Capital Markets Day

Exxaro Coal | **14 -15 October 2019**

Disclaimer

The operational and financial information on which any outlook or forecast statements are based has not been reviewed nor reported on by the group's external auditors. These forward-looking statements are based on management's current beliefs and expectations and are subject to uncertainty and changes in circumstances. The forward-looking statements involve risks that may affect the group's operational and financial information. Exxaro undertakes no obligation to update or reverse any forward-looking statements, whether as a result of new information or future developments.

Exxaro Coal Strategy in Brief

Nombasa Tsengwa | **Executive Head, Coal Operations**

Grootegeluk Complex

Ronaldt Mafoko | **General Manager, Grootegeluk Complex**

Mpumalanga Area

Bram van Stelten | **General Manager, Mpumalanga Area**

Digital@Exxaro Journey

Pleasure Mnisi | **Manager, Business Optimization**

Markets and Logistics

Sakkie Swanepoel | **Group Manager, Marketing & Logistics**

Capital

Mellis Walker | **Group Manager, Financial Performance**

Summary and Conclusion

Nombasa Tsengwa | **Executive Head, Coal Operations**

Exxaro Coal Strategy

Nombasa Tsengwa | **Executive Head, Coal Operations**

Coal | Our Strategy Journey

Prior to 2016

Identified and created plan to execute on key strategic initiatives

Unlocked value in the Waterberg

Reducing Eskom exposure

TFR and RBCT approach

2016

Developed holistic coal strategy house based on pillars of excellence

"Coal of today, fuelling the Exxaro of tomorrow“ strategy

Optimising portfolio based on scenario robustness and profit maximisation

2017

Executed on strategic initiatives for long-term value realization

Identified opportunity to implement digitalisation and innovation to unlock value

Introduced Market To Resource Optimisation

2018

Accelerating 2026 strategy to be in the lowest cost curve

Defined roadmap to achieve our 2026 objectives

Implemented the **“The Startup Way and lean5”** culture to accelerate value realisation

Optimisation of Capital.

2019

Consolidate and Execute ‘2026 Strategy’

Value realisation from our Digitalisation and Innovation Program

Defence strategy against climate change (Early Value)

Executing our 2026 Strategy

Coal | **Our Strategy**

….is to be cost competitive and capital efficient, across our entire business value chain, maintaining a robust asset and volume base, diverse product mix using innovation and intelligence to quickly respond to market changes!

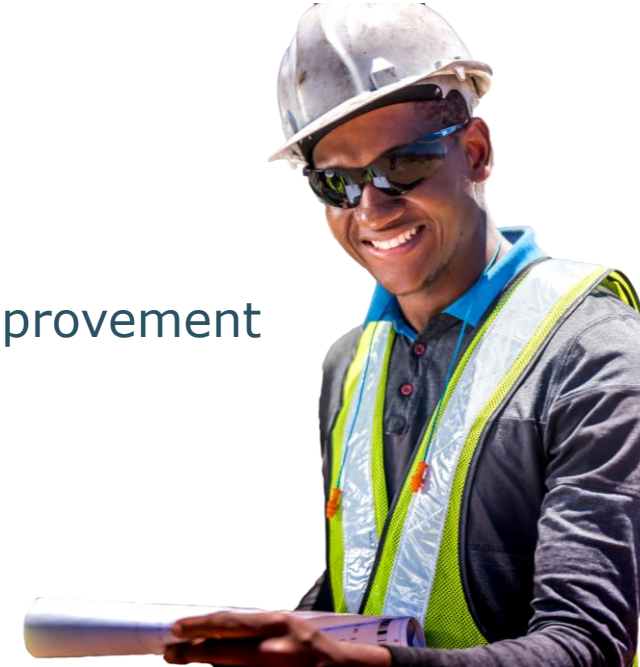
Robust Assets and Volumes
- Mpumalanga Operations
- GG Operations
- Growth Projects

Capital
- SIB
- Growth

Product Mix
- Market to Resource (M2R)
- Market Intelligence

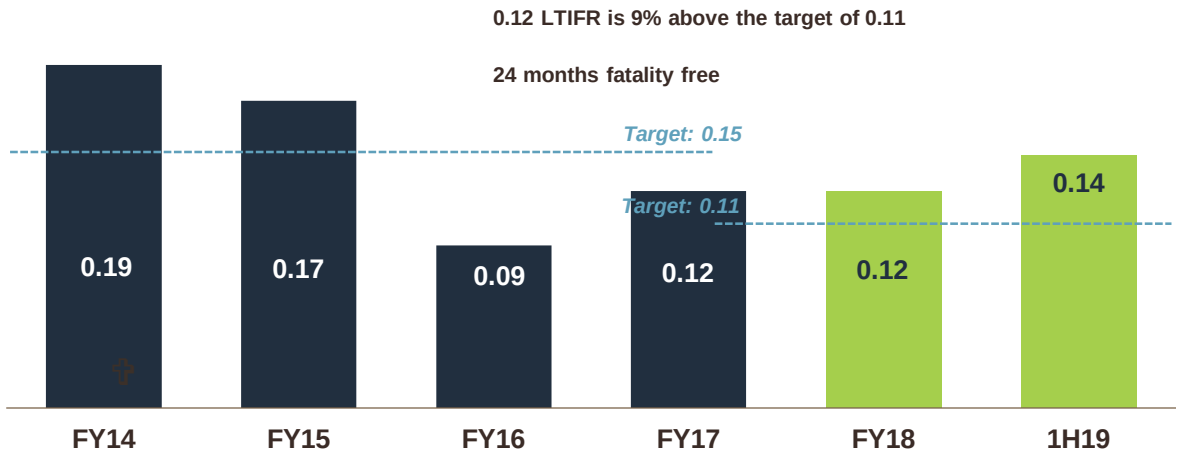
R/t and Productivity Improvement
- Digital@Exxaro
- Operational Excellence

