PetroSA

Presentation on the 2014/2015 Impairment Report

14 March 2017

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Purpose

- To brief the PCE on the report relating to the investigation into Petrosa's R14.5 billion impairment in the 2014/15 financial year pertaining to Project Ikhwezi.
- Brief the PCE on the findings of the forensic investigation
- Present the outcome of the technical investigations of Project Ikhwezi.
- Feedback on the action taken
- Share key recommendations and lessons learned

Background and Context

Financial Report 2014/15

In the 2014/15 FY, PetroSA posted a Gross Revenue of R18 Billion which was a 15% decline from the previous year's R21.2 Billion

- An EBITDA of R2.2 billion compared to R3.2 billion the previous year.
- Posted an operating loss before impairment of R102 million (2014: R2.2 billion operating profit).
- A net operating loss of R14.6 billion after booking an impairment charge of R14.5 billion in the year, of which R11.7 billion is allocated to the company against local onshore and offshore production assets based on the hydrocarbon reserves outlook that was considerably revised downwards
- Overall, 80% of the impairment charge at company level is attributed to lower than expected hydrocarbon reserves and 20% to the weak crude oil price.

Board Commissioned Forensic Investigation

- At the time of the Board Approval of the Financial Report of the 2014/15 Financial Year, the Board instituted a forensic investigation into the financial performance of the company for the year then under review
- Sizwe Ntsaluba Gobodo was appointed to conduct an independent investigation to determine:
- a)The principal reasons for PetroSA's non-performance for the financial year ended 31 March 2015.
- b)The extent to which the executives failed to discharge their duties and obligations to the company, considered in light of the corporate scorecard, the contracted performance objectives and the impairment/loss suffered by PetroSA;
- c)The extent, if any, to which the executives may be held accountable for the poor performance of the company;
- d)Whether Management could have acted differently in the performance of their roles in order to avoid the reported poor performance of the company; and
- e)Whether there have been any breaches of the PFMA resulting from the conduct of the executives, inter alia, relating to possible fruitless, wasteful, irregular and/or unauthorized expenditure having been incurred by the company.

Investigation Findings

- SNG concluded that overall there were events that contributed to the financial non-performance of Project Ikhwezi which include the following:
- a) Various changes in contractors (mainly topside and subsea). Change in topside contractor resulted in re-performance of the FEED process and therefore additional costs for PetroSA;
- b) In addition, there were also delays in delivery of equipment which contributed to further delays in the project. There was also the issue of the ENSCO 5001 rig which had significant non-productive time of 49% and contributed to delays and the escalation of costs. This ultimately led to the incurring of termination costs of USD3 million upon PetroSA terminating the rig contract;
- c) Furthermore, PetroSA encountered tight gas, which resulted in extracted volumes falling from the projected 240bcf to between 30bcf and 35bcf.

SNG Findings on Project Ikhwezi

SNG identified the following irregularities in respect of Project Ikhwezi:

- Project risk management was inadequate. Given that management indicated that there were challenges in procurement, engineering design, scope and flexibility, rig contractor performance and budgetary constraints, this myriad of risks ought to have been addressed as part of a more rigorous risk assessment process.
- Overruns on three wells, totaling approximately USD160 million, were not categorically approved by the Board.
- Failing to raise matters of Project Ikhwezi's financial non-performance with the Board when management was privy to detailed discussions regarding Project Ikhwezi's finances and the project's shortcomings in that regard.
- Management signed a second amendment to the ENSCO rig contract. The second amendment had less favourable terms than the first amendment in spite of ENSCO's performance having been unsatisfactory in many aspects.

Further Findings on Ikhwezi and Subsequent Recommendations

e) The overruns which were not categorically approved by the Board and management's report to the Board that the drilling of a fourth well could be achieved within budget initially allocated and approved by the Board.

f) Management was not fully transparent with the Board on a number of issues. This was evidenced by the fact that several of the matters reported to the Board were merely for noting and not deliberation, via formal submissions requesting Board approval and resolution.

- In light of these irregularities, SNG recommended that PetroSA take action against the Group Chief Executive Officer, Group Chief Financial Officer and the Vice-President New Ventures Upstream. The specific recommendations in relation to each of the executives are outlined in the SNG report

Cliffe Dekker Hofmeyer Review of SNG Report

- Informed by the PetroSA's legal team, which concluded that the irregularities identified in the SNG report are, prima facie, of a very serious nature, the Board resolved to take the SNG investigation report on an Independent Legal Review in October 2015, conducted by Cliffe Dekker Hofmeyer Attorneys
- It was the legal team's view that to determine whether PetroSA can hold the 3 Execiives in their respective capacities, to a greater or lesser extent, accountable for all the irregularities identified by SNG arising from Project Ikhwezi in disciplinary proceedings is not straightforward.
- The legal team concluded that such an assessment required careful scrutiny and consideration in the context of areas of responsibility, authority, skills, experience, and ultimately whether the irregularities identified, could solely be attributed to them.
- Some of the irregularities can be attributed to them, in their respective capacities and roles, and others not
- The legal team advised the Board to be mindful that the investigation of Project Irene and Ikhwezi involved concepts and documentation of a highly technical nature and involved various role-players in Project Ikhwezi over a period of almost five years.

