Briefing to the Portfolio Committee on Minerals & Energy by the CEF Group on the Merger Transformation Project, Project Ikhwezi and all other Forensic Reports

22 February 2021

Group of Companies

CEF Group Renewal Strategy Approach

Contents

Cabinet has mandated the merger of three CEF subsidiaries

- As per the State of the Nation address on 13 February 2020, government has commenced its efforts to ***repurpose and rationalize state-owned*** enterprises to support growth and development in South Africa
- More recently, the South Africa's Economic Reconstruction
  and Recovery Plan was released establishing several
  objectives, including ***aggressive infrastructure investment and improving the capability of state-owned entities***

iGas — PetroSA — SFF

Under this mandate Cabinet on the 10th June 2020, approved the merger of 3 subsidiaries of the Central Energy Fund *to establish a*

South African National Petroleum Company

Given ***solvency & liquidity challenges*** at PetroSA as the biggest subsidiary and to avoid potential collapse of the CEF Group, immediate action is critical to ensure survival of CEF Group

The CEF Board was thus mandated to manage the process and ensure the establishment of the NPC

The project aims to merge PetroSA, SFF & iGas into a NewCo, establishing a National Energy Champion for SA

Key Milestones

Delayed: Deliverables on track with key outstanding approvals

Project Kick-off
15 September '20

Week 4: Baseline Established

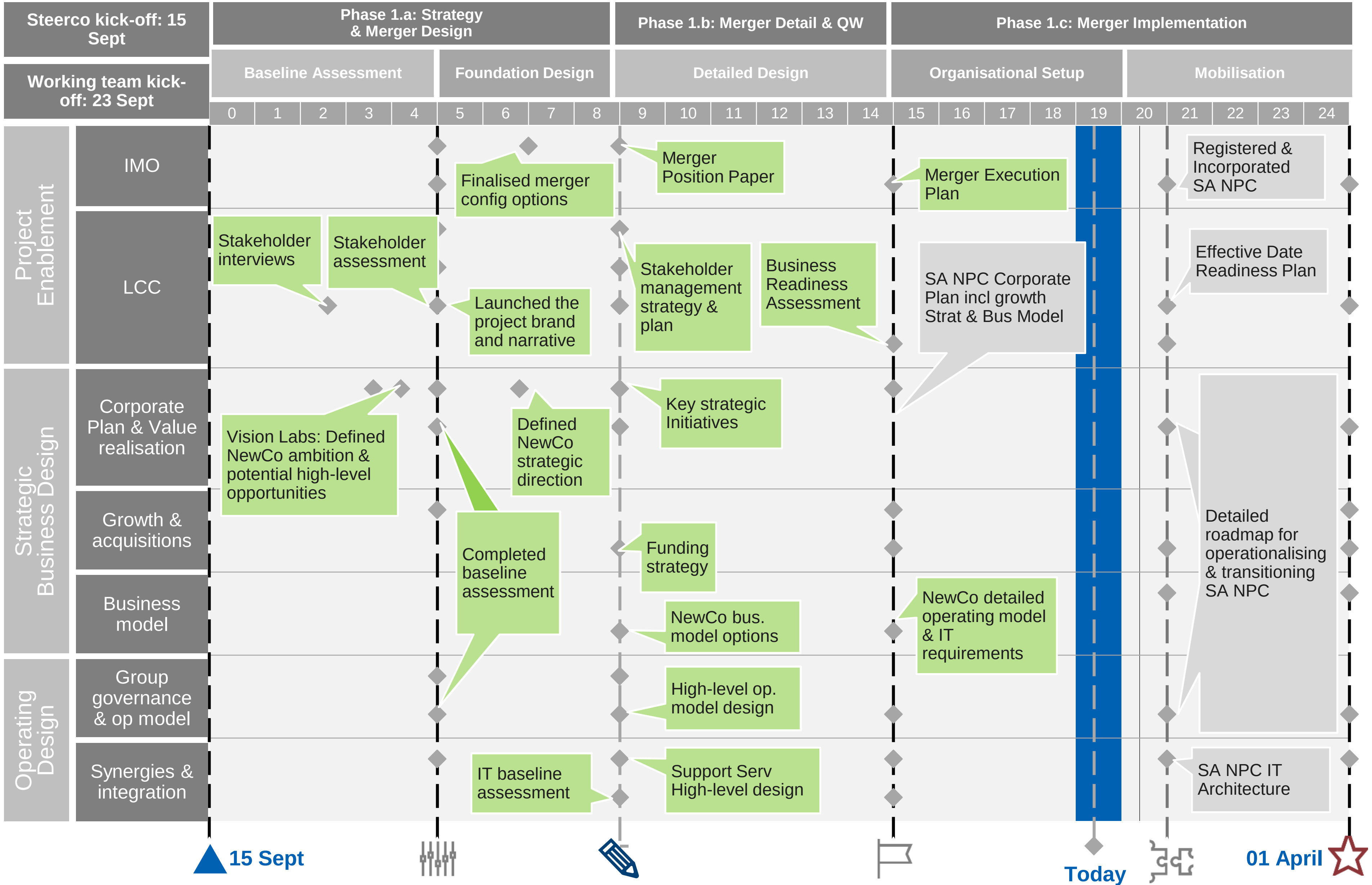
Week 8: NewCo foundation design

Week 14: NewCo final design

Week 20: NewCo set-up

Week 24: NewCo registered & operationalised 01 April '21

6 months



Achieved milestones

Upcoming milestones

Source: CEF Working Team

Over the past 5 months significant progress has been made to establish SANPC

Baseline Assessment

a. **Detailed assessment/ bench-marking** of **Operations, Finances, Governance & Op Model**

b. Identification of **key strength, weaknesses, opportunities & threats** for each entity & SA NPC

c. Identified **~R1.4 bn merger synergy potential** and optimisation levers

NewCo Strategy

a. Defined the **Vision, Mission & Strategic Objectives** of SA NPC

b. Detailed SANPC **strategic initiatives with up to R95 bn** in market potential

c. **Modelled** SANPC **pro-forma fin.** Statements & **funding schedule**

d. Drafted a comprehensive **Corporate Plan** for final approval

Merger Archetype

a. Comprehensive legal & commercial **assessment of potential merger archetypes**

b. Proposed **recommendation for L&A model**

c. Provided input on **preferred merger archetype** to DMRE for **submission to Cabinet**

Operating Model

a. Defined the high-level **Operating Model and Parenting Strategy**

b. Detailed the **organisational structure**, job descriptions, business **functions & processes**

c. Defined a **Transitionary Board & Executive structure**, secondment requirements & appointment process

Stakeholder Engagement

a. Socialization with Regulators and Governing bodies, including **NERSA, TNPA and DMRE Controllers.**

b. Developed an robust change management plan with regular internal engagements (Townhalls, Newsletters, Labour etc.) including the est. **an extensive change network**

Legal

a. **Conducted detailed due diligence** on Assets, Contracts, Liabilities, Rights, Licenses & governing legislation

b. Drafting SANPC **legal agreements**

c. Completed all SANPC **governance documentation for Board approval**

d. **PFMA s51 & 54** application for incorporation as a SoE

Source: CEF Working Team

Project Risks

The delay in merger archetype approval by Cabinet poses a significant risk to operationalising the SA NPC by 01 April 2021