Quick “Market to Resource” response

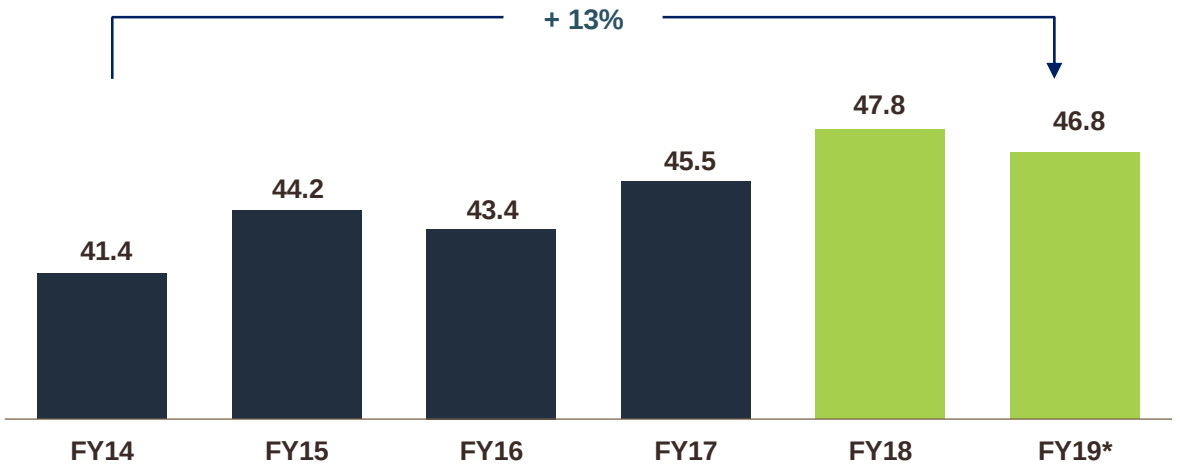


Coal | Our Strategy Continues To Yield Results

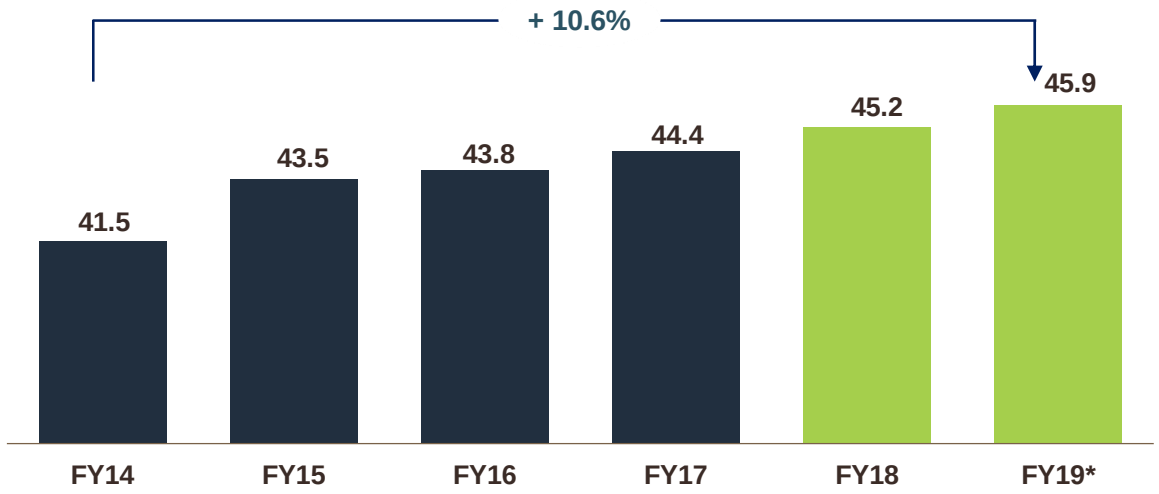
LTIFR



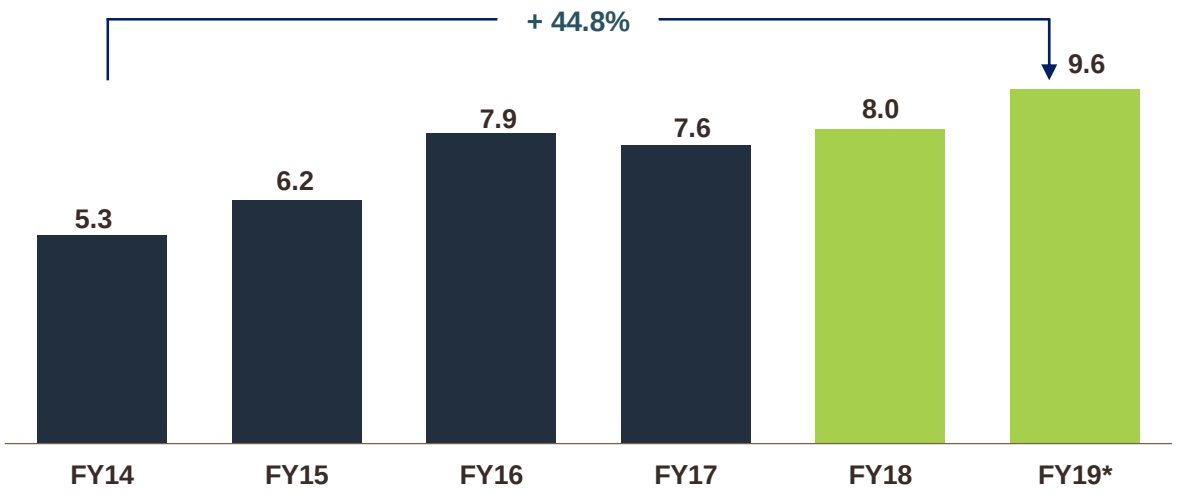
Total coal product (Mt)