PetroSA

Final Outcome

- The Board's position with regard to the GCEO resulted in the parties reaching agreement on the termination of the GCEO's employment as the Group Chief Executive Officer with effect from 1 November 2015 on mutually acceptable and amicable terms.
- The settlement was as a result of the Board having considered a number of factors including, but not limited to, the fact that the GCEO's employment contract was due to end in February 2016 and having assessed the prospects of success based on the merits in an unfair labour practice dispute referred to the Bargaining Council by the GCEO relating to her alleged unfair suspension and having concluded that there was a high likelihood of losing the dispute. Hence, the Board concluded that the risk of losing the dispute justified the conclusion of a settlement agreement between the GCEO and PetroSA, The terms of the agreement are confidential.
- PetroSA reached agreement with the GCFO, on the lifting of her suspension and the termination of her employment as the GCFO with effect from 30 November 2015 on mutually acceptable and amicable terms. The terms of the agreement are confidential.
- a settlement agreement was concluded with one of the executives of PetroSA, VP: NVU regarding the cessation of his leave of absence and his resumption of duties. In accordance with the agreement, PetroSA undertook not to pursue any disciplinary action against the Acting VP: NVU relating to the findings of the SNG Report.

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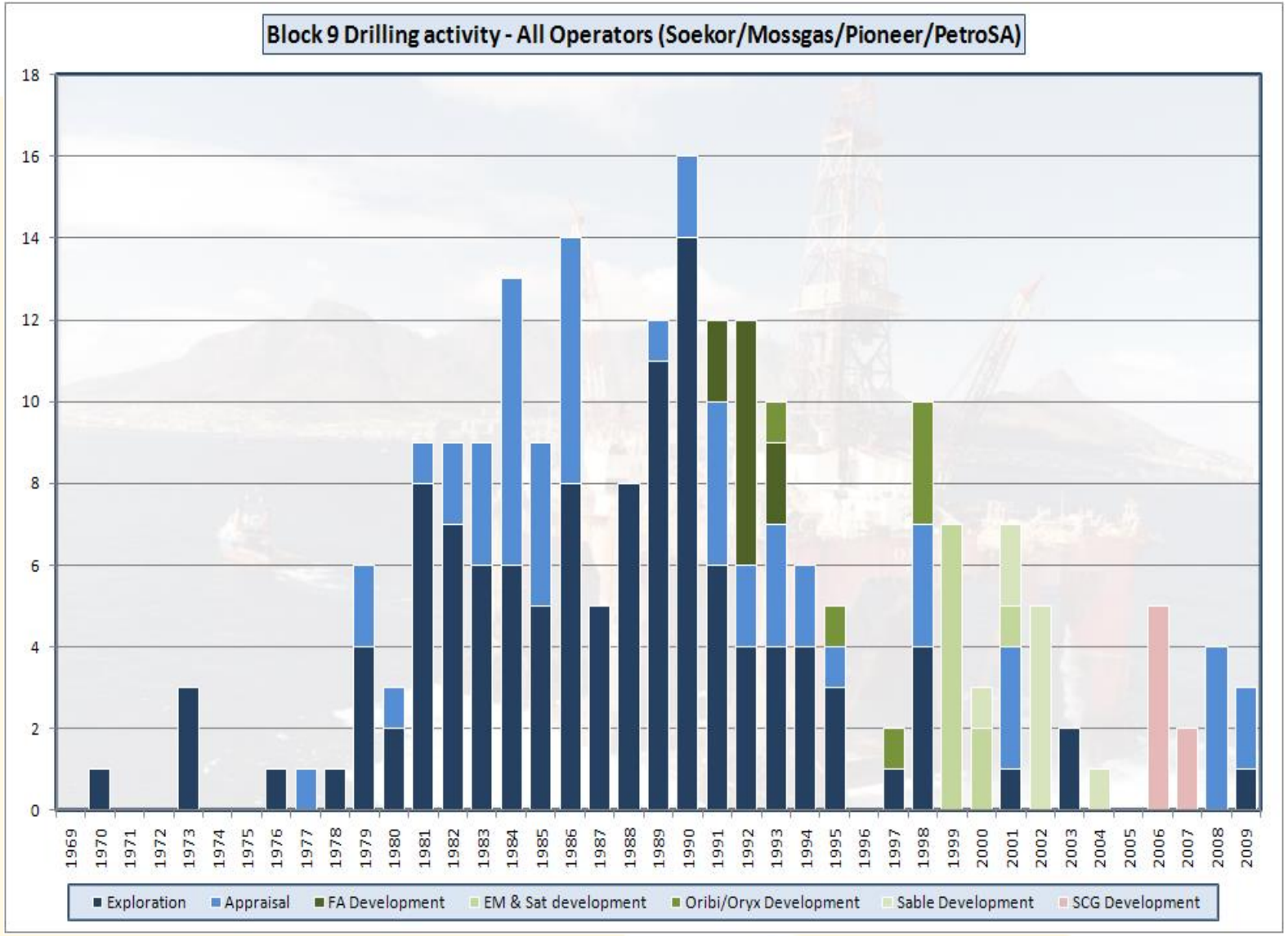
Rational for Ikhwezi Project

- Gas sourced from Block 9 in South Africa has sustained the Mossel Bay gas to liquid (GTL) operation in South Africa since the early 1990s
- In 2007, the F-O discovery, a field in 160 m of water was chosen as a candidate to tie-back to the F-A platform to sustain the existing GTL refinery operation
- At the time, PetroSA was also focused on a liquefied natural gas (LNG) floating storage regasification unit (FSRU) project to meet GTL operations. These two competing development schemes, an F-O field development project or an FSRU project.
- In February 2010, the LNG FSRU Project was deemed to be uneconomic so development of the F-O field was accelerated as the preferred alternative to supply the GTL facility
- It was estimated in 2010 that the available gas would be depleted by 2013, thus implying closure of the GTL Refinery which is the heart of the Mossel Bay economy and employing over 1800 people at the time
- The Board too a Finacial Investment Decision in March of 2011 expecting delivery of first gas in the first quarter of 2013

