the construction of additional scope of work to the project. The additions include: construction of crown wall on the completed revetment, boat landing opening with roundhead rather than

groynes, repair of damaged portions, extension by 750m long revetment, dredging of effluent slot and linking of the new jetty to the land.

Background

The shoreline of the Forcados river where the Ogulagha Community and some Forcados Terminal facilities are located are at risk of being completely eroded by high wave action from the Atlantic Ocean within the next few years if no urgent action is taken.

The Ogulagha Community, (host community) has repeatedly approached SPDC to help with the execution of shore protection works along their own section and SPDC promised extending the proposed shore protection work to the community. However, due to non-implementation of the request, the community shut down operations of the South Point and Estuary flow station for one month in 2004 leading to a deferment of 700Mbbl. They also threatened to shut down the Forcados Terminal if urgent steps are not taken to protect the community.

The SPDC flowlines for the South Bank area, which were buried along the shoreline are now exposed over the beach section of the shore crossing and will become further exposed as the erosion progresses. Due to the exposure, the large patches of concrete protective coatings on the flowlines have fallen off and continue to experience same as the erosion progresses.

This project is also planned to protect the Ogulagha Town and Forcados Terminal facilities area which include:

1. Helipad/ reject area (ca 1800 square meter),
2. Production facilities from Forcados oil wells 126L/T and 125T having a combined production of 10Mbpd,
3. Two bulk lines carrying 60Mbpd from Estuary to the Forcados South Bank flow station,
4. The helipad living quarters and
5. Forcados Airstrip.

Change from Previous Related Proposal

An Investment Proposal of US\$ 16.26 mln MOD (50/50 cost estimate, 100% JV) was previously approved in 2007. This was for the following activities

- (i) Construction of 1500m of revetment to protect the eroding beach along the coastline of Ogulagha Town.
- (ii) Include construction of 2No boat opening anchored with 4No groynes to protect boat opening along the revetment requested by community;
- (iii) Construction of additional 200m length of revetment
- (iv) Repair 100m long damaged revetment and dry fill the adjoining areas.

Further to the implementation of the scope above, it was agreed by NAPIMS to conduct a hydrodynamic design review of the entire shoreline to determine the effect of the implementation on already completed works and determine all works required to completely address the menace at the Forcados Area. The report of the studies have been jointly reviewed by NAPIMS and SPDC and recommendations approved by SPDC and NAPIMS.

This revision of the Investment Proposal is therefore required to accommodate recommended scope from the Hydrodynamic Design review. The details are as below

- a) The construction of a crown wall 0.5 m high the already finished sections of the revetment: The crown wall is to prevent topping over the revetment of water which causes erosion of the back slope finished with grassing.

- b) Construction of roundhead anchorage of the 2No boat landing opening instead of the originally designed groyne finishing. The roundhead will ensure the integrity of the opening while allowing the socio-economic activities of the community.
- c) Construction of 550m long revetments along the shoreline bordering SPDC facilities around the helipad area, which is eroding very fast. The erosion has eroded off a considerable part of the helipad reject area and is threatening the helipad if nothing is done
- d) Repair of damaged revetment section along the completed revetment. While the contractor was out of site between 2008 and 2009, a total length of about 400m of the revetment has been damaged.
- e) Dredging of the effluent slot between groynes 1 and 2. Dredging of the effluent slot will make the old jetty in the community useable.
- f) Construct a link platform from the new jetty to the land. For the change in shoreline between the time the construction of the jetty started and now, the new jetty now bounded with water, making it non usable as intended. With the construction and stability of the shoreline, a 30m platform linking the jetty and the ground will make the jetty usable.

The additional works and changes will provide adequate protection of the SPDC facilities and the community equally.