Total coal sales (Mt)



Total exports (Mt)



Grootegeluk Complex

Ronaldt Mafoko | **General Manager, Grootegeluk Complex**

exxaro

The Importance Of The Coalfield

- Social – develop the 1st major post-apartheid new urban centre
- National Development Plan (NDP) references the Waterberg
- Economic impact stretches beyond the immediate area:
  - Largest remaining coal resource in Southern Africa
  - Power generation - IPP's
  - Gas potential
  - Chemical industry
  - Regional development – Botswana coal/power

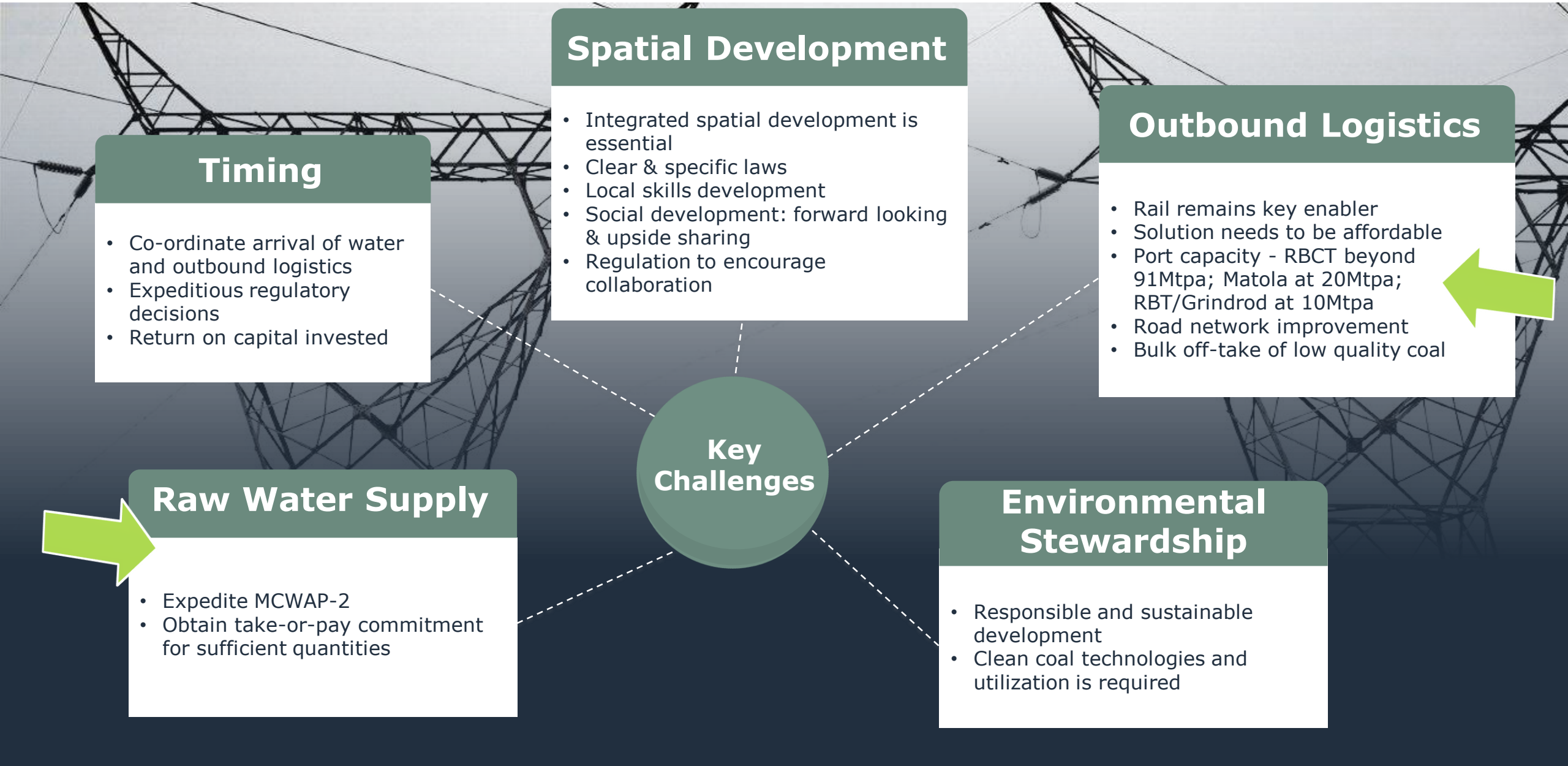
Eskom

- Security of supply for life of power station (quality, volume & price) with >30 year's life
- Supplier to Waterberg and Mpumalanga (future) power stations
- Certainty of baseload electricity generation of ~9,500MW

exxaro

- Grootegeluk and Medupi represent significant long-term investments
- Grootegeluk complex - established and proven operations >35 years
- Multi-product operation - sustainable earnings & dividend growth to our investors

Waterberg Coalfield | **Unlocking The Waterberg**



Key Challenges

Spatial Development

- Integrated spatial development is essential
- Clear & specific laws
- Local skills development
- Social development: forward looking & upside sharing
- Regulation to encourage collaboration

Timing

- Co-ordinate arrival of water and outbound logistics
- Expeditious regulatory decisions
- Return on capital invested