Upstream Activity from PetroSA Balance Sheet



Upstream activities by nature carry ***significant risk due to the resource uncertainty specifically*** during the exploration and appraisal stages. Despite these realities, PetroSA did embarked on a number of successful feedstock interventions to sustain production at the GTL refinery The development costs of these interventions were funded by PetroSA (with the exception of ***South Coast Gas***, jointly funded by PetroSA and Pioneer Natural Resources)

However the ***Ikhwezi project*** to find additional gas resources was not a great success and significantly eroded the companies cash balances with less than expected gas being realised with **impairments of about 14bn**

Project Ikhwezi Timeline

PetroSA

2010

Faced with depleting feedstock challenges and operations running at a 2x1 PetroSA under the leadership of their board embarks on a number of studies to find the best solution to sustain the GTL Refinery. A number of options are considered including using LNG as feedstock. The final decision to drill ***5 Wells*** in the Block 9 area to find additional gas albeit the inherent risk is chosen as best option. The project is to be funded from own Balance Sheet. Success of the project would also fund future Downstream acquisitions.

2011

The last scale and risky project is initiated and the organisation goes about the procurement process after the firming up of potential prospects. Various governance structures are set up with a view of improving the project delivery process and ensure that first gas is landed in ***December 2013.***

2012

A number of challenges begin to emerge with regards to project execution due to the complexity of such a large scale project. Many resources are deployed to improve project delivery. Frequent leadership changes at the Board and Executive level compound the issues of accountability and project ownership.

2013

More resources (both financial and human capital) are further deployed. The Board initiates a number of project reviews to better comprehend the delays and emerging cost overruns. Key milestones are being missed and finding gas is proving a major challenge. The CEF Board also intervenes on a number of levels.

2014

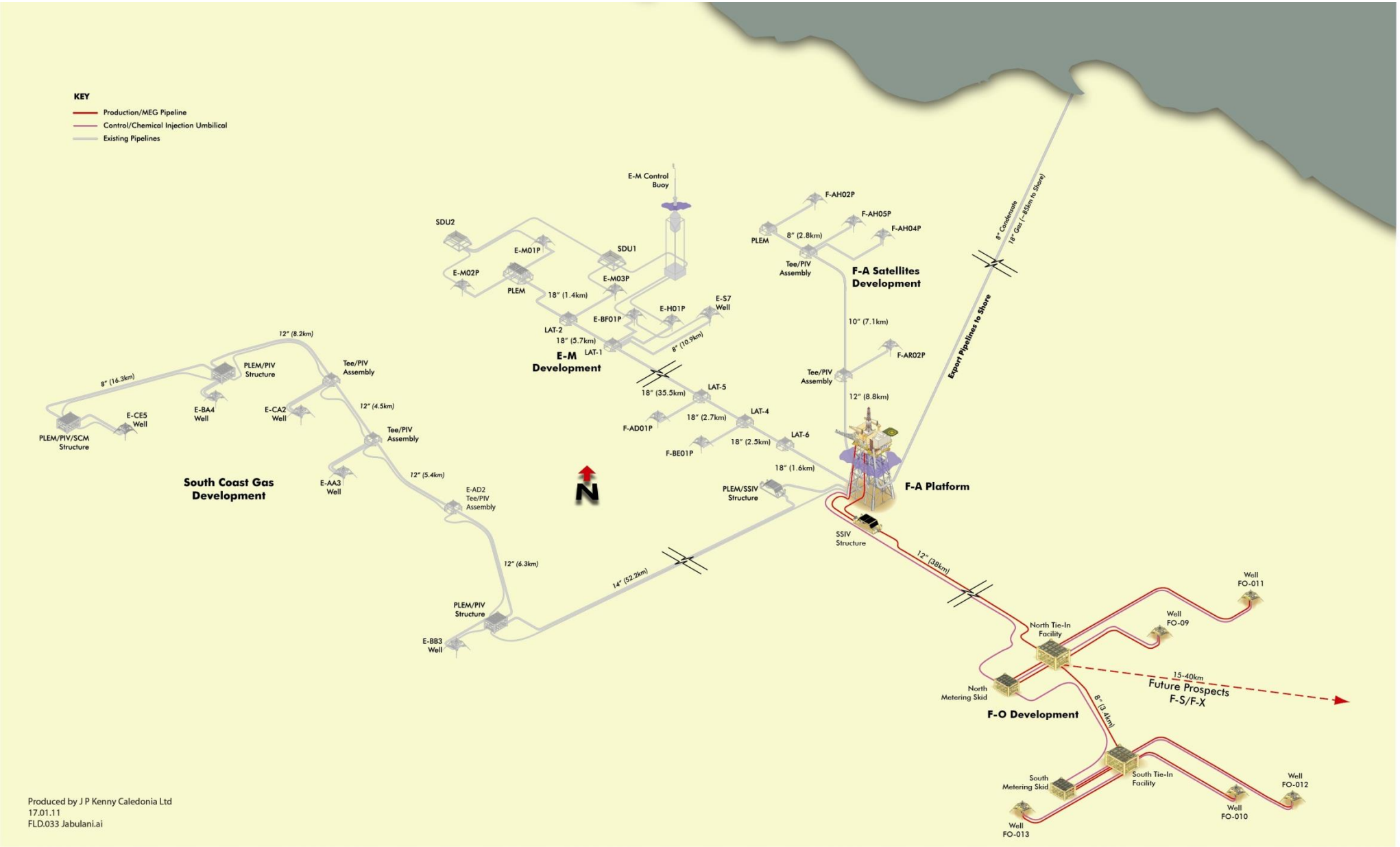
More project delays are experienced. Further technical and forensic reviews are initiated as results are not forth coming. First gas after numerous delays is only delivered in December 2014.