	EWM	Status
1	**Cabinet approval of the preferred merger archetype**	– **Delayed** – First submission prepared 10 November 2020 – Revised input for Cabinet submitted on 29 Jan – Final Cabinet memo signed on 22 Feb to follow formal process
2	**PFMA Sec 51(1)(g) & 54 approvals for incorporation**	– **Delayed** – Dependent on Cabinet approval – Engagement with Treasury for necessary preparations delayed due to finalisation of budget – Application drafted to be submitted to DMRE
3	**CIPC Registration & Incorporation**	– **Delayed** – Dependent on Cabinet approval – Outstanding documentation for NewCo registration

Delayed approval will prevent…

…execution of operationalization activities:

- Application to DMRE & Treasury for incorporation as SoE under the PFMA
- Registration of the company
- Appointment of a transitionary board and exec committee
- Signing of legal agreements
- Engagement of 3rd parties incl. financiers, regulators etc.

However, the consortium will continue focus on...

…finalization of key project deliverables:

- Detailed business readiness plan
- Change and communication
- Integration management
- Legal agreements

We continue to close project deliverables as per the project plan, however execution of critical operationalisation actions is highly dependant on the Cabinet Approval

Next steps

In the coming weeks the project team will focus on 5 immediate next steps

1. Obtain necessary governance approvals for incorporation & registration
2. Finalize and approve SANPC corporate plan
3. Operationalize transitionary board and executive committee
4. Operationalize transitionary business functions (support focussed)
5. Finalise and enter legal agreements to Lease & assign relevant aspects of legacy businesses

CEF Group Forensic Report

Forensic Update Report- CEF investigations at PetroSA

Problem Statement	Period: 2019 to Date
Serious Allegations of mismanagement were brought to the attention of the PetroSA Board in relation to HR Function, Procurement & Contracts, Feed Stock Processes & Shutdown Processes	

Purpose and scope of the Forensic Investigations

The investigation focused on:

- The process of voluntary severance packages, any contravention on the appointment of related VSP.
- Procurement and contract which focus on evergreen contracts, compliance to PFMA,PPPFA, constitution B-BBEE and foreign transactions.
- Feedstock procurement process to verify the accuracy of the pricing methodologies and other key requirements for the competitiveness of the sourcing process.
- Reasons for the extended shutdown of the refinery.

Key Findings & Impact	Consequence Management Process
The report is at final stages and its due on March 2021	Consequence management will depend on the outcome of the report
Key Outcomes	**Law Enforcement Agencies Consulted**
The investigation is in progress. If required, law enforcement agencies will be engaged	

CEF (SOC) Ltd

Forensic Update Report – CEF

Problem Statement	Period: 2020 – to Date
Forensic investigation relates to misstatements and impairments in the annual financial misstatements, insubordination, alleged money laundering and failure to implement Solar Water Heater project.	

Purpose and scope of the Forensic Investigations

The forensic investigation is focused on:

- The alleged delay on the implementation of the National Solar Water Heater(NSWH) Project
- Failure to reinstate officials in acting positions to their substantive positions
- Failure to establish the Board Procurement and Finance Sub-Committee
- The alleged insubordination
- Payments effected on behalf of PASA by CEF Treasury into fraudulent offshore account.

Key Findings & Impact	Consequence Management Process
The investigation process is underway	Consequence management will depend on the outcome of the report
Key Outcomes	**Law Enforcement Agencies Consulted**
The investigation process is underway	

Forensic Update Report -SFF Association

Problem Statement	Period:
Strategic Crude Oil of 10 million barrels was unlawfully sold to a number of Trading companies without the proper authorization of the SFF and CEF Boards the then Minister of Energy and concurrence of National Treasury in terms of section 54 of the PFMA, Contravention of the Constitution and the Companies Act.	
Purpose and scope of the Forensic Investigations	
• Contract validation • Role of key players including management • Financial trail • Email correspondence	
Key Findings & Impact	**Consequence Management Process**
• Report currently with the Hawks	• The lawyers are looking into the consequence management process
Key Outcomes	**Law Enforcement Agencies Consulted**
• Hawks are handling the criminal case which is at a delicate stage • On the 20th of November 2020 the court agreed to reverse the crude oil sale and SFF got back the ownership of the crude oil however an adverse finding was made against CEF / SFF for the payment of hedging costs and legal costs in respect of two Traders. An appeal has been duly lodged with High Court in this regard.	

Forensic Update Report- SFF Association-Sale of Strategic Stock

Problem Statement	Period:
300,000 barrels for Crude oil was unlawfully loaned to Enviroshore without proper approvals from SFF, CEF Boards, Minister of DoE and National Treasury concurrence	

Purpose and scope of the Forensic Investigations

The objective of the investigation:

- Allegations of irregularities in respect of the award of contracts.
- Decisions leading up and subsequent to the concluding of the SFF Ogies Storage Facility Recovery and Processing of Sludge from Mine Oil and
- Pumping Water from Bore Holes Agreement between the SFF Association ("SFF") and Enviroshore Trade and Logistics (Pty)Ltd ("Enviroshore") on 10 January 2014

Key Findings & Impact	Consequence Management Process
Report currently with the Hawks	The lawyers are looking into the consequence management process

Key Outcomes	Law Enforcement Agencies Consulted

- Hawks are investigating a possible criminal case
- Forensic Investigations concluded
- A claim has been received from Mecuria the company that bought the 300,000 barrels from Enviroshore claiming that the former CEO gave Mecuria a guarantee that the crude oil bought from Enviroshore was unencumbered and SFF signed a storage agreement for the 300 000 barrels and SFF is in negotiation with Mecuria to resolve the matter

Processes SFF followed to dispose of the strategic stock

6 October 2015 the then Acting CEO OF SFF wrote a letter to the minister of energy requesting a ministerial directive for stock rotation.

On 8 October 2015, Minister Joemat-Pettersson issued a directive in response to the Acting SFF CEO's correspondence of 6 October 2015. Minister Joemat-Pettersson imposed the following conditions:

- Any rotation of strategic stock will be undertaken with a Ministerial Approval, preceded by a detailed due diligence undertaken by the SFF, and supported with a comprehensive motivation to the Minister.
- The integrity of our Strategic Stock levels must be assured in all instances.
- A trading division should be established within the SFF and must be appropriately staffed with skilled personnel and resources to undertake trading activities which must generate revenue for SFF.
- The SFF shall provide a Monthly Report to the Minister and the Department on all activities in relation to the Directive granted.

Processes SFF followed to dispose of the strategic stock….continued

- The strategic stock was sold when the market was in ***contango**,*** without having back to back purchase agreement in place.
- The process followed by Gamede was not ***transparent, fair and equitable***.
- The Acting CEO ***failed to comply*** with the conditions for rotation of stock laid down by the minister ***on 8 October 2015*** and the SFF board on ***23 November 2015.***
- SFF EXCO members only became aware of the Minister's in-principle approval of the disposal on ***13 November 2015.***
- The Acting CEO elected to follow a negotiated process instead of an open bidding process for the strategic stocks disposal.
- No cogent reasons supplied for utilising "negotiation without prior tendering process".

