Group Investment Proposal

Summary Information

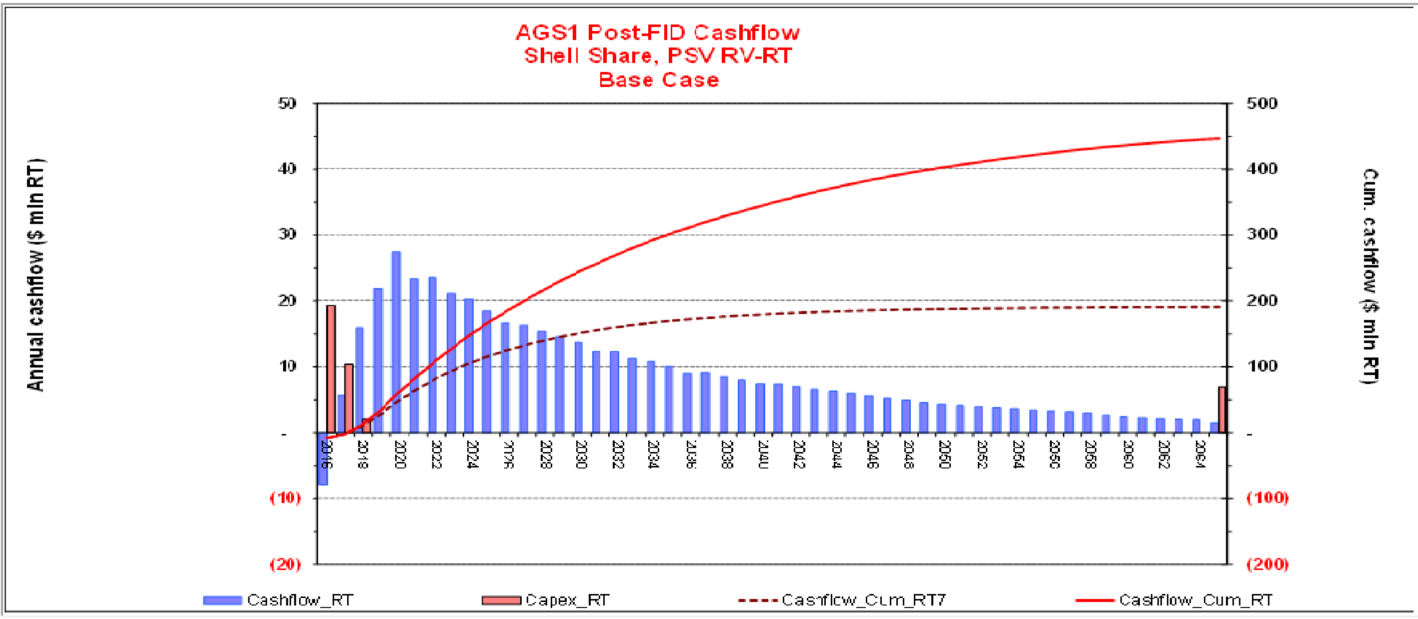
Business Unit and Company	The Shell Petroleum Development Company of Nigeria Limited (SPDC)
Group Equity Interest	100% in SPDC, whereas SPDC is the operator of an unincorporated JV with a 30% participating interest share.
Other shareholders / Partners	Nigeria National Petroleum Company (NNPC): 55%, Total E&P Nigeria Limited (TEPNL): 10%, Nigeria Agip Oil Company (NAOC): 5%
Business or Function	Upstream International
Amount	This GIP seeks approval for a further investment of US$69.5mln (Shell share) 90/10 MOD, after discounting cost of divested (assets) scopes in the original GIP (i.e US$39.6m out of US$222.1m; net original GIP US$182.5m). With this proposal, total investment becomes US$252.1m (Shell share) 90/10, MOD of which US$223.5mln is sunk cost.
Project	AG (Associated Gas) Solutions Phase 1 Project, incorporating: Bonny Flowstation, Adibawa Flowstation, Saghara, and Otumara Flowstations. Utorogu, Ughelli East & West Flowstations which were previously within the AGS-1 portfolio have been divested.
Source and Form of Financing	This investment will be financed with JV funding, and Shell share of the expenditure will be from SPDC's own cash flow.