2015

With the underperformance and impairment loss, a number of executives are suspended..

Scope of Project Ikhwezi

F O Development Project- Overall Field Development Project



New Development area

- Tight Rock
- Unknown geology
- Rough seas
- Deep drilling
- Undeveloped sub sea infrastructure

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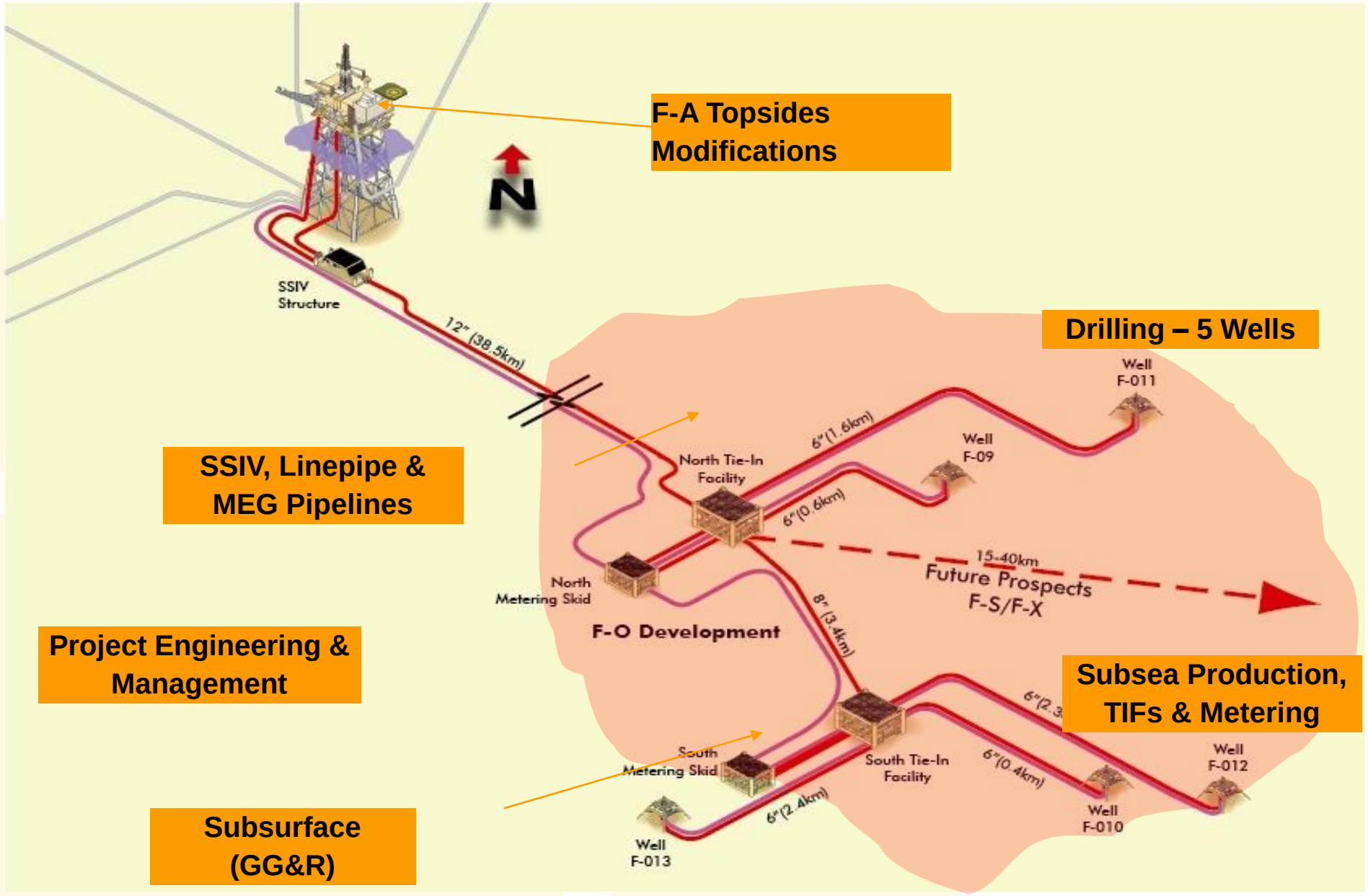
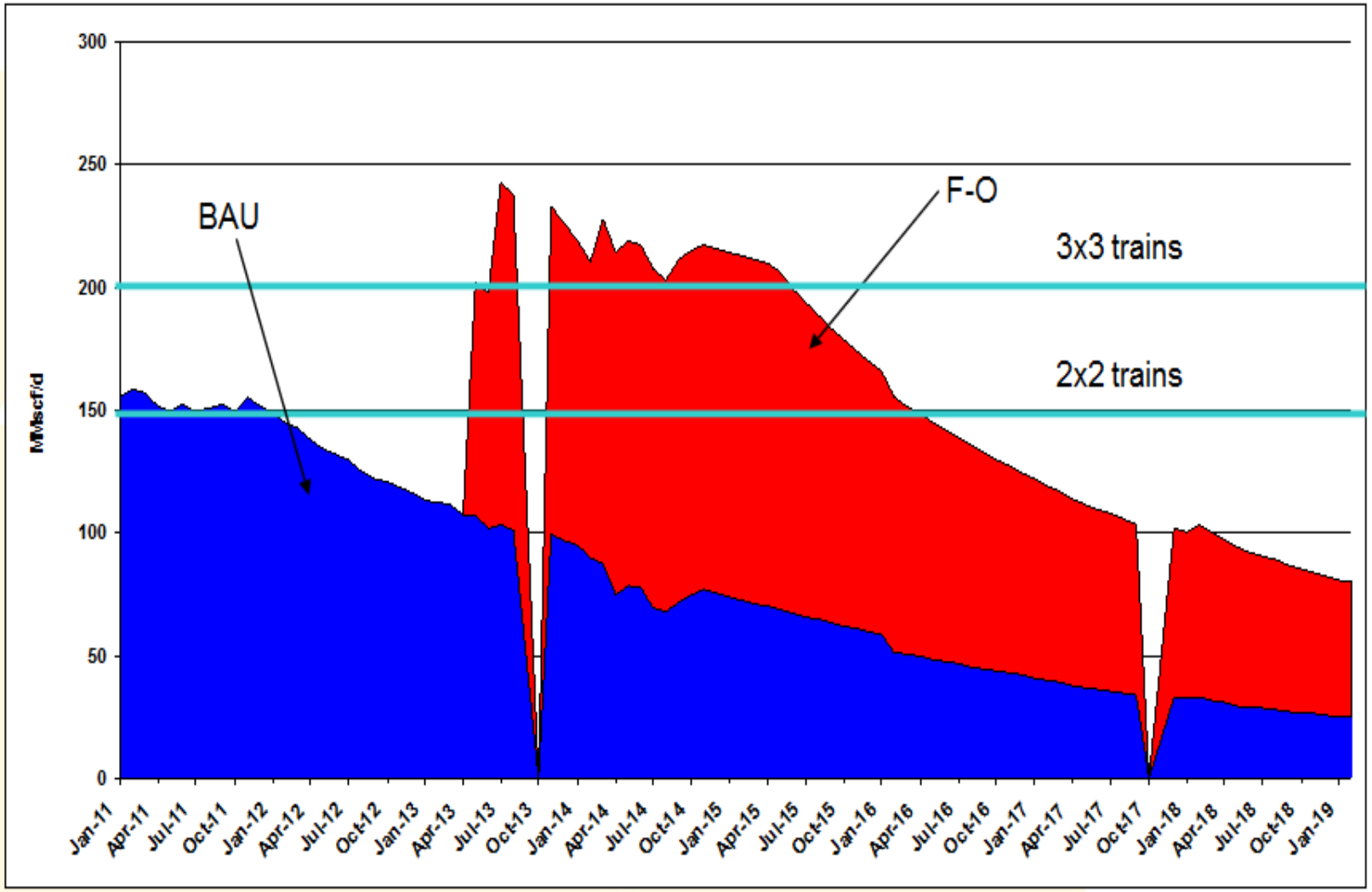

