<u>Proposal to Commence Negotiations</u> Evacuation and monetization of OPL 245 associated gas

Summary information

 Shell Nigeria Exploration and Production Company Limited (SNEPCo) The Shell Petroleum Development Company of Nigeria Limited (SPDC) 						
 50% in OPL 245 JV 30% in SPDC JV 						
 OPL 245: Nigeria Agip Exploration Company (NAE 50% and operator) SPDC JV: Nigerian National Petroleum Corporation (NNPC 55%), Total E&P Nigeria Limited (TEPNG 10%) and Nigerian Agip Oil Company Ltd (NAOC 5%) 						
Upstream International Operated (UIO) Business Nigeria						
 Nigerian Agip Oil Company Joint Venture (NAOC JV): Nigerian National Petroleum Corporation (NNPC 60%), Nigerian Agip Oil Company Limited (NAOC 20%), Oando Energy Resources Inc (OER 20%) Nigerian LNG (NLNG): Nigerian National Petroleum Corporation (NNPC 49%), Shell Gas B.V. (SGBV 25.6%), Total LNG Nigeria Limited (TLNG 15%), and Eni Int'l (10.4%) 						
To secure a gas evacuation route for OPL 245 associated gas (~0.5tcf) utilising the gas transportation assets owned by the SPDC JV (the offshore gas gathering system 'OGGS') and to enable the sale of that gas to NLNG through the NAOC JV entity. Three fully termed commercial agreements will be required to enable this which are listed (with associated headline size) as follows: 1. A gas sales agreement between the OPL 245 JV and the NAOC JV to effect the sale to NLNG (the 'GSPA'): SS NPV7 of \$106.35 mln (SS MOD Revenue: \$478.83mln). Selling price being the NLNG Sales Price – OGGS Tariff 2. A gas transportation agreement (including a balancing protocol) between the NAOC JV and the SPDC JV for the transportation of gas through the SPDC assets to the NLNG sales point (the 'GTA'): SS NPV7 of \$1.30 mln (SS MOD Revenue: \$53.77mln). Tariff range: \$0.14/mscf – \$0.28/mscf, RT16 3. A tie in agreement between the upstream OPL 245 assets and the SPDC JV assets (the 'Tie-In Agreement 'TA'): Aligned with current In-country Tie-In standards						
The objective is to support an FID decision (Q2, 2019) for the OPL 245 deep offshore ZabaZaba oil development project (the 'Project') by securing a robust and secure export route for the Project's associated gas through the OGGS to NLNG. The Project's key driver is the security and robustness of the gas evacuation route to ensure the oil production is not compromised. NLNG sales revenue is a secondary driver. Nigeria has a national domestic gas agenda requiring OPL 245 gas to be delivered to the domestic market , NAE is assuming the risk of domestication and has proposed a gas swap arrangement for one of its assets in order to keep the agreed OPL 245 gas evacuation route and monetisation scheme intact. Interim level agreements will be entered into first and these will be used to support a Project DG3, and following that the GSPA, GTA and TA fully termed agreements to be executed to support a Project FID. The Project deliverables are as follows: 1. Pre-FID Deliverables: there will be binding heads of agreement which will be used to support a Shell DG3 (i) the proposed gas sale to NLNG (the 'GSPA HoA'), (ii) for the gas transportation through OGGS to the NLNG sales point (the 'GTA HoA') and (iii) for the tie-in of the OPL 245 upstream asset to the OGGS (the 'TA HoA') 2. FID Deliverables: these are the executed GSPA, GTA and TA contracts.						