*** ConContango and backwardation are terms used to define the structure of the forward curve. When a market is in contango, the forward price of a futures contract is higher than the spot price. Conversely, when a market is in backwardation, the forward price of the futures contract is lower than the spot price.*

Required Process that should have been followed

Implementation of the Directive would require the following:

- A fair transparent procurement process at SFF in engaging and selecting the traders for the “rotation” in adherence to the procurement process;
- Procurement Policy of SFF should have been adhered to;
- Establishment of the Trading function as condition of approval;
- Approvals of SFF Exco and Board for the rotation;
- Submission to CEF Board for approval in compliance group materiality and significant framework.

Approvals Required in addition to adherence to the Directive

- After CEF approvals there would a need for ministerial (Executive authority) approval as well as National Treasury concurrence.
- Adherence to the Companies Act;

Key lessons learned

- None of the above approvals were sought by the Acting CEO of SFF;
- There ***was no "rotation***" as proposed to the Minister but it was rather a "Disposal" as the replacement stock was never purchased.
- Failure to adhere to the conditions imposed by the Minister;
- CEF was only alerted to the Sale when the proceeds were paid into the SFF Bank Account which is managed by CEF;
- Upon inquiry the CEF Board was subsequently advised of the Sale by the Management at the time.

Forensic Update Report- SFF Association

Problem Statement	Period: 2017 - 2019
SFF bought 10 million litres of diesel in Zimbabwe from IPG and sold to another company Line Petroleum in Zimbabwe with no trading license in Zimbabwe. Line Petroleum did not honour the contract and SFF has never received the 10 million litres of diesel.	
Purpose and scope of the Forensic Investigations	
Forensic Investigation into the circumstances surrounding the disposal of 10 million barrels of the strategic crude oil reserves during 2015 / 2016	
Key Findings & Impact	**Consequence Management Process**
• Report currently with the Hawks	The lawyers are looking into the consequence management process.
Key Outcomes	**Law Enforcement Agencies Consulted**
• The hawks are investigating the criminal case • Line Petroleum was taken to Court and SFF won the case • However, the probability of recovery is low as Line Petroleum has no assets in South Africa. • The lawyers are looking into the possibility of initiating legal proceedings against Line Petroleum in Zimbabwe	

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Forensic Update Report - AEMFC

Problem Statement	Period:
Violation of procurement policy and procedure, unauthorized oversees trip and mismanagement of AEMFC strategic projects as well as abuse of power by the AEMFC Chief Executive	

Purpose and scope of the Forensic Investigations

The Board appointed Gobodo to investigate all allegations in the 2nd Quarter of 2019 which related to the following:

- Violation of Procurement Policy and Procedure
- Unauthorised overseas trip
- Mismanagement of AEMFC strategic projects

Key Findings & Impact	Consequence Management Process
• AEMFC CEO was found to have transgressed procurement policies and mismanagement of company resources.	• The CEO and three executives were dismissed • Two other executives and one senior manager resigned before disciplinary processes were instituted

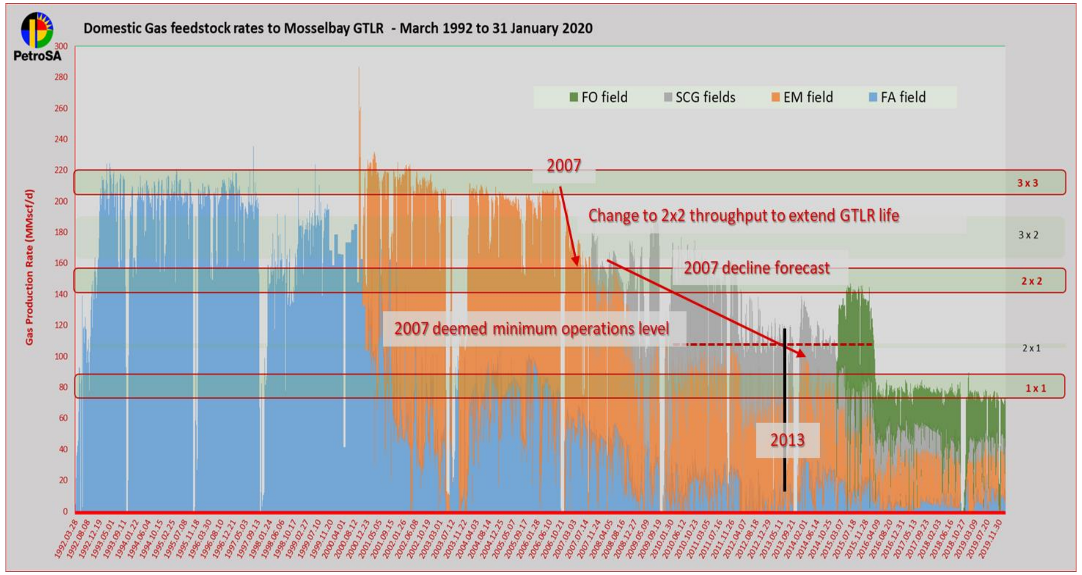
Key Outcomes	Law Enforcement Agencies Consulted

- The CEO of AEMFC has been blacklisted from any future employment with the state
- The CEO approached CCMA and the matter is at the advance stage of arbitration.
- Two other executives have also approach CCMA.
- AEMFC is in the process of instituting civil action against service provider to recover losses by AEMFC
- Filing of an affidavit to the ***"Hawks"*** by the Chairman of the board, with the assistance of Werksmans Attorneys. The actions relevant to third parties (i.e., O'neill's Insurance Broker's FSP designation number being unlawfully used by Innovent) would have to also be factored into the affidavit for Hawk's investigation and action.

Ikhwezi Report

Why Ikhwezi ?