Main Commitments $USD mln (MOD)

Description	Previously Approved GIP	Sunk Costs (ITD 2015)	Expenditure not Approved (100%)	Estimate to Complete (100%)	Expenditure not Approved (Shell Share)	Estimate to Complete (Shell share)	This Proposal (100%)	This Proposal Shell Share	Total GIP (100%)	Total GIP Shell Share
Original GIP	740.3									
Less: Divested Scopes (Utorogu, Ughelli E/W) + contigency	131.9									
Balance od GIP for Current Scope	**608.4**									
Otumara + Contigency	313.1	503.4	190.3	87.5	57.1	26.3	277.7	83.3	590.9	177.3
Adibawa + Contigency	140.2	126.5	-13.7	11.9	-4.1	3.6	-1.8	-0.5	138.4	41.5
Bonny + Contigency	116.0	57.1	-58.9	0.0	-17.7	0.0	-58.9	-17.7	57.1	17.1
Contigency to Complete	0.0	0.0	0.0	7.5	0.0	2.3	7.5	2.3	7.5	2.3
Total Capex (Post FiD)	**569.3**	**687.0**	**117.7**	**107.0**	**35.3**	**32.1**	**224.6**	**67.4**	**793.9**	**238.2**
SCD Opex	17.9	4.3	-13.6	9.8	-4.1	2.9	-3.8	-1.1	14.1	4.2
Total Capex + Opex (Post FiD)	**587.2**	**691.3**	**104.1**	**116.8**	**31.2**	**35.0**	**220.8**	**66.2**	**808.0**	**242.4**
Pre-FiD Expenditure	21.2	21.2	0.0	0.0	0.0	0.0	0.0	0.0	21.2	6.3
Total Expenditure (50/50)	**608.4**	**712.4**	**104.0**	**116.8**	**31.2**	**35.0**	**220.8**	**66.2**	**829.2**	**248.8**
Overrun Allowance to 90/10 MOD	0.0	0.0	0.0	11.0	0.0	3.3	11.0	3.3	11.0	3.3
TOTAL (90/10 MOD)	**608.4**	**712.4**	**104.0**	**127.8**	**31.2**	**38.3**	**231.8**	**69.5**	**840.2**	**252.1**

The Estimate to Completie is from January 2016 to 2018

Summary Cash Flow



Summary Economics

RV-RT ($80/bbl RT16)	NPV 7% (US $mln)	VIR 7%
Base Case *	190.9	6.19
Full Life Cycle	105.4	0.34

*Note: This is for cash flow forward

Section 1: The Proposal

Management Summary

The AGS-1 Investment Proposal was approved for the execution of the Associated Gas Solution (AGS) Project for four nodal areas, i.e. Adibawa, Utorogu & Ughelli East/West, Otumara (including Saghara) and Bonny.

The projects were aimed at achieving flares out for the fields starting from the year 2012 in compliance with Shell Group and Nigerian Government's aspirations to discontinue routine flaring as part of oil production activities.

Utorogu and Ughelli East/West fields were subsequently divested in 2012 while Bonny has been commissioned and capitalized. Works have also progressed to an advanced stage in respect of Otumara-Saghara and Adibawa with OSD dates of Sept. 2016 respectively.

The purpose of this additional investment proposal is to cater for the increase in the project costs and change in schedule as detailed below.

At FID, firm contract prices were available for all the six nodal areas except Otumara, the other 5 scopes were to be executed under the omnibus Domgas Facilities contract that also included Non-asscociated Gas facilities in other sites of Agbada and Alakiri. In order not to delay FID for the bundle of projects in the AGS1 scope, decision was made to go with the internal cost estimates for Otumara in the GIP budget proposal. The EPC contracts for Otumara were finalized about a year after FID, contracts costs exceeded estimates used in the GIP by $117m (49% above estimate). The Estimate at completion was revised for the overall AGS1 at this point, however, PMT decided that supplemental funds will not be required as most of the growth was offset by gains from the change to industry standard equipment for the other two projects ($70m) within the portfolio. Futhermore, the GIP also carried a P50 contingency of $92m (net of divested assets) and in addition, the Investment Decision Manual at that time allowed a 10% overrun on approved GIP costs, which in combination gave an impression of GIP adequacy.