Outbound Logistics

- Rail remains key enabler
- Solution needs to be affordable
- Port capacity - RBCT beyond 91Mtpa; Matola at 20Mtpa; RBT/Grindrod at 10Mtpa
- Road network improvement
- Bulk off-take of low quality coal

Raw Water Supply

- Expedite MCWAP-2
- Obtain take-or-pay commitment for sufficient quantities

Environmental Stewardship

- Responsible and sustainable development
- Clean coal technologies and utilization is required

Remaining South African Reserve

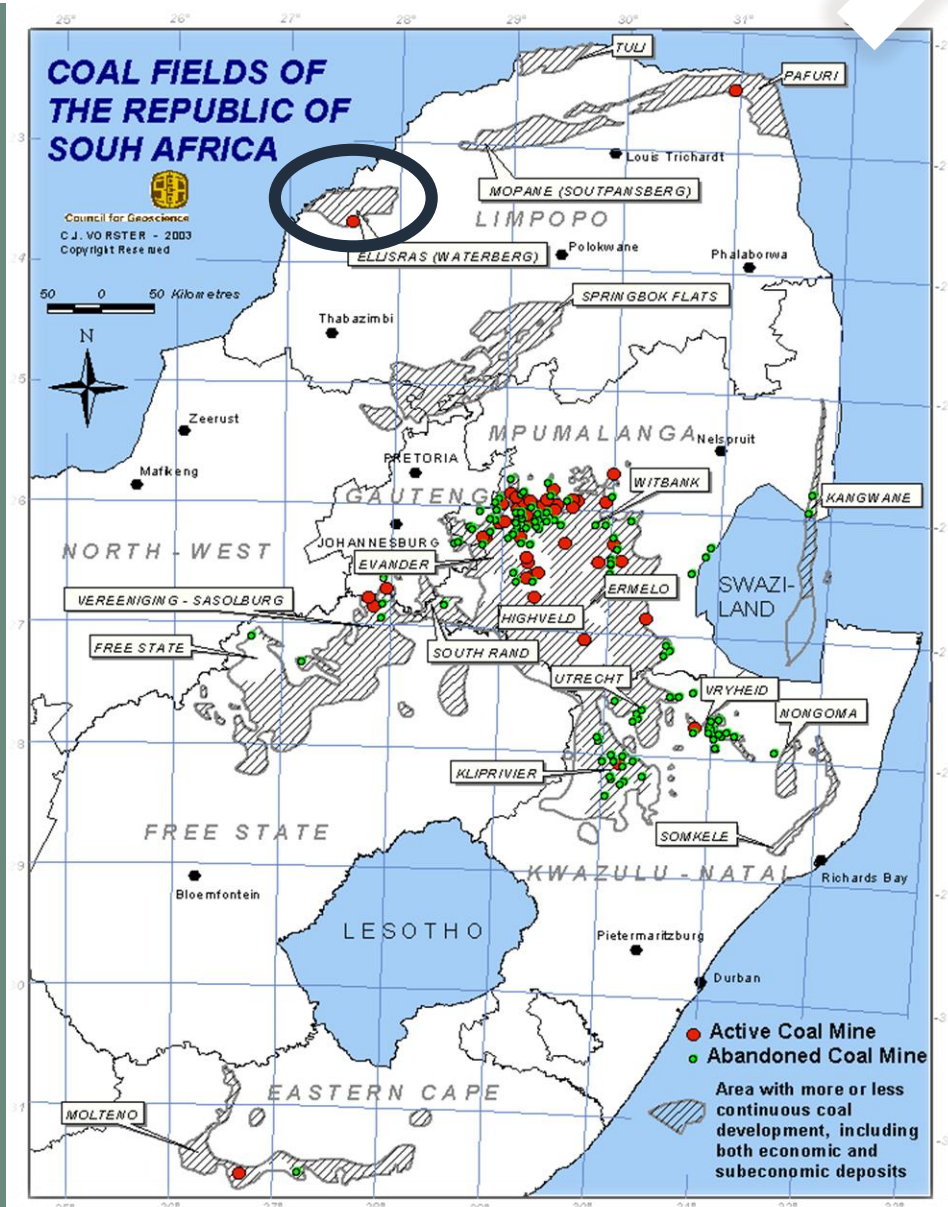
50% of **SA** Coal Reserves &
80% of **Exxaro** Coal Reserves

Dimensions:

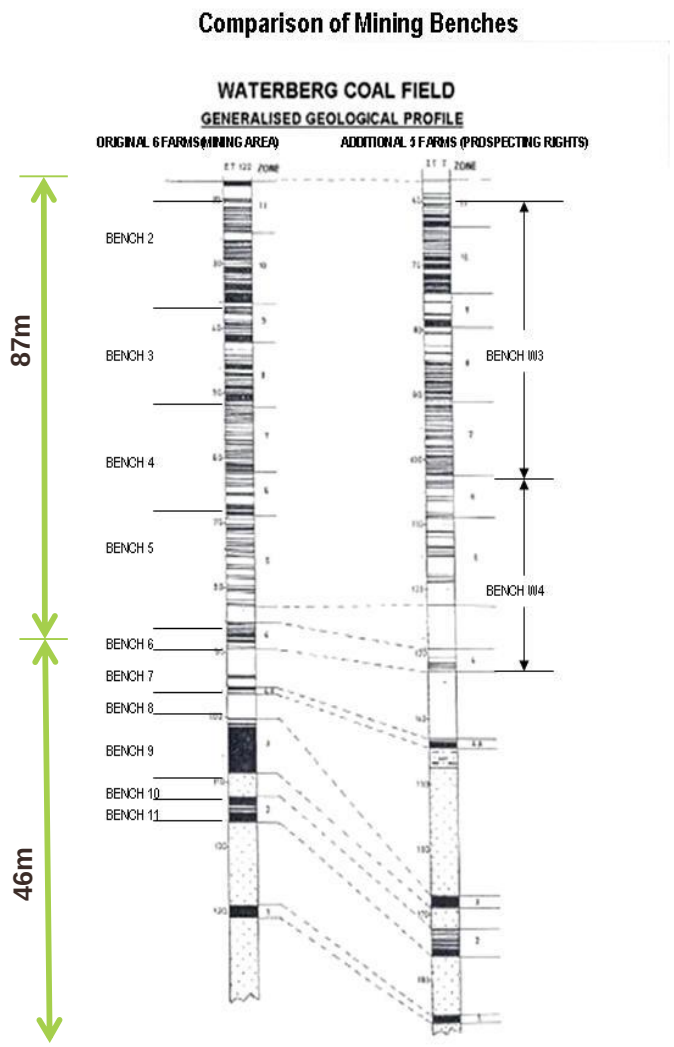
- Stretches 40kms from N to S and 88kms E to W
- Extends Westwards into Botswana