F-A Topsides Modifications
N
SSIV Structure
12" (38.5km)
Drilling – 5 Wells
Well F-011
6" (1.6km)
Well F-09
North Tie-In Facility
6" (0.6km)
SSIV, Linepipe & MEG Pipelines
North Metering Skid
15-40km
Future Prospects F-S/F-X
F-O Development
8" (3.4km)
Project Engineering & Management
Subsea Production, TIFs & Metering
6" (2.3
South Metering Skid
South Tie-In Facility
6" (0.4km)
Well F-012
Well F-010
6" (2.4km)
Well F-013
Subsurface (GG&R)

Production forecast at the time of project initiation



- Expected ***volumes*** 242Bcf
- Without Ikhwezi the gas would have come to the end of commercial operation by the end of 2013
- First Gas from Project Ikhwezi was expected to flow in 2013 and this would have taken the GTL Refinery back to a 3X3 operation
- Gas would have run out in Q1 2019

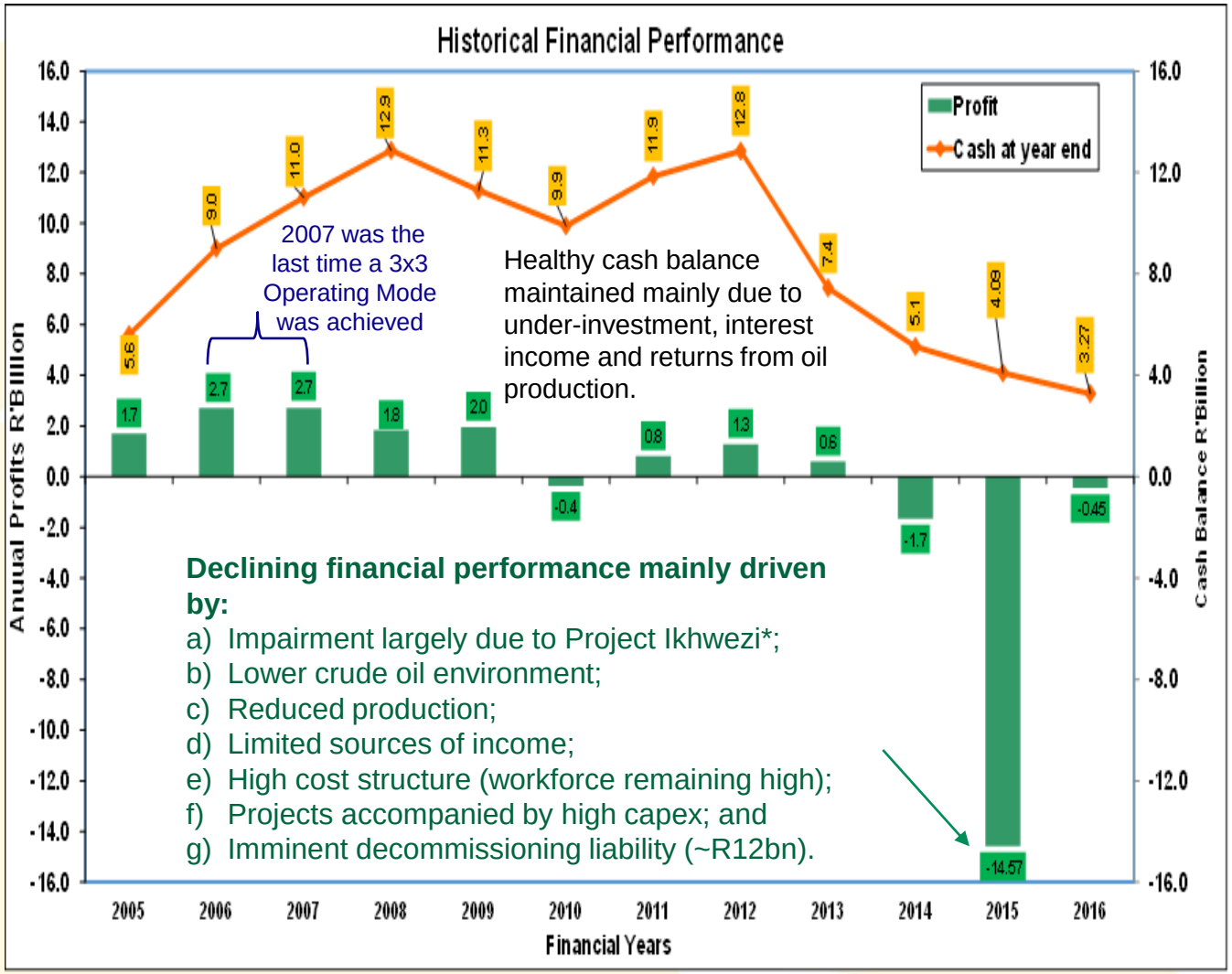
FINANCIAL COST REPORT ON PROJECT IKHWEZI (FO DEVELOPMENT) MARCH 2010 TO MARCH 2016