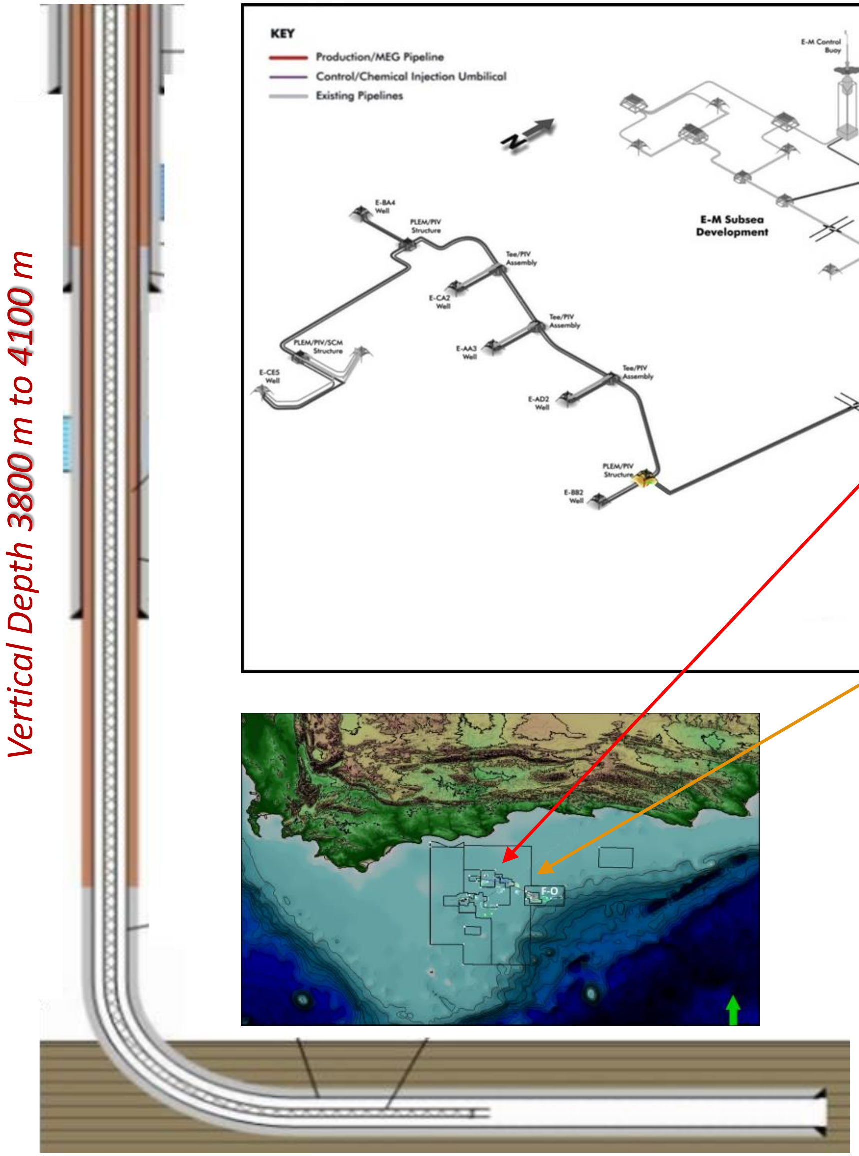
- *In 2007 decision taken to drop throughput to 2x2 operations from 3x3 to extend GTLR life, as PetroSA anticipated end of gas feedstock supply to be June 2013.*
- *The development of South Coast Gas was implemented as a stop gap to allow time for a more permanent feedstock solution for the GTLR to be developed.*
- *No alternative refinery feedstock other than gas feedstock proven at this time.*
- *LNG importation was considered as an alternate solution to feedstock supply. LNG supply contracts mitigate reliance on a single source of gas feedstock. Howeven, the LNG importation project development was stopped in February 2010 as commerciality could not be proven.*
- *Well workovers of suspended or underperforming production wells were considered in deliberations on alternate feestock supply.*

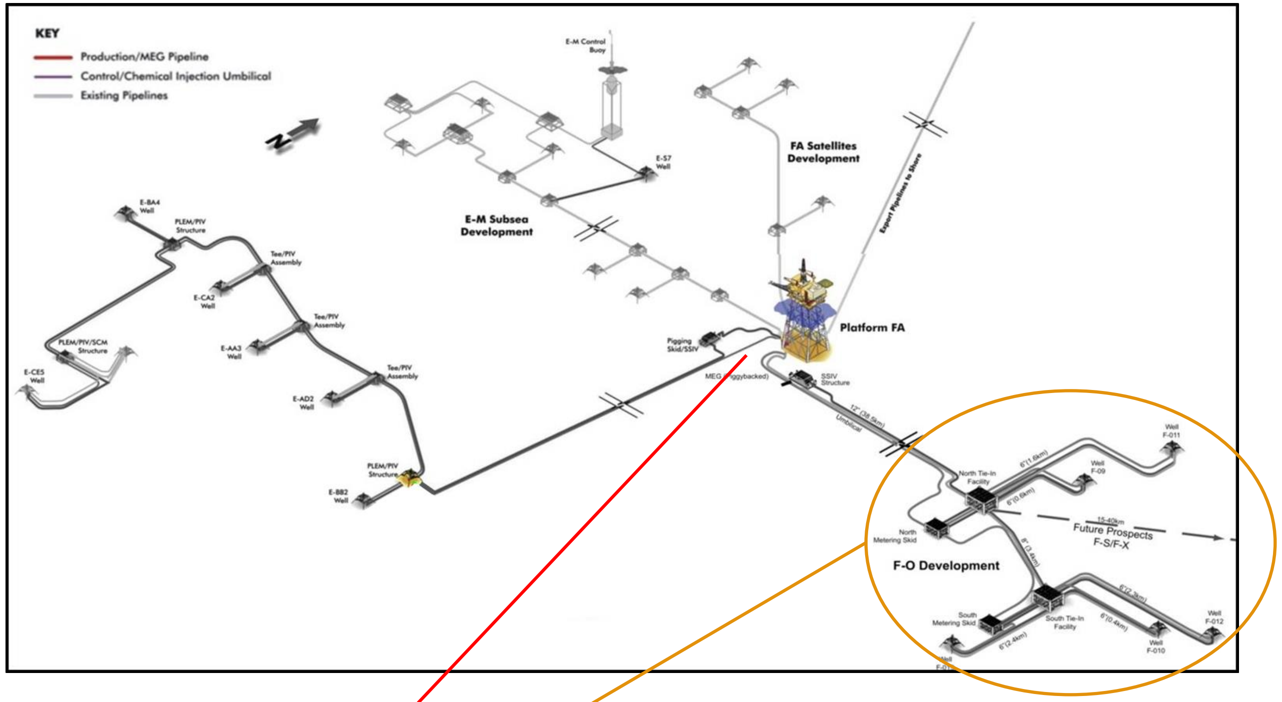


- *The commercial risk associated with workovers deemed too high for the additional gas it could potentially provide.*
- *The F-O accumulation, 40 km to the east of the F-A platform, discovered in 1981 with the drilling of F-O1 was the only material accumulation (~ 1 Tcf of in-place gas) available. A choice from 1 option.*
- *Decision taken in 2010/11 to <u>fast track</u> the F-O development to supply gas feedstock to the GTLR, later described as Project Ikwhezi. Due to the fact that F-O gas was drier in composition than indigenuous supply at the time, condensate feedstock had to be sourced elsewhere (to improve conversion process)*

F-O field Development: Salient points @ FID.