Table-1: Cost Phasing Capex US\$ mln MOD

Description	2010	2011	2012	Total 100%JV	Shell Share
Construction works	9.20	4.10	1.10	14.40	4.32
Contingency (15%)	1.40	0.60	0.20	2.20	0.66
SCD (2%)	0.20	0.10	0.06	0.36	0.11
Total	10.80	4.80	1.36	16.96	5.09

Section 2: Value proposition and strategic and financial context

The shore erosion affects Forcados Terminal, FLB, Helipad, Airstrip, well FORC-126/125 and the Oghulagha community. The Project is in line with SPDC strategies of enhancing asset integrity and sustainable development. The execution of the project will demonstrate SPDC as a responsible corporate organisation thereby Improve SPDC external image.

Below is a summary of the key benefits from implementing this project.

Asset integrity

- Protect oil wells (FOR-126 and FORC-125) with combined reserves of 7.2MMstb of oil
- Protection of Staff accommodation, Helipad and airstrip whose separate replacement value is estimated at \$9mln.

Prevention of community disturbances

This project is expected to reduce community disturbance with the following as potential impact:

- Deferment of 30Mbpd from south Bank/estuary flow station (Based on installed capacity of flowstation)
- Deferment of 250Mbpd of export opportunity (forcados estuarine fields including third party inject)

Summary Economics

The Shore protection to SPDC Facilities, Ogulagha Town project was evaluated on incremental forward-looking basis as oil facility project using 50/50 cost estimate. The full life cycle evaluation includes previous expenditure from 2005 to date.

Sensitivity was carried out on High Capex. Details are as shown in the economics grid below:

Table 2: Economics Grid Shore protection to SPDC Facilities and Ogulagha Town at Forcados Terminal

PV Reference Date: 1/7/2010	NPV (S/S \$ mln)		VIR	RTEP	UTC (RT \$/boe)		Payout- Time (RT) year	Maximum Exposure (RT) \$mln
Cash flow forward from: 1/1/2010	0%	7%	7%	%	0%	7%		
Base Case								
SV (\$50/bbl RT 09)	-0.77	-1.21						
RV (\$60/bbl RT 09)	-0.77	-1.21	-0.25	NA	NA	NA	NA	3.10 (2011)
HV (\$80/bbl RT 09)	-0.77	-1.21						
BEP (RT \$/bbl)	NA	NA						
Sensitivities (using RV)								
High Capex		-1.45	-0.25					3.72 (2011)
Life Cycle		-4.47	-0.42					5.94 (2011)

Key Project Parameter Data (Shell Share)

Parameter	Unit	Bus Plan (RV)	Low	Mid	High	Comments
Capex (MOD)	US\$ mln	3.3	NA	4.98	5.98	High = +20% Base
OPEX Investment (MOD)	US\$mln	0	NA	0.11	NA	
Production Volume	mln boe	NA	NA	NA	NA	
Start Up Date	mm/yyyy	NA	NA	NA	NA	
Production in first 12 months	mln boe			NA		

Assumptions:

- Project Cost is treated as Oil facility capex
- NDDC levy applied at 3% total expenditure

Section 3: Risks and alternatives

The risk associated with the project and mitigating actions are as follows:

S/N	Risk Description	Mitigation/Remedial Effort
1	Design not meeting Specification and use of right and quality materials. (Technical / Operational)	To reduce this risk exposure to ALARP, close coordination and review of progress in combination with after-action review of key milestones will be carried out. Appropriate design reviews will be completed and necessary approvals obtained. All required Discipline, FEED and Operations team shall be consulted in all phases of the project. Past performance and technical ability of the Contractors shall be key criteria in pre-qualifying stage.
2	Budget/NAPIMS Approvals Inadequate / delay in providing budget	To mitigate this exposure, NAPIMS & other partners will be continuously engaged for their

	for 2010- 11 activities could prevent construction completion	support, buy-in and provision of their own counterpart funding.
3	HSE Risk	Manage within an approved project safety plan covering all construction / logistics activities hazard analysis and mitigation methods. In addition, a project-specific HSE plan incorporating all the potential hazards relating to these projects will be put in place. SPDC HSE policies will be applicable during construction. Worksite hazard management and contractor management would be detailed out. Life saving rules will be deployed to both SPDC and contractor staffs.
4	Security Project being affected by current security situation in Niger Delta	We will operate within an approved security planned designed through the help of the Area security Advisor for Forcados Terminal area. We are aware of the Security Intelligence and Surveillance network that provides early Warning and will adhere to this network. The contractor will have own security arrangement acceptable to SPDC security officer.