Cost Growth:

Otumara-Saghara scope experienced the most significant cost growth – See waterfall in Appendix 1 below. Major components of the cost growth are as follows (100% basis);

- **EPC Award costs:** the approved GIP was based on internal cost estimates for Otumara AGS facilities and pipelines contracts The EPC award price was about 49% more than the estimated price largely due to the effect of higher oil prices on the construction market between 2008 when estimates were frozen and 2010 when bids were received.

EPC Contracts for Otumara Scope	GIP Estimate USDm	EPC Contract Value USDm	Variance USDm
Eng, Construction, commisioning of Pipelines	42.8	101.9	59.1
Eng, Construction, commisioning of CPF	197.1	255.3	58.2
Total	**239.9**	**357.2**	**117.3**

- **Contract Variations:** Contract variations and claims, mostly driven by community shutdowns, increase in scope, security and logistics, represent about 31% growth on the approved GIP.

Otumara CPF Facility Variation Orders (VOs)	USDm
Additional scopes: Cold by-pass Valves, Piling to Refusal instead of design depths, additional logistics	10.0
Increase in no of piles and steel structures post FEED	18.9
Extension of Time for Community induced delays	54.6
Additional Logistics on Transportation of CPF Modules to site, additional site services, temporary accomodation and electrification of Sahara Flowstation	32.0
Total	**115.5**

Otumara Pipelines VOs and Claims	USDm
Additional scopes: Transportation of Linepipes from Coating yard to site, work stoppage for security lockdown	2.3
Claims: Stoppage of work by Community	18.4
VOs: variation scopes on HDD pipelay	5.1
Total	**25.8**

- **Owners cost**: growth in owners cost($39m) due to prolonged site works and additional resources needed to manage the complex logistics, HSE exposures and domiciliation of fabrication works in-country.

Expenditure phasing

Table 2 shows the remaining expenditure phasing for the projects.

Table 2: Forward-looking Expenditure phasing for the AGS-1 projects (SS) Shell share (USD $mln)

GIP Phasing (Shell share)	2016	2017	2018	TOTAL
Capex (OP15)	23.1	5.4	0.0	**28.5**
Total Capex (Forward looking)	19.4	10.6	2.1	**32.1**

- The CAPEX (Forward looking) for 2016 to 2018 is captured in OP16 submission. The USD $32.1mln consists of USD $9.7mln (Q1 2016 Ytd spend) and US $22.4mln (forward looking April 2016 to 2018).
- In 2014, Idle time/Standby costs arising from the Otumara scope of AGS1 was USD $4.8mln (100%), out of this amount USD $4.2mln occurred outside 14 days for which the Shell Share amounting to USD $1.3mln was written to P&L.

Section 2: Value Proposition and Strategic and Financial Context

The primary objectives of the AG Solutions project among others include:

- Maintaining economic production of 177 Mmboe from the fields beyond 2016 and license to operate (LTO) through compliance with statutory requirements to secure revenue/income
- Enabling Maturation/booking of reserves for a further 75MMboe of further oil development.
- Complying with Group policy on Green House emission.
- Maintaining JV Reputation and aligning with Stakeholders Aspiration.

All contracts for execution of the project were approved by NNPC, however approvals are still pending for some subsequent Variation Orders (VOs) on these contracts amounting to $126m (100%). These VOs resulted from the additional costs mentioned in Section 1 above and they are currently at various levels of progress within NAPIMs and NNPC. Out of these VO value, SPDC took Local Decision Limits (LDL) to progress and pay for $74m pending

NNPC approval (other JV Partners have paid for their shares of the cost), maximum exposure for Shell is 55% of the LDL value. However, there is high likelihood that final approval will be received from NNPC on the pending VOs, NAPIMs representatives were fully engaged and they participated in the negotiation of the VOs with the contractors.