Conceptual well path diagram for 5 planned Ikhwezi Development wells





Major Budget categories @ FID

5 horizontal wells	$ 816 million
Sub Sea Infrastructure	$ 400 million
FA-platform modifications	$ 25 million
Other (PM, Insurance, etc)	$ 55 million

- *The F-O field is located 40 km to the south east of the F-A platform in a water depth of 210m. The F-A platform is situated 80 km offshore Mossel Bay*
- *The reservoir is in a geological sequence described as an Upper Shallow Marine environment at a depth of ~4 km under the sea floor. The reservoir is known to be a high temperature, tight gas reservoir (materially different from the gas reservoirs developed by PetroSA to date at the time)*
- *It was estimated that the F-O field contains as much as 1 trillion cubic feet (1 Tcf) of gas in place.*
- *The F-O field development Project anticipated to extract 240 billion cubic feet (Bcf) over an 8 year period from this field through the drilling of 5 horizontal wells (1.5 to 1.8km horizontal sections).*
- *The budget for the development at project approval (FID) was US$ 1 291 million, later increased to $1 344 million to mitigate the poor drilling performance experience by contracting a second rig.*
- *The project could at best be described as marginally commercial from inception considering a NPV (@11.5%) of $261 million (for a capital outlay of $ 1.3 billion).*
- *The looming GTLR closure scenario, as well as the inevitable triggering of the underfunded abandonment obligations in the closure case contributed to the approval of the development as a fast-track Project.*

Ikhwezi: Major project lifecycle dates

FID basis
- *Drilling starts January 2012*
- *First gas Q1/2013 (from 2 wells)*
- *144_{P90} – **240**$_{P50}$ – 320_{P10} Bcf (8 years, blowdown)*

GTL feedstock
- *(workovers, no Ikhwezi, LOF after 2x1) : 2013*
- *(workovers, Ikhwezi, 3x3 for while, LOF after 2x1): 2019*

2007

South Coast Gas developed

GTL feedstock till 2013

LNG importation evaluation

Feb 2010

LNG solution not economic

24 July 2010

24 Mar 2011 (FID)

*Approval for project to proceed, BUT approval of **drilling** contract **deferred**;*

Project schedule NOT updated to accommodate delayed approval

(Delayed approvals allowed the operator to exercise additional options. Further delays)

27 May 2011

Board Approves drilling contract

First gas: Q1/2013 with only 1 well still deemed do-able

24 Jan 2013

Drilling starts

(ENSCO 5001: F-O09P)

Nine months delay

Schedule overruns

Cost overruns

ENSCO5001 inefficient

6 Jun 2014

Transocean Marianas mobilized to mitigate drilling challenges

Budget now: $1 344 million

31 Dec 2014

First Gas to platform

9 May 2015

Board suspends Ikhwezi

Gas expectation (Ikhwezi) ~36 Bcf till LOF

Three producing wells

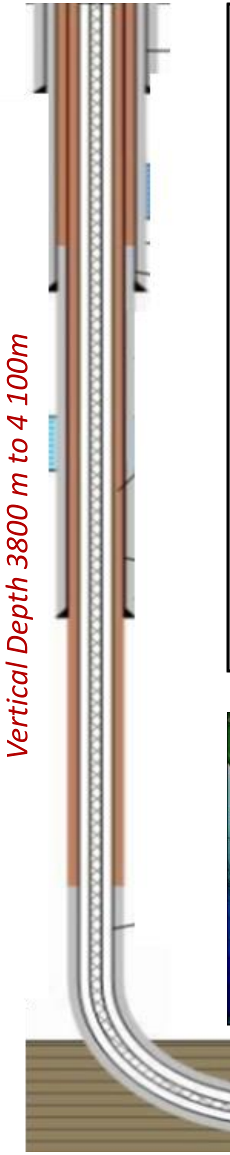
Actual cost @suspension $ 1 220 million

April 2020

Ikhwezi produced 56 Bcf to date

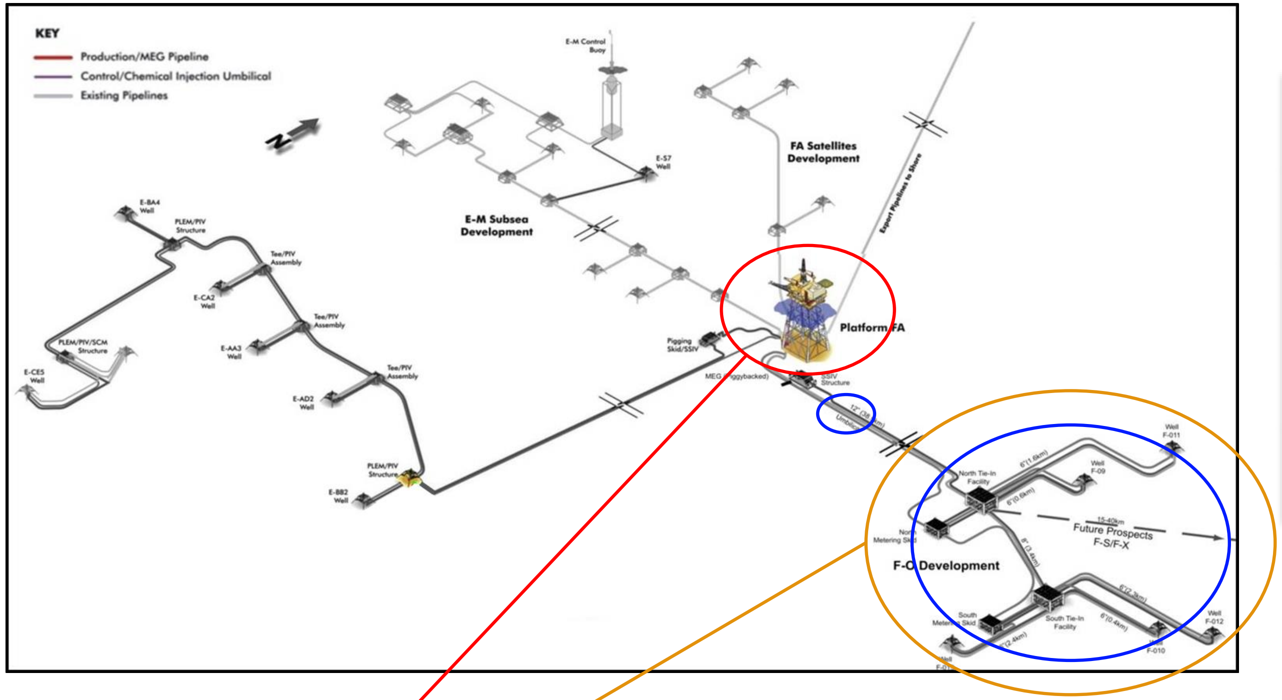
LOF FY 2021 @ 1x1

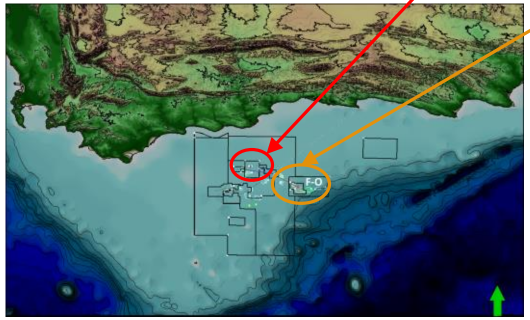
F-O field Development: Concept, @ FID vs @suspension.