Timescales	 Q3 2016 – HoA negotiations / Q1 2017 – HoA execution and DG3 Q1 2017 – GSPA/GTA/TA negotiations / Q1 2019 GSPA/GTA/TA and FID 					
Summary economics	Economics were prepared on the basis of:					
	 NLNG Netback price minus OGGS Tariff (RV \$1.51/mmbtu, RT16) Applying the current OGGS tarrif for gas transportation (\$0.28/mscf, RT16) Assuming a full field development (Zabazaba and Etan recoverable volumes) Zero capex for gas monetisation 					
	PV Reference Date: 1/7/2016	GSPA NI (S/S \$ ml		GTA NPV (S/S \$ mln)	Total NPV7 (S/S \$ mln)	
	Cashflow forward from: 1/1/2016	0%	7%	7%	7%	
	Base Case	•				
	HV (\$1.91/mmbtu, RT16)	300.12	129.81	1.30	131.11	
	RV (\$1.51/mmbtu, RT16)	249.43	106.35	1.30	107.65	
	SV (\$1.10/mmbtu, RT16)	180.86	76.77	1.30	78.07	

Section 1: Overview

OPL 245 is a Nigerian deepwater block operated by Nigeria Agip Exploration Company (NAE) which holds a 50% stake; the remaining 50% stake is held by Shell Nigeria Exploration and Production Company (SNEPCo). OPL 245 is comprised primarily of oil within two fields named Zabazaba and Etan. Whilst primarily comprised of oil, Zabazaba and Etan in combination possess associated gas of approximately 0.5 trillion cubic feet (tcf).

Venture partners are currently focused on developing Zabazaba first, which has been matured to a DG2 within SNEPCo and to a VAR3 equivalent within NAE. NAE currently propose an FID for Q1, 2017 while SNEPCo sees an FID more likely in Q2, 2019; however an executed HoA agreement is required to progress beyond SNEPCo DG3 scheduled for Q1, 2017.

In addition, there is currently a directive by the Federal Government of Nigeria mandating the development and supply of OPL 245 gas to the domestic market. To fulfil this obligation, NAOC JV has verbally agreed in principle to divert an equivalent volume of gas from the OBOB field currently feeding NLNG to meet the OPL 245 Domgas obligation. As such the scope and purpose of the three agreements described in this PCN is limited to ensuring an evacuation route to NLNG, with NAOC JV accepting the risk of meeting the obligations to supply the domestic market.

Section 2: The proposal

- Pre-FID Deliverables: there will be binding heads of agreement to support a Shell DG3 for (i) the proposed gas sale to NLNG (the 'GSPA HoA'), (ii) for the gas transportation through OGGS to the NLNG sales point (the 'GTA HoA') and (iii) for the tie-in of the OPL 245 upstream asset to the OGGS (the 'TA HoA').
- 2. Enter into fully termed agreements (subject to future GIP for OPL 245) for FID as follows:
 - a. A gas sales agreement between the OPL 245 JV and the NAOC JV to effect the sale to NLNG (the 'GSPA'): SS NPV7 of \$106.35 mln (SS MOD Revenue \$478.83mln)
 - i. Gas title and risk transfer: Risk and title to transfer from OPL 245 JV to NAOC JV at the H-Block Tie-In point
 - ii. Depletion Contract: no obligation on the upstream to supply a set amount of gas to the buyer; no obligation on the buyer to pay for gas not supplied, however, the buyer will have an obligation to take and pay for the gas if delivered to the supply point.
 - iii. Value: OPL 245 JV to receive NLNG sale less transportation tariff;
 - iv. Priority: To be given to OPL 245 gas over other competing sources.
 - Keep Whole: NAOC JV to keep OPL 245 Parties whole in the event they are forced to divert to domestic market.

- b. A gas transportation agreement between the NAOC JV and the SPDC JV for the transportation of gas through the SPDC assets to the NLNG sales point (the 'GTA'): SS NPV7 of \$1.30 mln (SS MOD Revenue \$53.57mln)
 - i. Value/Tariff: OGGS Opex estimated at \$0.14/mscf, RT16 will form the minimum for the OGGS tariff. Whilst \$0.14/mscf is the low case, the base case tariff for transport is \$0.28/mscf, RT16 as per 2005 arrangements currently under dispute with NNPC and subject to future negotiation with NNPC.
 - ii. Gas balancing: Any volume loss via gas transportation through OGGS will be borne solely by NAOC JV as will be reflected in the gas balancing protocol (included in the TA) to be signed with the shipper. In the event of a diversion, such diverted quantity will be reimbursed by SPDC JV via a transfer of volumes towards NLNG
- c. A tie in agreement between the upstream OPL 245 assets and the SPDC JV assets (the 'Tie-In Agreement 'TA'):