Summary Economics

The economics evaluation for AGS1 was carried out on forward-look basis using latest estimates cost as provided by the project team. Sensitivities were also carried out on the following

- High Capex (P90)
- Low Capex(P10)
- High Opex (P90)
- High Reserves (P10)
- Low Reserves (P90)
- Full Life Cycle

The results indicate that the project is robust in the base case and however the project does not meet the VIR threshold for the Full life (but still better than the 2009 GIP). The Base case is robust because of the increase in PSVs and Gas prices since 2009, Lower flare charge and Capex effects due to sunk costs in the past. (See Table 3). This opportunity is most sensitive to reserves, as shown in the Tornado plot in chart 2 below while not as sensitive to CAPEX and OPEX due to spend in the past. Therefore, focus should be on realization of estimated reserves.

Table 3: Economics Grid (Shell Share RT16)

PV Reference Date: 1/07/2016	NPV ($/$ $ mln)		VIR	RTEP	UTC (RT $/boe)		Payout-Time (RT)	Maximum Exposure (AT)
Cash flow forward from: 01/01/2016	0%	7%	7%	%	0%	7%	yyyy	$ mln (YYYY)
Base Case								
LV-RT ($40/bbl RT16)	235.1	102.5	3.32	>50	1.34	2.00		
SV-RT ($60/bbl RT16)	350.6	156.9	5.08	>50	1.34	2.00		
RV-RT ($80/bbl RT16)	446.7	190.9	6.19	>50	1.34	2.00	2016	0.03(2016)
HV-RT ($100/bbl RT16)	552.5	232.2	7.52	>50	1.34	2.00		
BEP					NA	NA		
Sensitivities (on base case RV-RT16)								
High Capex (P90)		190.7	5.99					
Low Capex (P10)		191.1	6.30					
High Opex (P90)		189.8	6.15					
High Reserves (P10)		233.1	7.55					
Low Reserves (P90)		148.8	4.82					
Otumara/Saghara AGS		170.7	6.24					
Bonny AGS		19.3	NA					
Adibawa AGS		0.9	0.27					
Full Life Cycle		105.4	0.34	12.3				

Table 4: Key Project Parameter (SS) Shell share MOD

Parameter	Unit	Bus Plan (RV)	Low	Mid	High	Comments
Capex (MOD)	US$ mln	32.1	31.5	32.1	33.1	Inclusive of sunk cost in 2016
Production Volume	mln boe	53.1	42.5	53.1	63.7	
Start Up Date		Sep-16	Nov-16	Sep-16	NA	Project cannot have a P10 start date given maturation
Opex	US$ mln	33.1	26.5	33.1	39.7	SCD of 0.87mln Year on Year

Chart 2: Cash-flow Plot AGS1 (FLC)