Object Displayed in		A Original Budget USD	B Budget after transfers USD	C Actual @ Ave month rates USD	D Forecast Assuming only partial insurance claim USD	E Forecast Assuming full insurance claim USD
6* WBS N.U.10201.2	Project Planning (FEED)	$18,850,000	$18,850,000	$15,183,576	$15,183,576	$15,183,576
	Contingency	$212,620,000	$104,747,268	$0	$0	$0
6* WBS N.U.10201.3	Project Implementation (FID)	$1,063,309,730	$1,220,132,732	$1,188,633,754	$1,204,551,611	$1,192,393,061
4* WBS N.U.10201.3.2.01	Owner Project Management	$27,314,830	$0	$33,614,867	$33,614,867	$33,614,867
4* WBS N.U.10201.3.2.02	Drilling	$685,824,177	$0	$677,864,296	$677,864,296	$677,864,296
4* WBS N.U.10201.3.2.03	Sub Sea Facilities	$319,679,662	$0	$403,518,751	$419,436,609	$407,278,059
4* WBS N.U.10201.3.2.04	Topsides Modificatio	$20,064,456	$0	$66,350,127	$66,350,127	$66,350,127
*** WBS N.U.10201.3.2.08	Insurance	$10,050,012	$0	$7,285,713	$7,285,713	$7,285,713
TOTAL WELL COST		**$1,294,779,730**	**$1,343,730,000**	**$1,203,817,330**	**$1,219,735,188**	**$1,207,576,638**

Project Ikhwezi Key Contracts

	Vendor	Service Provided	Contract Value	Actual Value	Currency
Drilling	Ensco	Drill Rig	277,967,500.00	192,865,207.65	USD
	Transocean	Drill Rig	129,000,000.00	119,995,088.84	USD
	Baker Hughes	Drilling Services	147,570,030.11	113,130,485.17	USD
Subsea	SBM	Subsea installation	90,595,425.00	54,436,857.80	USD
	Allseas	Subsea Pipeline installation	56,660,142.00	53,397,211.85	EUR
	Harkand	Subsea installation	42,000,000.00	77,800,000.00	USD
	Wellstream	Subsea Pipeline manufacture	20,750,000.00	19,884,640.05	GBP
	Jumbo	Subsea installation	17,060,000.00	16,198,521.00	EUR
Topsides	Petrofac	Engineering and Design	5,045,372.50	12,644,189.84	GBP
	Kentz	Topsides Construction	38,885,169.00	146,884,393.18	ZAR