Section 3: Value proposition and strategic context

The objective is to support an FID decision (Q2, 2019) for the OPL 245 deep offshore ZabaZaba oil development project (the 'Project') by securing a robust and secure export route for the Project's associated gas (through the OGGS to NLNG). The Zabazaba project currently has a SS NPV7 of \$987 mln, with a peak production of 131.8kpbd (OP15); this is the value that the export route is looking to secure. As NAOC JV is taking the risk of domestication, should there be any sales upside as a consequence, then that would be for ENI's sole benefit, equally in the event there is a loss that downside is ENI's.

Table 2 below shows the forward looking value upside from the proposed commercial arrangement.

NLNG Transfer Price (USD/mmbtu RT16)	OGGS Tariff (USD/mscf RT16)	Gas Sales Price (USD/mmbtu RT16)	OPL 245 AG NPV7 SS - GSPA (mln USD)	SPDC Tariff NPV7 SS - GTA (mln USD)	Total SCiN NPV7 SS (mln USD)
2.19 - HV	OCCCT :	1.91	129.81	1.30	131.11
1.79 - RV	OGGS Tariff @ 0.28 (Base Case)	1.51	106.35	1.30	107.65
1.39 - SV		1.10	76.77	1.30	78.07
1.01 - LV		0.73	51.00	1.30	52.30
2.19 - HV	OGGS Tariff @ 0.14	2.05	139.35	-	139.35
1.79 - RV		1.65	116.24	-	116.24
1.39 - SV		1.25	86.57	-	86.57
1.01 - LV		0.87	60.89	-	60.89

Table 2: Value Proposition

Section 4: Risks, opportunities, Alternatives considered

Risks

- 1. NNPC/NAPIMS approval: NNPC via their stake in NAOC JV & SPDC JV will be involved in any every facet regarding this construct; including the compulsory domestication of the gas. The risk is that NNPC can derail any part of this process if it does not agree with the construct.
 - <u>Mitigation Action(s):</u> Engagements have taken place with NAPIMS at the Gas Directorate level; current construct regarding domestication has been supported via a formal letter from NNPC
- Change in NNPC Corporate personnel: Change in NNPC personnel could potentially change the already supported construct, thus derailing progress
 - <u>Mitigation Action(s)</u>: Re-engage new head of Gas Directorate and/or GGM NAPIMS to re-enforce working construct. In parallel, proceed with engagements at NAPIMS level using NNPC previously agreed construct.

- 3. SNEPCo/NAE Misalignment: There is currently a misalignment in FID timelines between SNEPCO & NAE, NAEs optimistic proposed FID of Q1, 2017 could potentially derail any agreement on the existing construct Mitigation Action(s): Shell Working Interest Share (50%) provides a strong basis for decision control on the block; an agreement will have to be reached before any potential development can commence (Previous NAE FID timelines have been moved to reflect current realities). HoA/GSPA will specify jointly agreed timelines.
- Ongoing Investigations on OPL 245: The ongoing investigation on the transaction for the sale of OPL 245 presents a risk of delay, suspension, or termination of the project
 <u>Mitigation Action(s)</u>: Project will proceed on basis of normal Opportunity Realisation Standards (ORS)
- 5. Petroleum Industry Bill (PIB): The PIB is currently in the second reading in the House of Representatives. Proposed terms, if implemented might have an effect on the financials currently presented in this document Mitigation Action(s): Possible effects of the PIB are currently being managed at the corporate level; any potential impact will be identified and mitigated to preserve best possible value. In addition, the contracts proposed in this document do not require any additional capex investment above current project capex, hence impact is minimal
- 6. NAOC JV as buyer and diversion to domestic market of OPL 245 gas: Whilst this construct relieves SPDC JV from the onus of supplying the domestic market, the risk remains that (i) DPR may not be satisfied that SNEPCo has complied with the requirement to domesticate its proportionate share of the OPL 245 gas if NAOC fails to divert onshore volumes (that currently feed NLNG) to the domestic market; and (ii) Since the GSPA will be between OPL 245 JV (NAE operated) and NAOC JV (NAOC operated), there is a risk that certain relevant protective clauses that underpin this construct are not reflected in the GSPA.