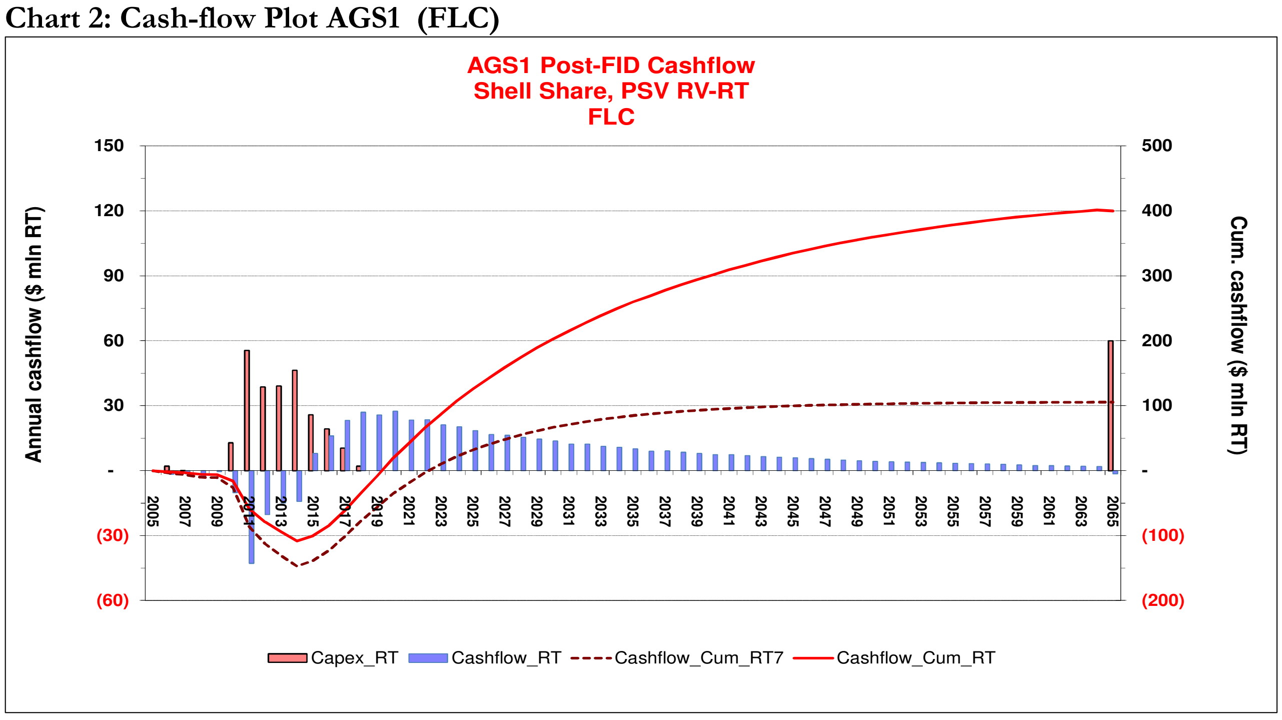
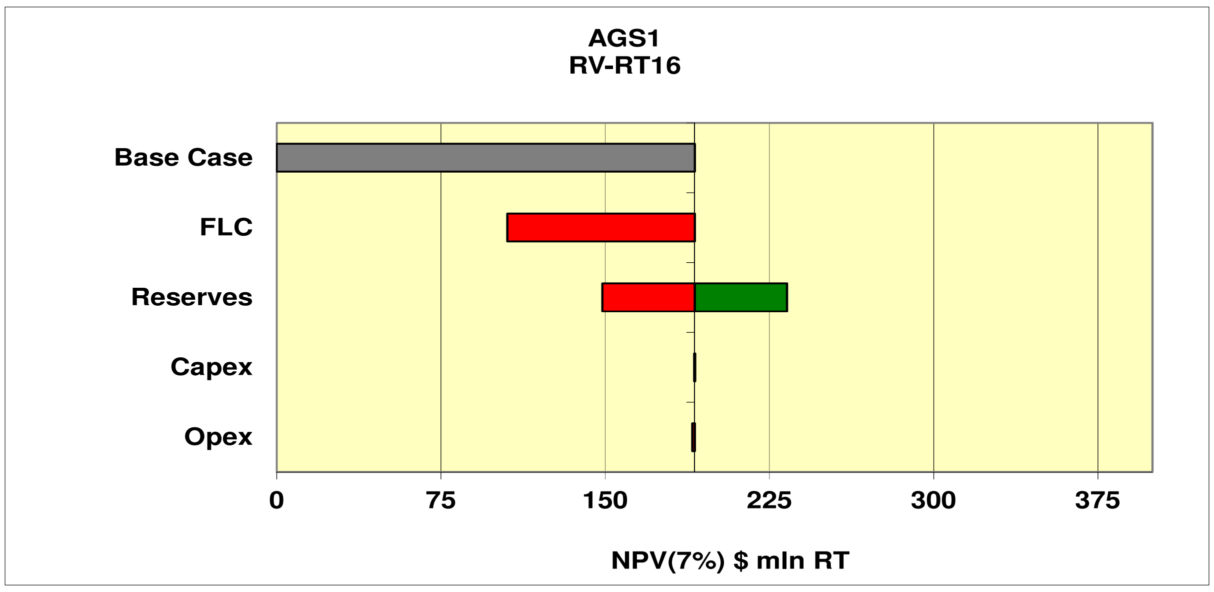
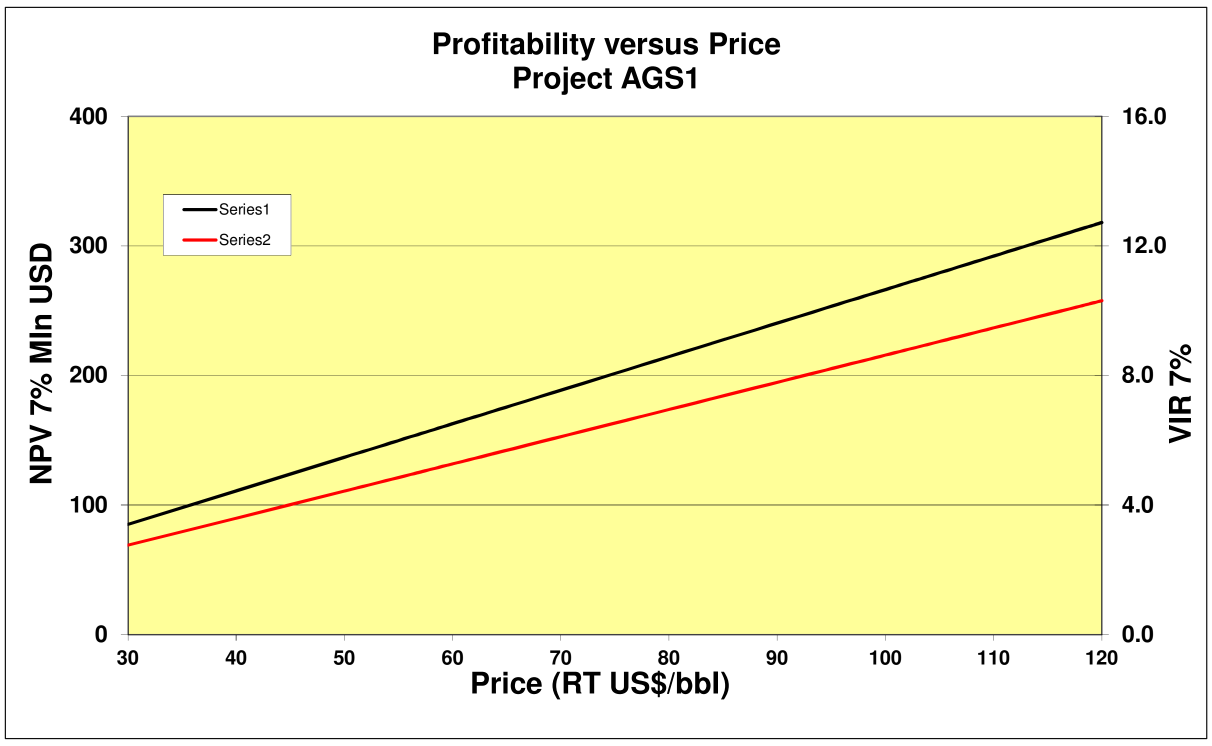