Vertical Depth 3800 m to 4 100m

Horizontal section 1 500m to 1 800 m





P50 volume expectations @ key event dates & actual @ April 2020

@FID from 5 horizontal producers over ***8 years*** *(from first gas, (P50)*	240 Bcf
FID ~ restated to three producing @ suspension to ***2024*** *(P50)*	144 Bcf
Forecast @suspension from 3 wells **over *8 years*** ***(2022)*** *(P50)* *(NB – The 8 year period used for the estimation extende beyond the commercial cut-off considering the combined fields production at the time;* *Aligning 2015 calculations with the then anticipated end of gas feedstock operations would restate this number to ~ 36 Bcf)*	46 Bcf 36 Bcf
Actual (~P100) @ 06 April 2020 from Ikhwezi ***(@2020)***	56 Bcf

Key considerations for project suspension

Major Budget categories @ FID

5 horizontal wells	$ **816** million
Sub Sea Infrastructure	$ **400** million
FA-platform modifications	$ **25** million
Other (PM, Insurance, etc)	$ **55** million

Costs rounded and grouped from source documents

Project close-out cost report

3 horizontal producing wells (F-O09P, F-O10P, F-O11P) 1 (not completed) suspended slanted well (F-O12)	$ **679** million
Sub Sea Infrastructure	$ **407** million
FA-platform modifications	$ **66** million
Other (PM, Insurance, etc)	$ **56** million

External consults & investigations – Management & Board (1)

Scope: Governance/Risk

Mar 2011

ERM RISK review

Provide Assurances that no critical risks have been overlooked

- PetroSA risk management process adopted for the F-O development have adequately captured significant project risks.
- Improvements recommended
- No likelihood of significant breach of PetroSA risk appetite identified

Scope: Project management

May 2012

KPMG Drilling

Independent assessment of Ikhwezi; review of packages and project team's actions critical to meet first gas.

- Contract award to drilling contractor, given technical & commercial considerations was appropriate
- Commercial terms and conditions, including the exclusion of damages for late delivery were appropriate given drilling contractor's commitments prior to PetroSA contract.
- Project implementation was condensed following Board request to improve capital estimates by requesting bids prior to overall approval *(stated differently – the project schedule was not updated given the additional governance requirements at start of project)*
- The drilling rig arrival forecast is reasonable
- There is significant risk that first gas date of 22 June 2013 will not be met

Scope: Governance/Risk

Jul 2012

KPMG Governance

Review Project Governance as project moves into execution.

- Deficiencies in governance structures identified compared to best practice
- Comments on changes in Project Structure and personnel changes.

Scope: Governance/Risk

Mar 2013

DNV Risk Review

Review Project Governance as project moves into execution.

- PetroSA conducted comprehensive risk management to deliver extensive, still-relevant risk baseline
- Risk Management team's methodology, whilst qualitative provides good basis for communicating and rating capital projects' risks
- Recommendations for improvements made include moving to quantitative and probabilistic risk management practices

Scope: Forensic

Jun 2013

SNG 2

Review of contracts entered into between PetroSA and KBR.

- The fact that the tender was not awarded to KBR appears to be *irregular.*
- The difference between the (anticipated) KBR costs and the incurred costs with Petrofac is deemed fruitless and wasteful expenditure.

(*This contract dealt with the modifications required for the F-A platform to receive gas from the development (Ikhwezi). The original selection of KBR by the project team was based on the EPCM model. This recommendation was overturned and awarded to Petrofac and became a PetroSA managed contract). Actual was >250% of budget in the end.)*

Scope : Project Management

Jun 2015

IPA project review

Evaluate Ikhwezi's project performance against industry benchmarks

- Project did not meet FID business objectives
- Project was established with less than average practices
- (up-front) Reservoir performance appraisal insufficient
- Three contractual changes made post FID "*by management*" undermined key elements of project definition and negatively impacted schedule
- High turnover in project, executive and board level personnel resulted in loss of accountability for the business case.
- Inadequate project status reporting initially.
- Observation that inadequate attention was given to risk department's reporting to governance structures. "Seen as bearers of bad news"
- Recommendations made (SEPARATE SLIDE)

External consultations & investigations – Management & Board (2)

Scope: Project Management

Mar 2011

IPA: 4th well (F-012) approvals

Review of 8 May 2015 submission to Board Ad-Hoc Committee to suspend F-012 development well

- PetroSA needs to focus on levels of responsibility and determine who is accountable for decisions
- The drilling, completion and tie-in of the F-012 well was not competitive on a $/BOE basis
- NPV calculations submitted are "directionally in-line"
- While macro drivers are important, e.g. oil price, X-rate etc., better understanding the implications of schedule slip, cost growth, lower production etc. will enable more informed decisions

Scope: Forensic

Jun 2015

GFIA

Decision to continue drilling FO-12 pilot well

- All the decisions relating to the drilling of the Pilot Well FO12 were approved at the Ikhwezi Steering Committee and EXCO utilising "sunk and termination" cost.
- There is no single individual responsible for the decision to proceed with the drilling of the F-012 pilot well.
- The expenditure incurred in the drilling of the F-012 pilot well had been duly authorised by the Board as part of the Revised Budget approved in February 2014.
- Management has not exceeded the approved Revised Budget
- GFIA cannot conclude that any of the expenditure incurred in the drilling of the F-012 pilot well was not appropriately approved.

Jun 2015

PetroSA Board

Suspension of GCEO, GCGO & VP:NVU (acting)

Scope: Forensic

2015 / 16

SNG

Investigation into PetroSA performance for FY2015 and the R14.5 billion impairment charge.

The reports prepared for PetroSA for purposes of this investigation are protected by legal privilege as the reports contain sensitive information.

The information provided in the document issued with this presentation to the Board of Directors should be treated as confidential and with the sensitivity that it requires.

Amicable termination of the CEO & CFO's contracts of employment and reinstatement of VP Upstream followed.

Scope: Project Management

Apr 2016

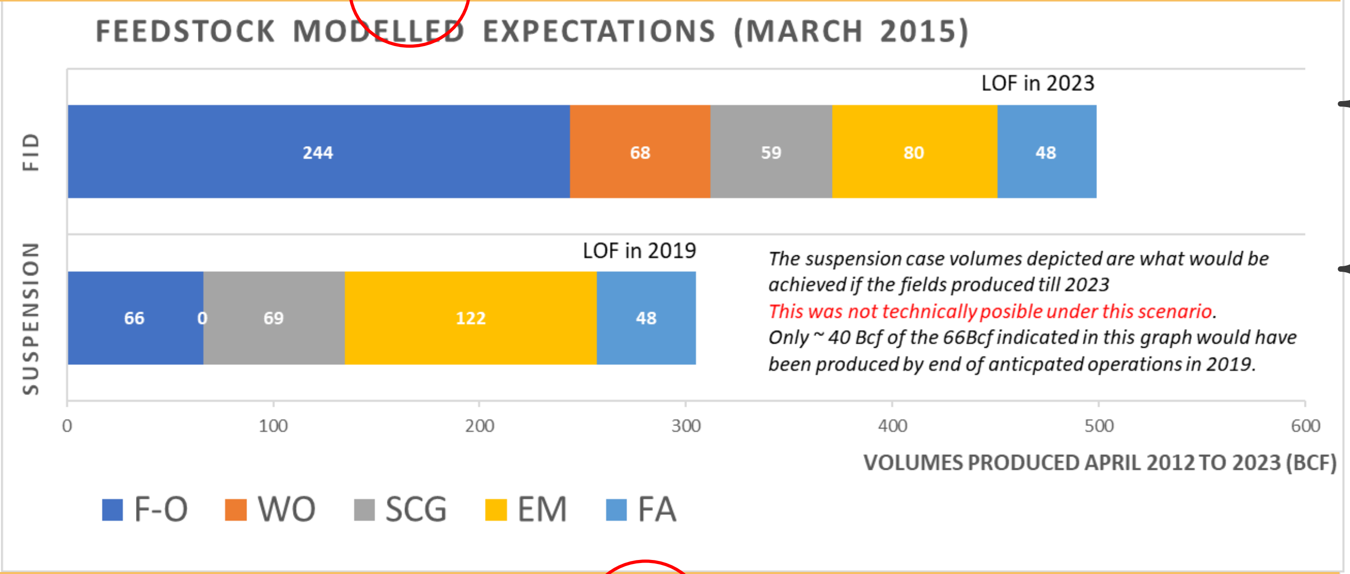
IPA project review (2)