 Mitigation Actions: (i) Binding HOA (non-binding is insufficient given the risk allocation), (ii) Include clause within the HOA and the GSPA obligating NAOC JV to commit equivalent volumes of its onshore gas into the domestic market if required by Government; (ii) Direct involvement of SNEPCo at the GSPA discussion/negotiation table.
- 7. Third party gas in OGGS and the impact on flexibility of operations: The GTA with NAOC JV presents a new construct where SPDC JV is managing third party gas in OGGS. Having control of all gas within OGGS will more easily allow SPDC JV (as operator of OGGS) to control the flow direction and the end market as needed. This may come into play if OGGS were in the future to be treated as a pressurized gas vessel flowing in any direction at behest of SPDC JV.

 Mitigation Actions: The relatively small OPL 245 gas volumes temper this risk significantly (OGGS Capacity at 1bcfd vs OPL 245 Peak production at ~170 MMscfd). Also the connection point is the H-block tie-in point which is on one extreme of the OGGS and thus not likely to disrupt flow direction of gas stemming from other assets along the pipeline.
- 8. NLNG ullage constraint: NLNG not having capacity to process gas from OPL 245.
 <u>Mitigation Actions:</u> Historically, NLNG has always had ullage despite projections of being at capacity. This aside, NAOC JV will be substituting OBOB gas with OPL 245 gas within their Gas supply obligations under the relevant NLNG GSA. Also, the priority principle embedded within the HoA will give OPL 245 gas precedence over NAOC JV NAG sources of gas entering NLNG.
- 9. Shutdown of NLNG: A shutdown of NLNG will mean that OPL 245 gas will not be received at the NLNG end. This could result in SPDC JV rejecting OPL 245 and possible shut-in of production at OPL 245. Mitigation Actions: Embedded within the HoA (to the GTA) are provisions that allow for an alternate evacuation route westward via the OGGS to an alternate market, however SPDC shall maintain control on the direction and priority of gas evacuation. For reconciliation, a gas balancing principles would be included in the HoA to the GTA with SPDC JV and further agreed as part of the fully termed GTA.
- 10. SNEPCo Credit Risk re NAOC JV non-payment: Base Case economics assume full netback. Key sensitivity is zero revenue (because NNPC sits on it in NAOC JV). SPDC JV TA is a key mitigation for failure to recover OGGS opex for the same reason of non-payment.
 Mitigation Actions: SNEPCo will carry credit risk on NAOC JV for the revenue stream under the GSPA. NAE's share in OPL245 is greater than ENI's interest in NAOC JV so their interests will be to secure revenue in OPL

245. In the event that NAOC JV defaults, flaring and shut in won't be considered feasible options hence operations would likely continue.

11. Oando (as part of NAOC JV) not consenting to the GSPA HoA.

<u>Mitigation Actions:</u> Focus on obtaining NAPIMS consent which will influence Oando to support construct as a party in the NAOC JV. In the event that NAOC JV is NPV negative under this construct, this risk is still likely to materialise. Mitigation then would be to reflect that in the transfer price from OPL245 to NAOC JV, for which an update to this mandate would be sought.

Opportunities:

• This is a straight-forward case of the gas evacuation and monetization of small volumes of gas to facilitate oil production. No further opportunities beyond this are envisaged.

Alternatives:

• OPL 245 gas flow via OGGS towards Forcados (rather than toward NLNG):

Associated gas flow via the OGGS to NLNG was chosen as the default construct as it was regarded as the most credible and readily available route for OPL 245 gas. NLNG has capacity to absorb a varied flow rate and is not reliant on a steady supply profile required by domestic customers of gas (as would be the case if flow was toward Forcados). Also NLNG provides a respite to the unreliability of domestic customers to off-take gas. To make up for OPL 245 gas not flowing to the domestic market, NAOC JV will be diverting OBOB (tentative) volumes in the same quantity as OPL 245 gas, to the domestic market.