Chart 3 Tornado Chart AGS1





Economics Assumptions:

- Oil Short term PSVs of $42.5/bbl@MOD in 2016, $50/bbl@MOD in 2017, $60/bbl@MOD in 2018, $60/bbl@MOD in 2019, with applicable offset applied. RV-RT16 price used from 2020 onwards
- 2016 Nigerian Gas Master Plan (NGMP) gas price profile RV-RT2016 was applied
- Gas taxed under CITA with Associated Gas Framework Agreement (AGFA) incentive.
- Flare Fee of 10 Naira/mscf non-tax deductible.
- Gas Heating Value (GHV) of 1000 Btu/scf for gas supply to domestic market.
- Education Tax of 2% assessable profit
- NDDC levy 3% of total expenditure
- Abandonment cost of 10% of RT CAPEX

Section 3: Risks, Opportunities, and Alternatives

Risks

Most of the principal risks associated with the previous GIP have been mitigated substantially, however, the following risks still apply.

- Delay in completion of project due to worsening security situation in Niger Delta: recent increase in militancy and destruction of Oil & Gas facilities has resulted in damage to the ELPS, the gas sales route from Otumara with knock-on effect to OSD promise. OEM commissioning personnel may also not be able to access site as a result, and contractors may need to be demobilized to avoid huge stanby costs. Full compliance with the corporate security plans for operating in the field and all other mitigating actions will be complied with to mitigate overall impact. The P90 Start up date recognized this risk.
- Further escalation in costs due to contractors' NPT and cost of remaining scopes: additional costs that may be occasioned by the security situation mentioned above will be avoided through careful and deliberate decisions on resources to keep at construction sites.The remaining scopes of electrification of Saghara Flowstation and host communities also require effective control of scope, schedule and costs to ensure project is successfully closed out within this GIP approval.