Alternatives Considered

Do nothing about the erosion. This would have the following consequences.

- Ogulagha community will carry out their threat to shut down the Forcados Terminal, which is the most immediate threat.
- Loss due to erosion, within the next 2 years, of the Forcados Terminal Helipad, Camp A staff accommodation quarters and the airstrip.
- Loss over a slightly longer term of South Bank wells 125S/L and 126T.
- Shut down of South Bank and Estuary flow stations.
- Shut down of FODPA (gas supply to Terminal). This will result in a shut down of the Terminal.
- Disruption of repair works to CLP

The chosen concept is considered the most technically adequate to address the situation under consideration having been successful in protecting SPDC facilities in the already protected areas of South point since 1985.

Section 4: Corporate structure, and governance

This project fits within the existing SPDC corporate structure and governance.

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

This proposal has been discussed with the asset teams and other relevant functions and their support obtained.

Sustainable Community Development

SCD policies will be strictly adhered to SPDC's Community Relations Officers (CRO) shall engage the relevant communities to ensure that SPDC SCD principles are strictly adhered to. Areas of critical community issues to be addressed include engagement of community skilled/unskilled labour in the projects execution for capacity building/empowerment.

HSE policies will be strictly adhered to with a view to minimize the risk of accident and disruptions. In addition, a project-specific HSE plan incorporating all the potential hazards relating to these projects will be put in place. Contractor's HSE plan will be reviewed to ensure it adequately addresses all possible hazards of the project and communicated to contractor staff in kick-off meetings, daily tool box meetings and site inspections.

Section 6: Project management, monitoring and review

- Project Engineers will be dedicated to these projects to monitor progress on daily and weekly basis
- Company site representatives (CSR) will also be deployed for these projects to ensure that vendors carry out the scope of work as stated in the contract document and that good quality project is delivered to the asset teams.
- Post-investment review for these projects will be included in the overall scope.

Post Investment Reviews will be done, in line with good project management practice.

Section 7: Budget Provision

There is budget provision of \$ 3.3 mln Shell Share in Forcados Terminal activities in BP09 to cover these additional works.

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	Prior Years	2010	2011	2012	2013	2014	Post 2014
Total Commitment	4.88	3.24	1.44	0.41	0.00	0.00	0.00
Cash Flow							
SCD Expenditure	0.00	0.06	0.03	0.02	0.00	0.00	0.00
Capital Expenditure	4.88	3.18	1.41	0.39	0.00	0.00	0.00
Operating Expenditure	0.06	0.10	0.04	0.01	0.00	0.00	0.00
Cash Flow from Operations	1.21	1.39	1.64	1.69	1.65	0.96	0.49
Cash Surplus/(Deficit)	1.21	(1.8)	0.23	1.30	1.65	0.96	0.49
Profit and Loss							
NIBIAT +/-	0.23	0.16	0.11	0.07	(0.1)	(0.1)	(1.4)
Balance Sheet							
Average Capital Employed	5.86	7.76	10.48	11.54	10.84	8.96	25.54

Section 9: Disclosure

Disclosures, if required, will be done in line with existing Group and SPDC policies and guidelines.

Section 10: Financing

The project will be funded from SPDC's own generation of funds and existing shareholder facility.

Section 11: Taxation

No specific Group, regional or country sensitivities exist. There are no unusual tax considerations.

Section 12: Key Parameters

This investment proposal seeks approval for: US\$ 5.09 mln MOD Shell Share (US\$ 16.96 mln 100% JV) for the execution of the Forcados shore protection works including the additional works.

Section 13: Signatures

This Proposal is submitted to UIG/T/P for approval.

For Business approval:

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Rob Van Velden

EPF-G-T

Date / /

.....

Andrew Birch

UIG/T/P

Date / /

Initiator: Emman. I. Dibua
 EPG-TPPTC