SPDC JV as buyer of OPL 245 (as opposed to current construct of NAOC JV as buyer):

SPDC JV as buyer of OPL 245 gas would have the benefit of a Shell controlled entity (SPDC JV) having title to all gas that passes through the OGGS. However, this construct was not chosen for the following reasons:

- Domestication of OPL 245 gas was not something that SPDC could commit to. Thus, NAOC JV had to step in to be the domesticator, and given that OPL 245 supply would back-fill any diverted onshore NLNG gas, the domesticator (NAOC JV) inherently had to be the buyer as well.
- NAOC JV, as buyer and domesticator of OPL 245 gas, has to assume the onus of delivering gas agreements according to their maturation timeline (which differs from that of SNEPCo) and has to shoulder any complications stemming from domestication e.g. finding a domestic gas customer, fulfilling a flat gas profile, receiving payment from domestic customer, guaranteed off-take by domestic customer etc.

Section 5: Negotiation Strategy

Leverage NAOC's enthusiasm for FID on OPL 245 to secure advantageous terms for SNEPCo and SPDC in the agreements required to monetise OPL 245 associated gas. Join NAE in engagements with NNPC/NAPIMS to ensure direct line of sight on risks (including domgas and non-payment) and related mitigations.

The HoAs will be negotiated and executed to support a Shell DG3 in Q1 2017 – these agreements will detail all the necessary key principles in order to support the fully termed agreements. Post DG3 the agreed principles will be detailed in the fully termed GSPA, GTA and TA agreements to be executed prior to FID in Q2 2019.

Setting the stage

- 1. Respective ENI and Shell entities (SNEPCo/SPDC Ltd) have held exploratory engagements on HoA terms to ensure consistency of approach.
- 2. Previous to recent NNPC changes, NNPC Corporate engagements had taken place with formalized buy-in obtained Vis a Vis export construct. NNPC had also made contact with NAPIMS providing the green-light to proceed with HoA negotiations. As mentioned, this premise is still the working premise, but may be modified given the new regime.
- 3. Other parties likely to be relatively muted. Total (within SPDC JV) will not have any negotiating power vis a vis the gas transportation agreement as SPDC has full authority to sign such operational type contracts.

Section 6 Corporate structure, and governance

No new entities will result from this negotiation. The activities will be undertaken within SNEPCo Ltd (100% Shell) who is also the shareholder in OPL-245.

Section 7: Functional Support and consistency with Group and Business Standards

Functional support from legal, economics, tax and finance (business finance, controllers, and treasury) has been received.

Section 8: Project management, monitoring and review

GM Commercial Nigeria/ Gabon (Martin Foley) is on the Decision Review Board for the OPL 245 project. The execution of the negotiations for the HOA and final contracts will be done under the governance of the DRB.

Section 9: Budget provision

Staff cost are budgeted under SNEPCo's annual Opex. The OPL-245 development has FIRM feasex up to FID, with the projects Etan and Zabazaba classified as an option (class 3) in OP'15.

Section 10: Group financial reporting impact

Group Reporting impact would be assessed at the time of submission of GIP for the execution of GSPA/GTA. No changes on the financial reporting are expected from these negotiations.

Section 11: Disclosure

No disclosures are required in relation to this negotiation.

Section 12: Financing

Not applicable. Feasex has been provided up to FID and all capex falls under the oil development GIP.