Opportunities

The following opportunities were realized;

- Nigerian Content: Due to the involvement of local Contractors; Local fabrication capacity has been bolstered.
- Employment: Hundreds of local personnel were employed by the project.
- Social Performance: The electricity interdependency project has been assigned to community contractors for execution, this will further enhance the Local Content achievements of the Project and serve as further mitigation for NPT risks.

Alternatives considered

No feasible alternative is considered at this stage of project development.

Contingencies

Cost: P50 contingency percentage of between 14 - 18% was used for this project; this was derived using the probabilistic cost risk analysis.

Section 4: Corporate structure, and governance

This project fits within the existing SPDC JV corporate structure and governance, with SPDC as the operator.

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

This proposal complies with Group Business Principles, policies, and standards. Full functional support covering SCD is provided for in the full project scope. Additionally, there was focus on Nigerian Content Development (NCD) as already indicated above. Functional support for this proposal is provided by the Finance, Supply Chain Management, Legal, Treasury and Tax functions. Key Lessons Learned from this project have been shared with other project in the portfolio namely:

- **Contract costs overrun**: Level-3 cost estimate developed with actual EPC cost for projects should form the basis for GIP approval.
- **Freezing the Scope before EPC Award**: FEED was not 100% complete prior to award of EPC contracts, significant changes occurred in equipment sizes, foundations and piling.
- **High Non Productive Time (NPT) related charges**: Significant delay costs arising from protracted PGMOU/FTO negotiations due to communities demand being based on rates recently paid by another operator in the area. In future, PGMOU should be negotiated ahead of mobilising major contractors to site to mitigate contractor's standby charges.

Section 6: Project management, monitoring, and review

The Major Projects Team under PTP/O/ND is managing the project. The Project assurance plan is compliant with the ORS stipulations with project specific DRB, DE, and BOM in place. A Project Execution Review (PER) was conducted for Otumara AGS project in September 2013. A pre-start-up audit was conducted for Otumara AGS project in May 2015.

Section 7: Budget provision

This AG Solutions project budget has been approved by the JV Partners, as part of the Domestic Gas Projects. The projects have been fully resourced since inception till date. Funding for this project in 2016 and 2017 is captured in OP15 Firm Plan.

Section 8: 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 for project's full scope on Shell Group Financials is as indicated in the table below:

US$ mln	2016	2017	2018	2019	2020	Post 2020
Total Commitment	22.3	10.6	2.1	0.0	0.0	0.0
SCD OPEX	2.9	0.0	0.0	0.0	0.0	0.0
Pre-FID	0.0	0.0	0.0	0.0	0.0	0.0
Cash Flow						
Capital expenditure	19.4	10.6	2.1	0.0	0.0	0.0
Cash Flow from Operations	44.8	65.6	76.2	95.1	127.6	2941.5
Cash Surplus/(Deficit)*	25.4	55.0	74.1	95.1	127.6	2964.7
Profit and Loss						
NIBIAT +/-	50.3	63.8	72.0	92.8	127.9	2935.5

Section 9: Disclosure

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

Section 10: Financing

This investment is being financed with JV funding and shell share of the expenditure will be met by SPDC's own cash flow and/or the existing shareholder loan facility.

Section 11: Taxation

There are no unusual taxation features except for the risk of the government abolishing Associated Gas Frame Agreement (AGFA).
There is the possibility that the project will be affected by Petroleum Industry Bill (PIB), in which case AGFA will not be applicable. The effect of this risk has been evaluated in the economics.

Section 12: Key Parameters

This GIP seeks approval for a further investment of US$69.5mln (Shell share) 90/10 MOD, after discounting cost of divested (assets) scopes in the original GIP (i.e US$39.6m out of US$222.1m; net original GIP US$182.5m). With this proposal, total investment becomes US$252.1m (Shell share) 90/10, MOD of which US$223.5mln is sunk cost.. The additional amount requested is 38.1% of the previously approved GIP.

Section 13: Signatures
This Proposal is submitted for approval

Supported by:

……………………………………….

Chris Streng - FUP
Date …./…./…..

For Organisational approval:

……………………………………….