Evaluate Ikhwezi's project performance against industry benchmarks

- Project did not meet its business objectives
- Recoverable volumes from three wells 46 Bcf
- Forecasted expenditure $1270 million
- First Gas slipped 21 months
- Peak production planned 140 but peaked at 78 MMscf.
- **See slide for recommendations made.**

Volume & NPV FID vs. March 2015

01 April 2012 to 2023 expectations (@ March 2015)

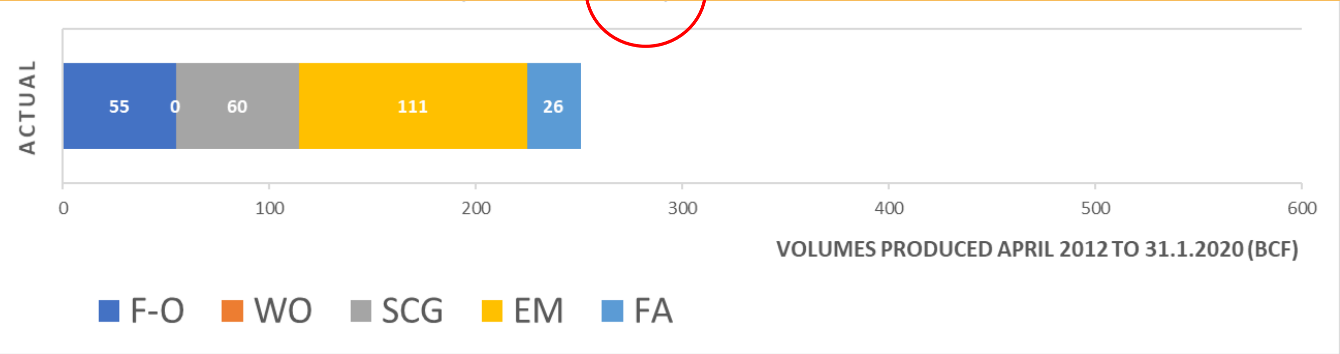


244 Bcf was expected from F-O
68 Bcf was expected from workovers
LOF (@2x1) was 2023

~40 Bcf was expected from F-O (by 2019)
(see note in graph)
No contribution considered from workovers
(not executed)
LOF (@2x1) was 2019

NPV	
$261	Mar-11
$504	2012/13
-$593	2013/14
$209	2014/15
-$550	2015/16

01 April 2012 to 31 January 2020 (Actuals)



From 31.12.2014 to 31.1.2020 F-O produced 54.7 Bcf of gas
LOF (@1x1) expected 2020/21

IPA (Independent Project Assessment) findings (1)

Key Message: Average Practices undermined by post FID changes led to a poor project

- The project did not meet its business objectives
- Post FID executives made three major changes making cost and schedule targets almost impossible to meet
  - Changing the topside scope implementation contractor from KBR to Petrofac
  - Delaying award of the primary subsea contract to SBM. Multiple installation contracts needed to execute single scope.
  - Delaying the decision to award the rig contract that resulted in a one year slip in the start of development drilling
- These decisions impacted engineering, design and led to poor productivity
- High turnover in project team key positions during project lifecycle, as well as at executive management and Board resulted in a loss of accountability for the business case and requiring a steep learning curve for new incumbents to understand issues faced by project
- Project controls were poor initially, but improved later
- Risk process in place, but communication of risk to management was a challenge up to late 2013

4 project managers;
4 drilling managers
6 CEO's
2 COO's
2 VPs
Different Boards

IPA (Independent Project Assessment) findings (2)

Key Message: <u>Average Practices</u> undermined by <u>post FID changes</u> led to a poor project

Additional (schedule related) findings extracted from comprehensive IPA report…

- Because of the urgent need to provide feedstock to the GTL refinery which was faced with closure, the Project Execution Model was not adhered to
- Risk identification and development of mitigation plans mean very little if the mitigation plans are not actively executed and closed out
- The project was not resourced appropriately
- There were no defined walk-away trigger points (informed by decision trees) in place should a need to stop the project arise
- Schedule from the very start was very aggressive (30% faster than industry average for similar projects)
- Project delivery at the end was 15% slower than industry average
- The F-A modification scope was not on the critical path of the schedule originally; schedule pressure created with decision to appoint different contractor than initially recommended
- Project milestones affected by this delay were not initially updated and pro-actively communicated

IPA (Independent Project Assessment) findings (2)

Key Message: Average Practices undermined by post FID changes led to a poor project

Additional (cost related) findings extracted from comprehensive IPA report…

- IPA found that the project construction costs were in line with industry average.
- However, the drilling costs were materially higher than industry average.
- The increase in cost was ascribed to the poor performance of the ENSCO 5001 drilling rig. There was recognition that extraneous factors such as the remote location of the development also contributed.
- The development is not situated close to oil field services hubs, hence ‘remote location’ which leds to high mobilisation charges and a need for services to be mobilised and on standby in country for entire campaign.

IPA (Independent Project Assessment) Recommendations

- **Implement a gated project delivery system to enable effective decision making and accountability**
- **Avoid issuing letters of intent (LOIs) after FID**
  Issuing LOI after FEED leads to a loss of commercial leverage with the contractors
- **Understand that contingency by definition, unknown unknowns, is meant to be spent.**
  Access and management of contingency within an approved budget is usually within the control of a project team and not the executive, whereas management reserves are held by EXCO or the Board
- **Improve the reporting processes to management**
- **Board submissions at FID need to reflect the true risk of an opportunity / project, so that effective decisions can be made**
- **Implement a clear and accountable decision analysis process**
  Provide for what-if analysis linked to project outcomes.
- **Improve communication of subsurface risk**
  Risk-mitigation and uncertainty management plan not available, and risks in key decision documents, such FDP, not prominent
- **Finalised Contracting strategy to be signed off by all stakeholders <u>before commencing FEED</u>**
- **Include a planner in every major location**
- **Set the design and operating philosophy of the facility scope early in project life-cycle with the help of a Class of Facility Quality (CFQ) practice**