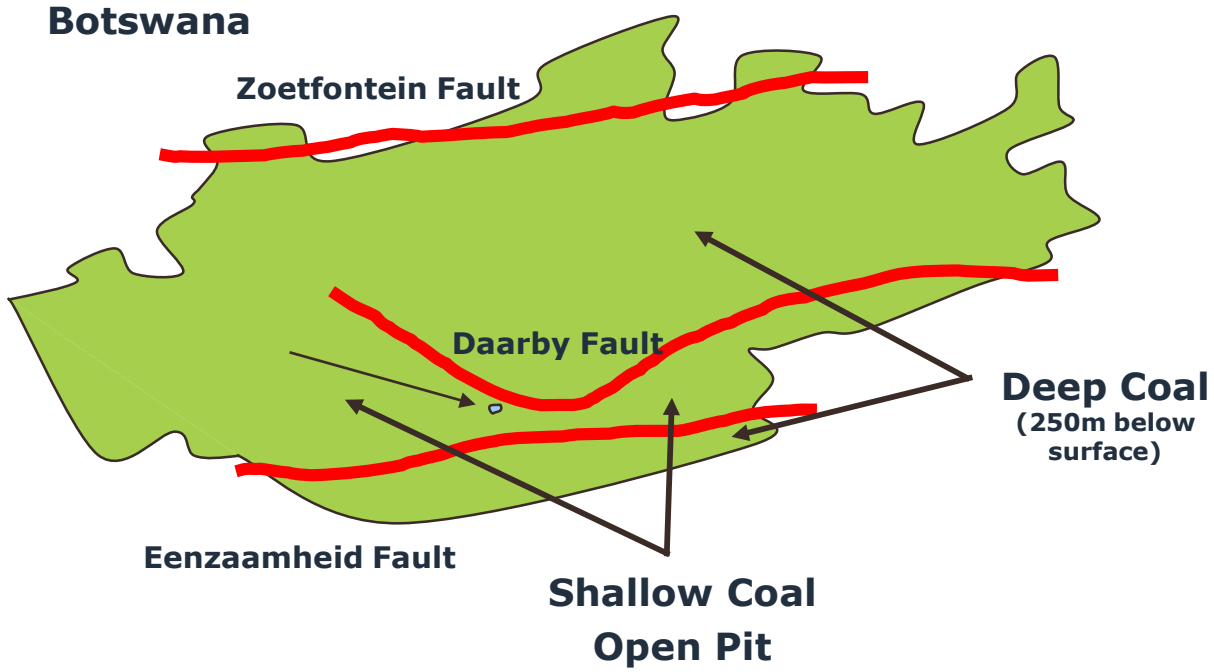
Geology:

- 75.7 billion tons of in-situ inferred resources
- More than 50% of the remaining coal reserves in RSA
- Stratigraphic thickness of 115 m (11 coal bearing zones)
- Mineable coal seams much thicker than Mpumalanga coal fields



Waterberg Coalfield | Geology





Waterberg Coalfield is fault bounded:

- Zoetfontein Fault along the Northern boundary
- Eenzaamheid Fault along the Southern boundary
- Daarby Fault divides the coal field into open-pit mineable and underground mineable reserves
- Grootegeluk is best positioned for growth and low cost production as stripping increases and quality decreases as mining commences to the west

Grootegeluk | Overview

PIT	Plant	Product
Waste B1a B1b B7a B8 B10		
Top Benches B2-4	**GG1, GG6** 2 staged beneficiation. First remove discard then split product into PSC & SSCC	PSC, SSCC	• 10.3% Ash • 6000 kCal (10.3 – 15 % Ash – RB1 Spec and better)
Middle Benches B5, 6, 7b, 9a (with some B2-3)	**GG2, GG8** Single staged to remove discard **GG3, GG7** Crush & Screen – dry material	PSC	• 35% Ash @ 20.5 Mj/Kg
Lower Benches B9b, 11 *(with some* B9a*)*	**GG4/5** Single staged to remove discard, then screen into different product sizes **GG10** (sold as export material)	PSC, MET	• Sized 15% Ash – Low to Med Phos • Small nuts, Peas, Duff, PCI
Backfill First level with Interburden, the next levels with discard from the plant, sealed with overburden	**Fines** Spirals, RC's, Belt filter, Cyclic ponds, Slimes dams	**Reductants** Use the Small nuts produced by GG4/5 from B11 to produce semi-coke	• Semi Coke