Profitability and Cash Balances

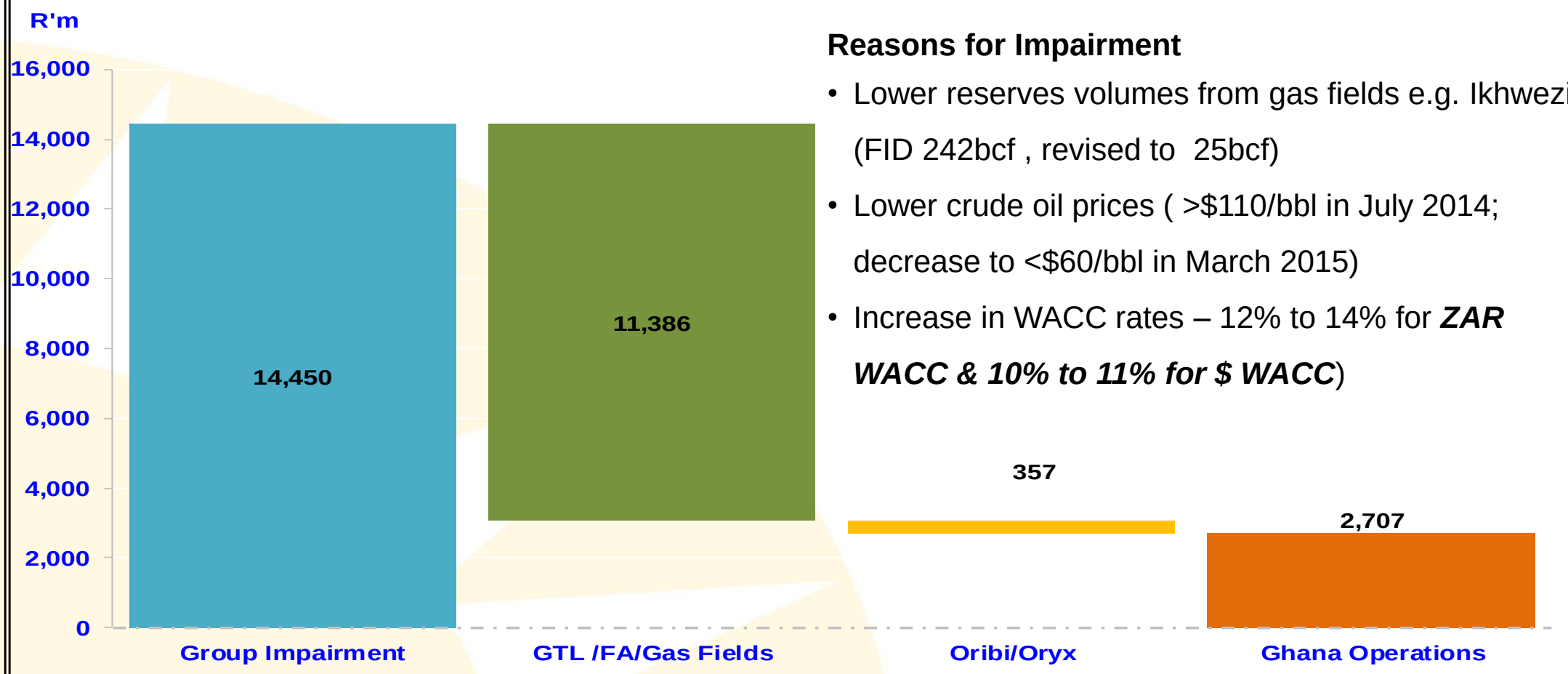


In line with depleting feedstock, PetroSA's profitability has also been declining. In the ***mid 2000's PetroSA had a cash balance in excess of R10bn,*** however various strategic decisions have ***culminated in poor performances*** over the years and have resulted in a currently ***stressed balance sheet***

Diagram presents PetroSA's profitability and cash balance curves since 2005. This poor performance was driven by a number of elements as indicated in the diagram.

The effect of Project Ikhwezi has had major ramifications on the sustainability of PetroSA – the project was expected ***to yield 242Bcf*** of gas through 5 wells at a budgeted cost of $1.344 billion, but only yielded ~***25Bcf*** through 3 wells. The failure of the project to realize the initially estimated reserves resulted in a net loss of R14,5 billion during the 2014/15 FY and the risk of closure of the refinery by March 2017.