Section 13: Taxation

Taxation assumptions have been reviewed. No other material or unusual tax risks have been identified

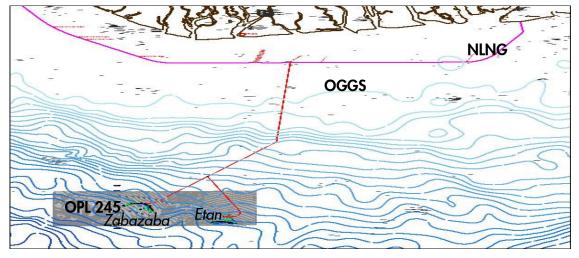
Section 14: Key Parameters

This PCN seeks mandate for:

- 1. SNEPCo (as part of the OPL 245 JV) to execute a binding Heads of Agreement and to negotiate a fully termed version (the GSPA) for the purpose of selling OPL 245 gas to NAOC JV, whereby the sales price is the NLNG netback price minus an OGGS Tariff
- 2. SPDC (on behalf of the SPDC JV) to execute a binding Heads of Agreement and to negotiate a fully termed version (the GTA including a gas balancing protocol) for the purpose of transporting OPL 245 associated gas via the OGGS from the H-block tie-in point to NLNG within a Tariff Range of \$0.14/mscf \$0.28/mscf, RT16
- 3. SPDC (on behalf of the SPDC JV) to execute a binding Heads of Agreement and to negotiate a gas tie-in agreement to facilitate item 2.

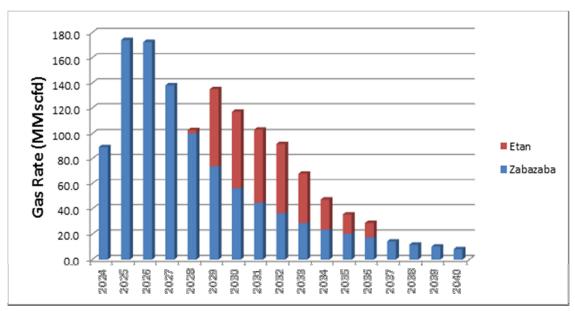
Section 15: Signatures Initiated by: Martin Foley, SEPA-UPO/G/C Date: ... / ... /... Supported by: Consented to: Simon Henry, P RDS-ECSH Ben Van Beurden, CAM RDS-CEBB Date: ... / ... /...

APPENDIX 1: MAP



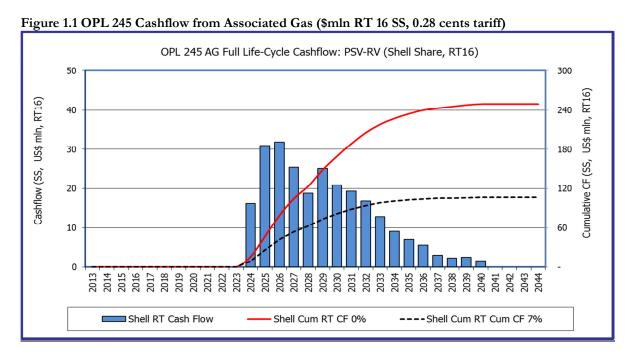
^{*}Etan connection may not be part of future FDP

APPENDIX 2 - Associated Gas Profile



APPENDIX 3 – Summary Economics

The economic analysis is a forward looking evaluation based on OPL 245 (Etan & Zabazaba) OP15 gas volumes (515 bcf). The value for the gas was derived by calculating the NPV7 for the Project with gas and without gas (zero gas production). The capex is assumed to be fully borne by the oil revenue and hence no costs were removed when calculating the value of the project without gas; this is a more conservative view and is believed to best represent expected gas profit. Since all costs are borne by the oil revenue, the Cashflow shown for the gas is only positive as there are no directly associated costs (Figure 1.1).



Gas sales price from OPL 245 is calculated as a netback of the NLNG transfer price net of the OGGS tariff incurred for transporting the gas e.g. if SPDC JV charges an OGGS tariff of \$0.28/mscf RT16, using the current HV for NLNG transfer price of \$2.19/mmbtu would give a netback price of \$1.91/mmbtu RT16. Hence, there is no profit for the initial buyer of the gas (NAOC JV) and all the profit is retained within the upstream venture (OPL 245 JV). A range of Gas price realisations are shown in Figure 1.2