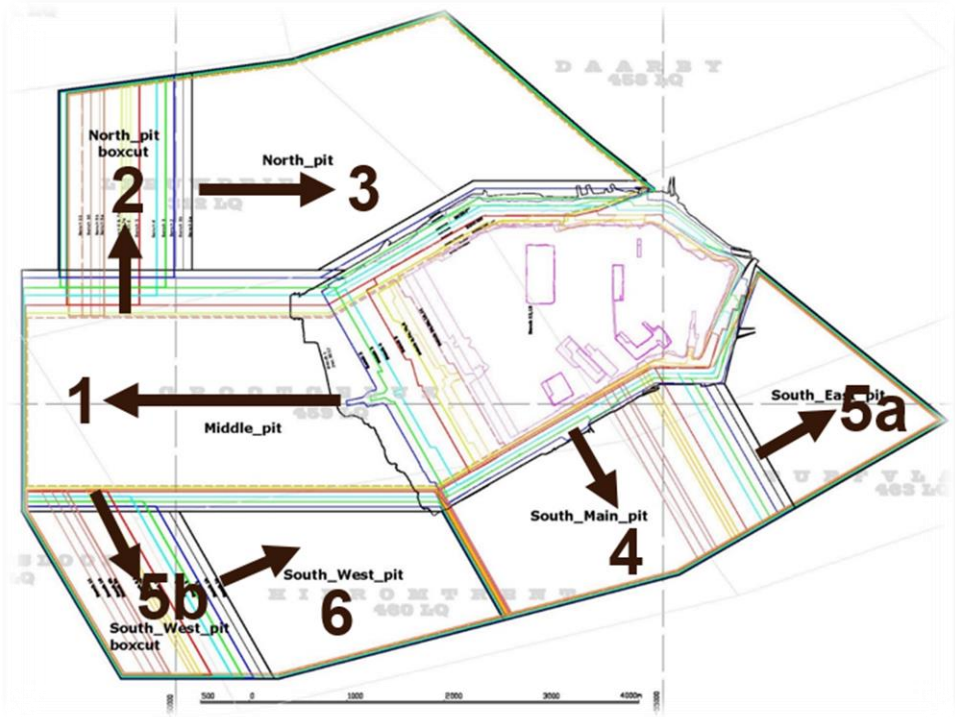
Grootegeluk | Mining at a Glance

OPEN CAST MINE

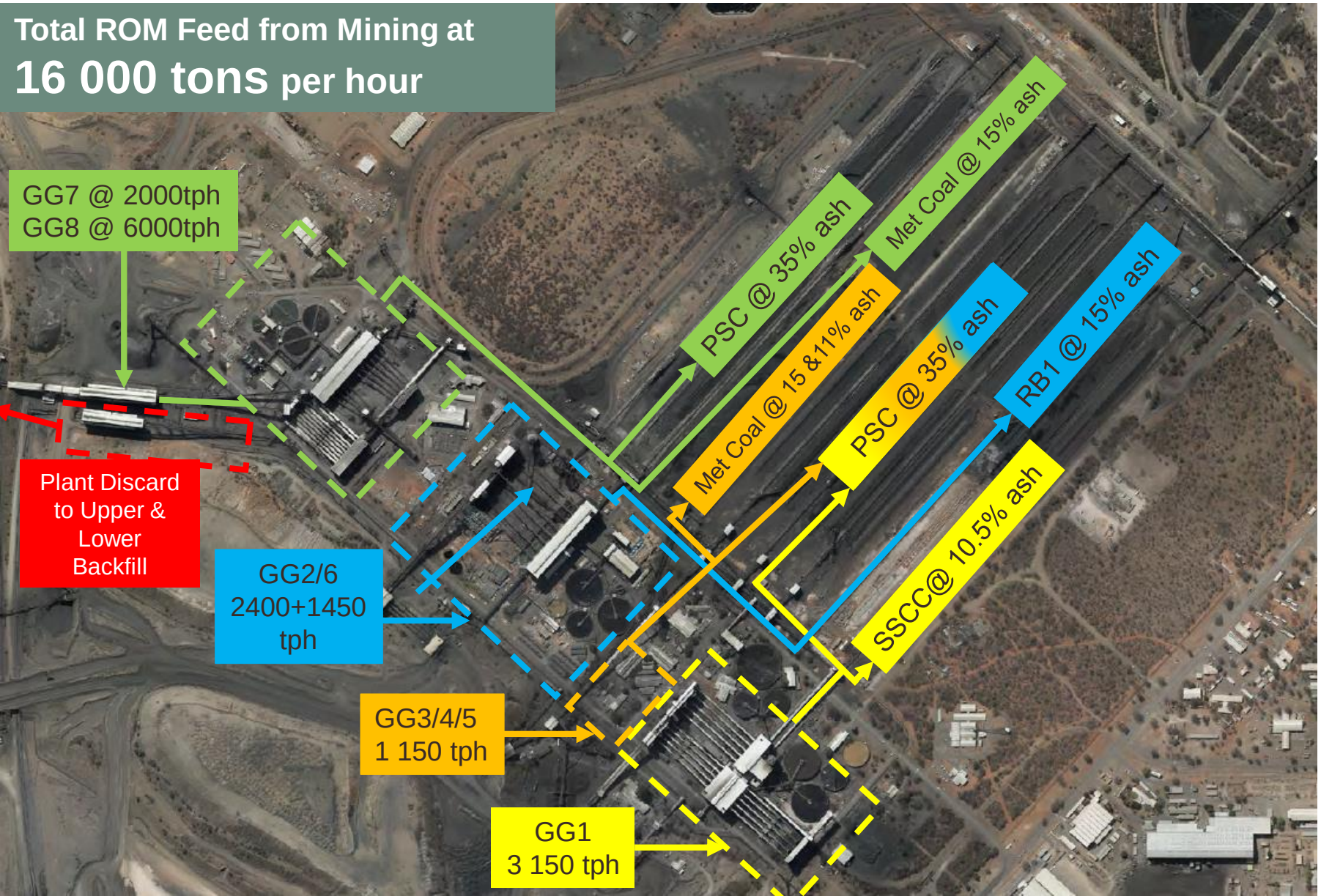
- 13 benches
- 120m Deep
- Surface area 1200 ha