PetroSA Group Impairment - 2015



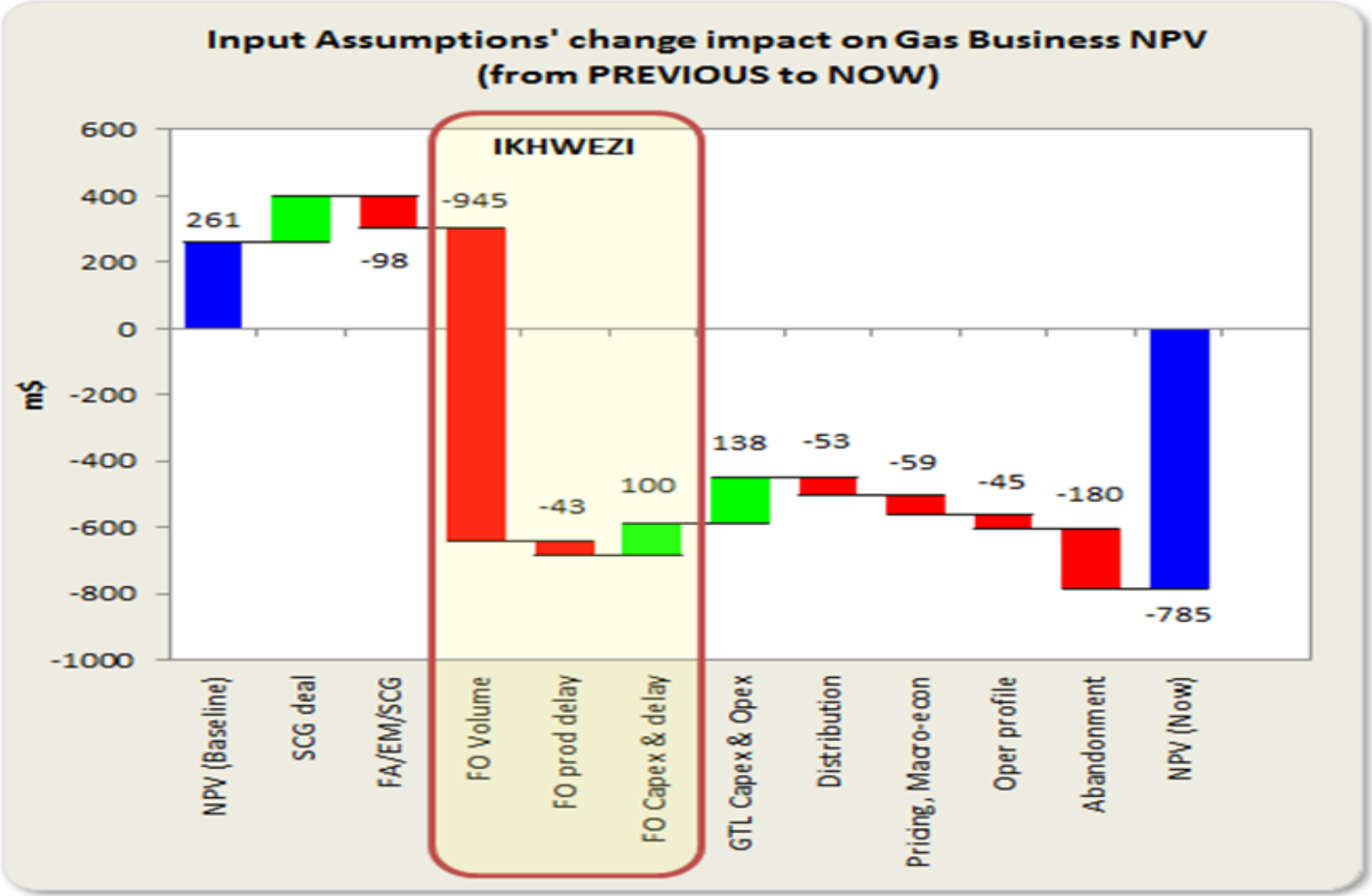
Reasons for Impairment

- Lower reserves volumes from gas fields e.g. Ikhwezi (FID 242bcf , revised to 25bcf)
- Lower crude oil prices (>$110/bbl in July 2014; decrease to <$60/bbl in March 2015)
- Increase in WACC rates – 12% to 14% for ***ZAR WACC & 10% to 11% for $ WACC***)

80% of the GTL impairment charge was due to volumes not realised and may not be reversible

Findings of the Technical Investigations

Main Cause of Project Failure



Expected Volumes: 242
Realised Volumes: 25

- ***Produce only from 3 out of 5 Wells***

Volumes not being realised:

1. Complexity in the extraction methodology
2. Project Management

Complexity of Extraction Methodology

- ***July 2010 FID request:***
  - Technical Package based ***3 Multilateral Drilling Methodology***

- **March 2011 FID request:**
  - Technical Package based ***5 Long Horizontal Drilling Methodology***
    - No appraisal/testing (Long horizontal type) done on the field- At least one well should have been used a test pilot.
    - Complex Rock geology (compartmentalised)
    - Lack of understanding of the completions needed to access the gas in the reservoir
  - Technical Extraction methodology not properly risk mitigated

Weak Project Management Governance

- Project Execution Model not adhered due to the urgent need for gas to GTL refinery
- Weak project governance during project development except the FID gate
- Lack of proper Risk Mitigation was implemented (considering that we had mixed project development phases)
- The project was not resourced appropriately
- No walk away trigger points were in place: to ensure it would be clear should a need to stop the project arise (F-O12 case in point).
- Lack of continuity due to high turn over of key resources resulting in a lack of project ownership

Scheduling Challenges

The project suffered a first gas delay of 21 months (Dec 2014 instead of March 2013)

- The schedule was very tight (30% faster than industry average - IPA)
- The Topsides scope was delayed due to a contractor change (KBR to Petrofac)
- Drilling Rig 12 months delay, PetroSA missed an opportunity to contract the rig ahead of Maersk

Cost Management Analysis

Approved Budget - USD1344 million

- Actual Spend– USD 1220 million
- Out of 5 wells, 4 drilled and producing from 3 wells
  - Not following well plan – subsea infrastructure put ahead of drilling
  - Delay in drilling activities
    - Installation of subsea infrastructure – paying standing time on the vessel
    - Exhausted installation window – 2 new vessels hire

Summary of Interventions

Forensic and Technical Investigations

Forensic Investigations	Governance & Risk Investigation	Technical Investigation
4	3	2

1. ***Key recommendations from the Technical Investigation executed such as the EPMO***
2. ***Tightening of internal controls***
3. ***Cancellation of a number of contracts***
4. ***Parted with a number of key resources***

Lessons Learnt & Way Foward

- Perform proper appraisal before any development is done to properly de-risk the reservoir
- Projects should not be fast tracked because this does not yield the intended result. Rather do front end loading properly
- Projected Management Framework strengthened with the right gates and approvals
- Change Management to be effective and must be accompanied by impact on schedules, costs etc.
- The contracting strategy to be changed to a EPCM strategy and reduce the number of contracts.
- Project Management culture in the organisation needs to be improved and implementation of the gated framework
- Implementation of Business Continuity Framework and knowledge management part of Risk Mitigation strategies
- Hand Over Assurance at Board and Executive level to ensure continuity
- Group project governance structures (PMAC)
- Partnership strategy approach for future investment decisions and ensuring that we de risk the organisation and cushion our balance sheet

Conclusions

Based on the findings of this Ikhwezi Close out Report, the following can be concluded:

- The Ikhwezi Project's main failure occurred as a result of low gas volumes compared to what was predicted at FID. This can be attributed to a poor or lack of understanding of the reservoir risk involved in drilling the F-O field
- The project eroded value and the NPV was reduced from +USD261 million to –USD785 million
- At FID the gas volumes were estimated to be 242 Bscf and as at the date of this report, the forecast for gas reserves is 25 Bscf, an 70% reduction from the FID plan
- The Project was concluded with an impressive safety record and all the SHEQ performance targets were met
- First gas was achieved in December 2014 (21 months later than planned) due to the late arrival of the drilling rig and challenges that were encountered on the Topsides portion of the scope

END