PetroSA responses, Lessons learned and actions post Ikwhezi

- Not to continue with development until a field is sufficiently appraised and the deliverability risks are adequately described up-front in the Field Development Plan (FDP) <u>and understood by all stakeholders</u>. Whilst the F-O field was adequately appraised from an areal extent and presence of gas, as well as expected reservoir quality, it was not clearly understood, nor communicated within the organisation how challenging the extraction of gas from this tight reservoir would be without hydraulic stimulation.
- ***The preferred contracting strategy for future capital projects is to be the Engineering, Procurement and Construction Management (EPCM) model***. This reduces significantly the number of contracts that PetroSA is required to manage for the Capital Project.
- ***Major Capital Projects should not be fast-tracked.*** There should be no attempts to shorten capital project' schedules by combining Front-End-Loading (FEL) stages specified in the project gated framework adopted by PetroSA post Ikhwezi under the oversight of the Enterprise Portfolio Management Office (EPMO).
- ***Changes in scope post FEED and FID will be avoided***. If changes in scope are unavoidable, these will only be implemented following a well-documented evaluation and approvals of the impact on cost, schedule and quality. Approvals to changes that affect scope will be done at the appropriate Levels of Authority (LOA) as described in the project definition documents.

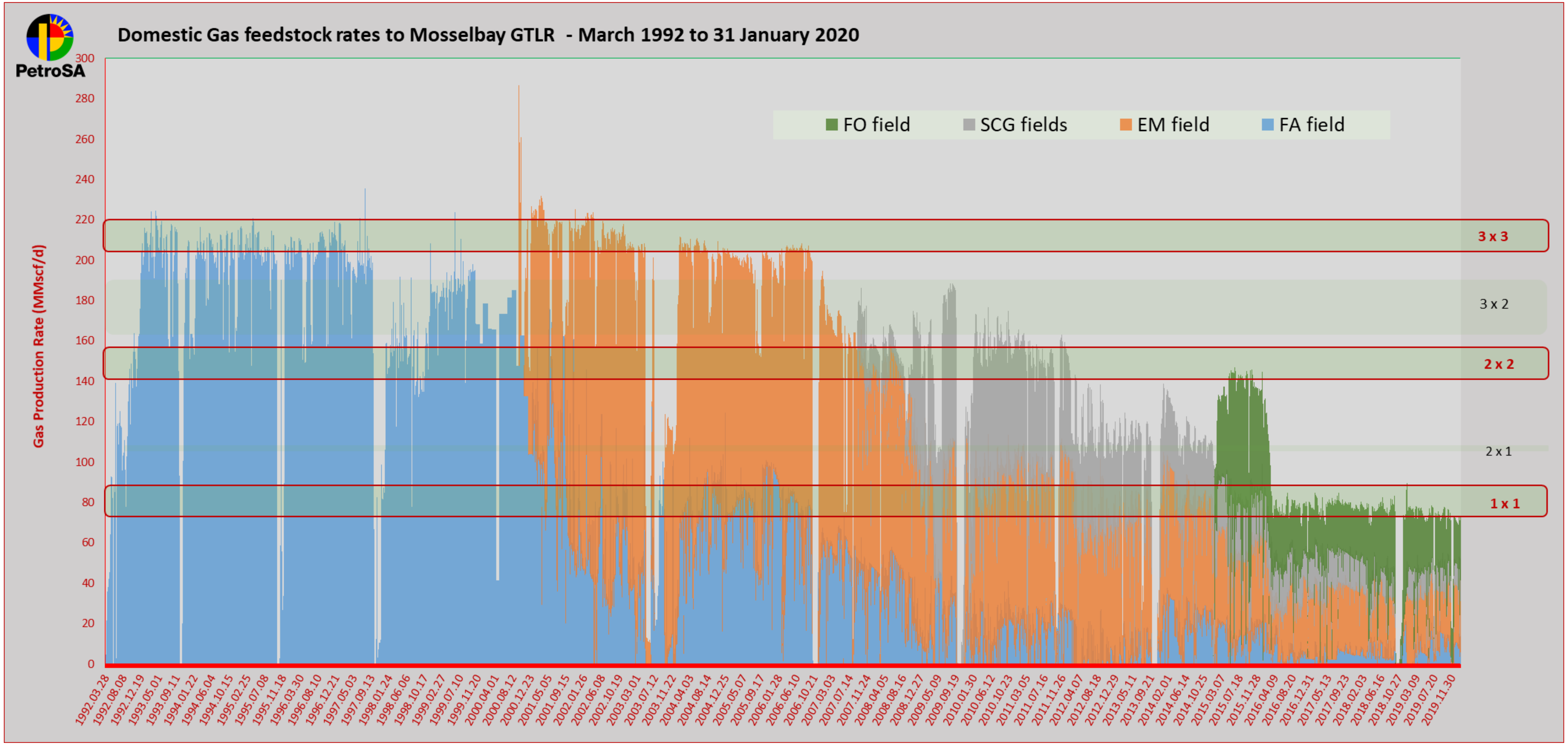
PetroSA responses, Lessons learned and actions post Ikwhezi (2)

- ***The reporting of project progress to assurance structures at executive*** and board level will emphasise emerging risks, proposed mitigations, progress on implementation of mitigation plans required to meet project deliverables
- ***The EPMO guidelines,*** reviewed and updated post Project Ikwhezi emphasises the roles of executives in project steering committees and the accountability that accrues from these roles.
- ***Recognising that PetroSA no longer has the resources needed to execute major capital projects***, the forward corporate plans emphasise technical and financial partnership strategies that will reduce PetroSA's risk exposure and increase its ability to successfully execute future capital projects.
- PetroSA's approval authorities for capital projects will be provided with industry aligned ranges of possible outcomes, stating the ranges/scenarios used in the assumptions. The approvals will include a description of the most likely (or expected) outcome, as well as downside cases and the likelihood of occurrence (aligned with the assumptions made).
- The impact on Business continuity should downside cases result will be well documented in future approvals for major capital projects.

Remaining Project Issues – Project Ikhwezi

- PetroSA issued a notice of suspension to the regulator (PASA) in 2015. This suspension was accepted, but may be challenged. PetroSA has not yet fulfilled its work program obligations under the Production Right awarded to PetroSA, i.e. the drilling and completion of five producing wells.
  PetroSA completed only three wells and unless the work program is formally changed to work already completed, there remains a risk that PetroSA could be deemed non-compliant to its obligation should there be no clear efforts demonstrated to work towards continuing post suspension. In a worst case scenario, PetroSA may lose the right to produce from the Right.
- The award of a Production Right (PR) to an operator, requires of the operator to use best efforts to bring a BBBEE partner on board during the production period. PetroSA has not pursued this given the challenges experienced with Ikwhezi and may be challenged, as was the case before, by local companies of being in breach of the obligations associated with the PR.

Backup: Gas rates March 1992 to January 2020 by individual field



Final Cost Report of Project Ikhwezi

FINANCIAL COST REPORT ON PROJECT IKHWEZI (FO DEVELOPMENT) MARCH 2010 TO MARCH 2016							
			A	B	C	D	E
Object Displayed in			Original Budget USD	Budget after transfers USD	Actual @ Ave month rates USD	Forecast Assuming only partial insurance claim USD	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**

Thank You