Grootegeluk | **Mining at a Glance**

LOM Layout



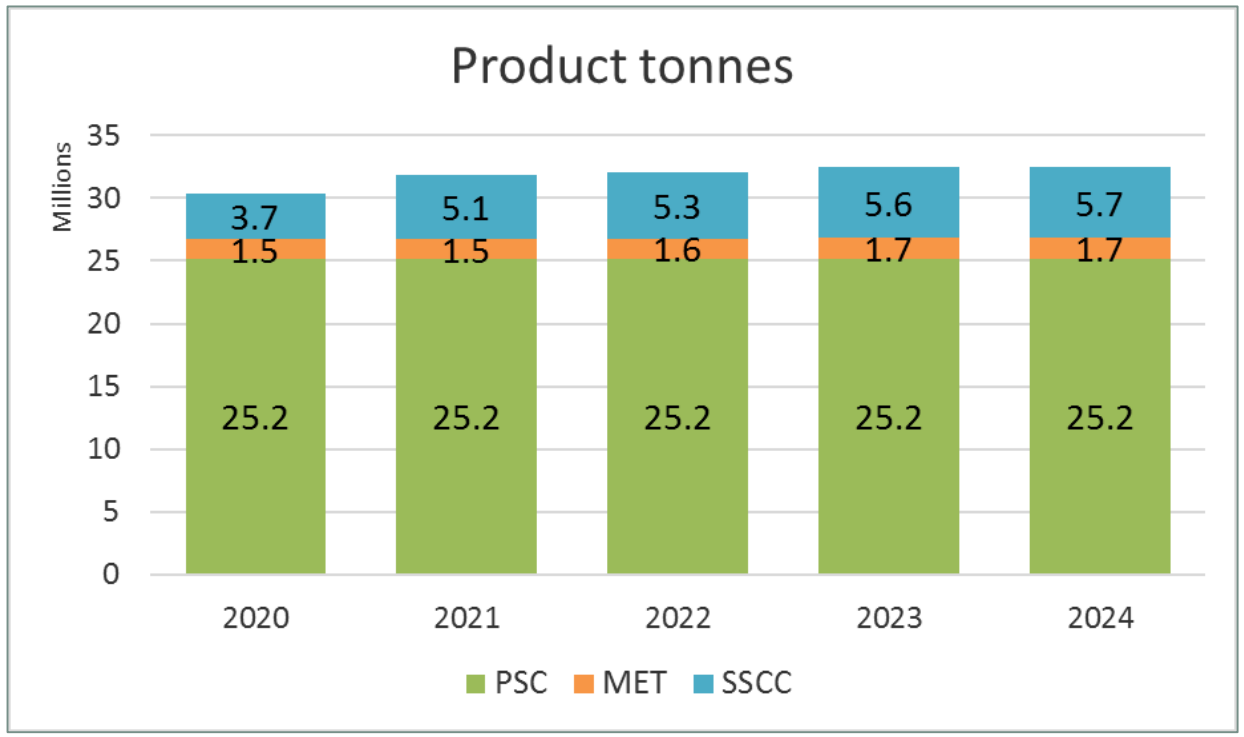
Grootegeluk | # Plant Complex at a Glance