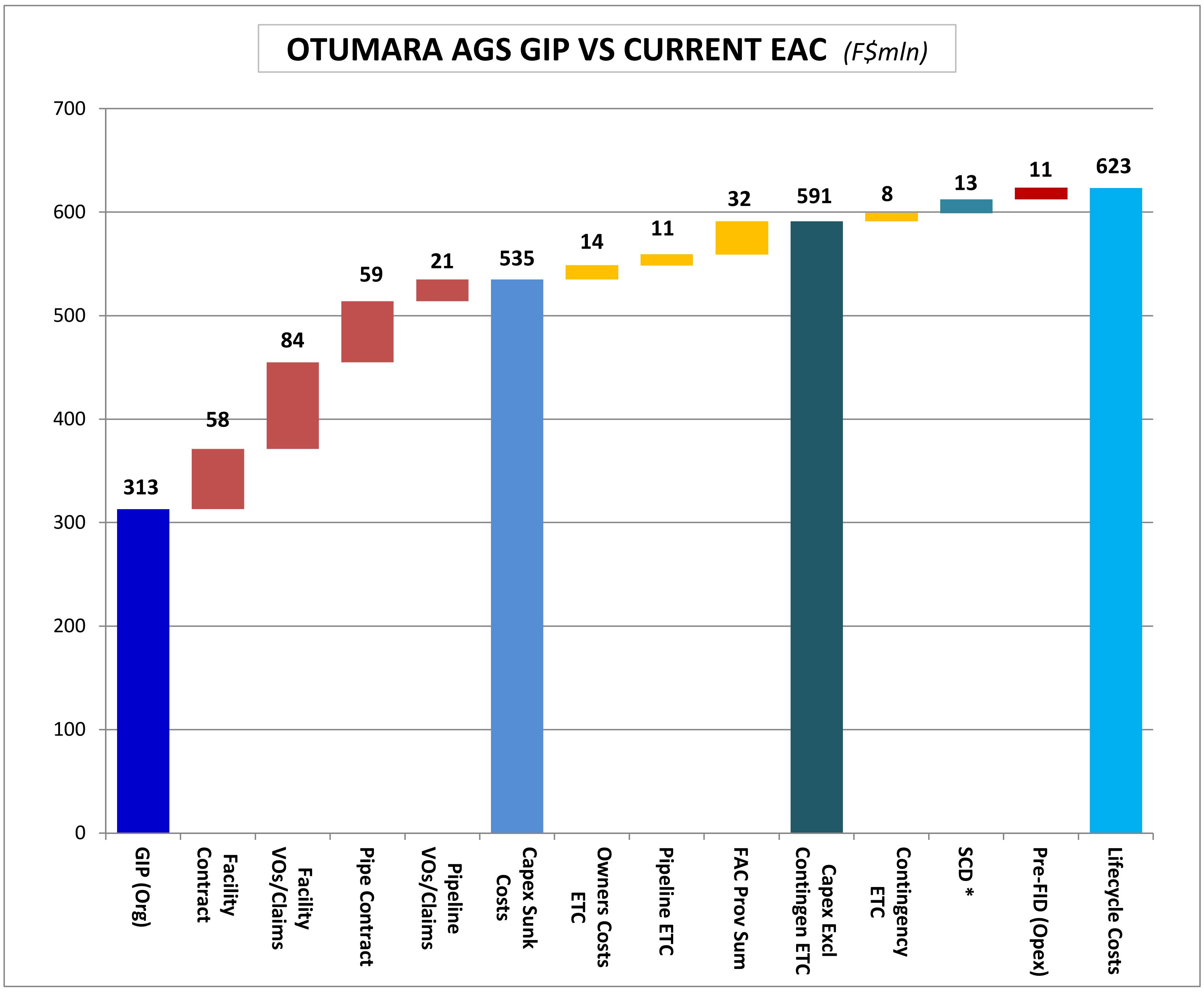
Andrew Brown - ECAB

Date …./…./….

Initiator: ________________

Toyin Olagunju - PTP/O/N
Date …/…./….

Appendix 1 – Otumara AGS Cost Growth - (100% USD $mln);



** The SCD of $13m is made of $4m spend plus $9m of ETC , however $11m was approved under the original GIP.*

Appendix 2 – Adibawa AGS Cost Growth – (100% USD $mln)