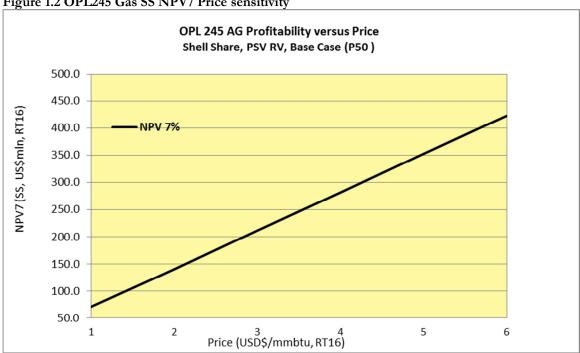


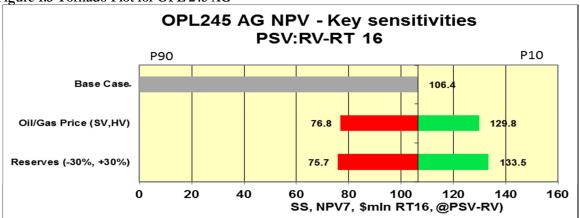
Figure 1.2 OPL245 Gas SS NPV7 Price sensitivity

In addition to the profit generated by the OPL 245 JV, the SPDC JV profit from the OGGS tariff has also been calculated to give the total SCiN NPV at various gas prices (Table 1.1). The high NLNG Transfer Price at HV-RT16 yields a total SS NPV7 of \$131.11 mln RT16, at SV-RT16, it yields a total SS NPV7 of \$78.07 mln RT16 while at LV- RT16 yields a total SS NPV7 of \$52.3 mln RT16. These scenarios reveal the best and worst case value possibilities for SCiN under the current base case. Sensitivities also shown below where Tariff = OGGS Opex (\$0.14/mscf)

Table 1.1

NLNG Transfer Price (USD/mmbtu RT16)	OGGS Tariff (USD/mscf RT16)	Gas Sales Price (USD/mmbtu RT16)	OPL 245 AG NPV7 SS - GSPA (mln USD)	SPDC Tariff NPV7 SS - GTA (mln USD)	Total SCiN NPV7 SS (mln USD)
2.19 - HV	OCCCT :	1.91	129.81	1.30	131.11
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2.19 - HV	OGGS Tariff @ 0.14	2.05	139.35	-	139.35
1.79 - RV		1.65	116.24	-	116.24
1.39 - SV		1.25	86.57	-	86.57
1.01 - LV		0.87	60.89	-	60.89

Figure 1.3 Tornado Plot for OPL 245 AG



Assumptions

- Applicable fiscal regime is the PPTA/PSC 2000 for oil and CITA+AGFA for gas
- OPL 245 project is planned to develop 515 bcf of associated gas
- All costs related to the project, including AG evacuation costs, are borne by the oil revenue
- 2016 PSV applied (Brent maker prices of SV60, RV80, HV100) all \$/bbl, RT2016
- RT16 flat prices for NLNG have been calculated for current Train 1-6:
 - o \$1.01/Mmbtu RT16 for T16 for PSV-LV (\$40/bbl Brent & \$2.25/Mmbtu HH, RT16)
 - o \$1.39/Mmbtu RT16 for T16 for PSV-SV (\$60/bbl Brent & \$3.5/Mmbtu HH, RT16)
 - o \$1.79/Mmbtu RT16 for T16 for PSV-RV (\$80/bbl Brent & \$4/Mmbtu HH, RT16)
 - \$2.19/Mmbtu RT16 for T16 for PSV-HV (\$100/bbl Brent & \$5/Mmbtu HH, RT16)
- OGGS Tariff used is \$0.28/mscf RT16; tariff escalated @ 2% per year
- Education Tax of 2% assessable profit
- NDDC levy of 3% total expenditure
- Oil Tax rate for OPL 245 is 50%
- Gas Tax rate for OPL 245 is 30%
- Tax rate for OGGS (SPDC) is 85%
- Royalty rate at 0% for Oil
- Royalty rate at 5% for Gas
- OGGS OPEX of \$0.14/Mscf
- Economic cut-off is 2040