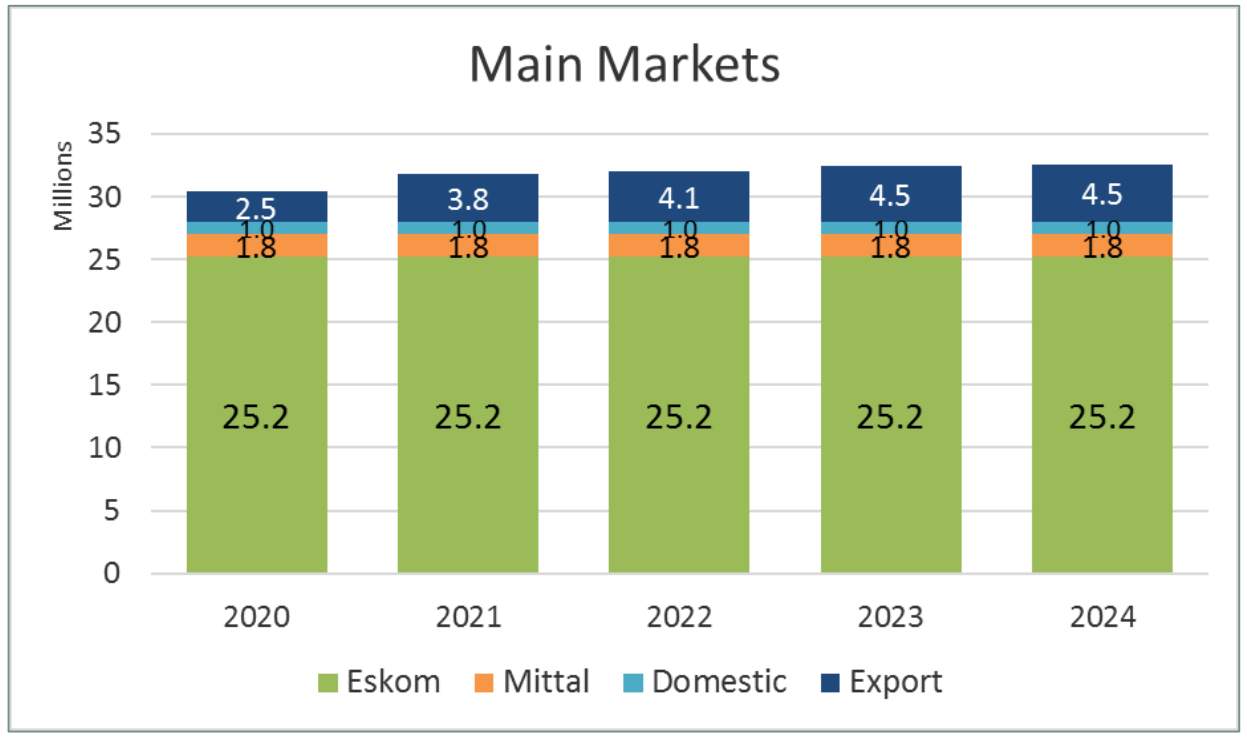


	Capacity	Equipment	Dispatch
Power Station Coal	1Mt	5 Stacking 4 Reclaiming	Conveyor Matimba @ 14.6Mtpa Medupi @ 11Mtpa
Metallurgical Coal	60kt	3 Stacking 1 Reclaiming	Rail 1.5Mt
SSCC and Export	120kt	2 Stacking 2 Reclaiming	Rail Exports 1.5Mtpa Domestic 1.6Mtpa

Grootegeluk | Plant Complex at a Glance

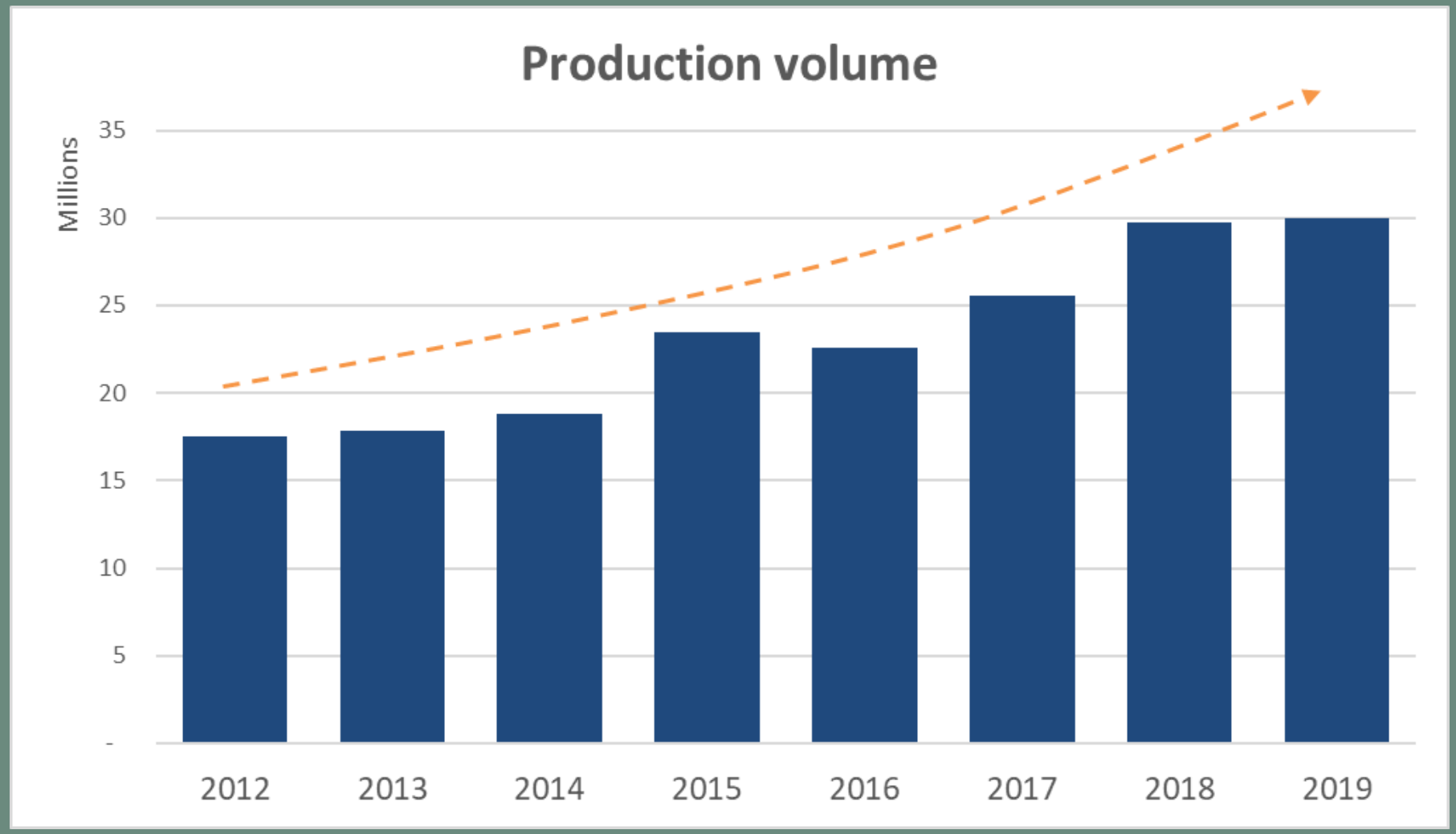
Nr of Export trains required **14**





Grootegeluk | **Growth & Improvement**

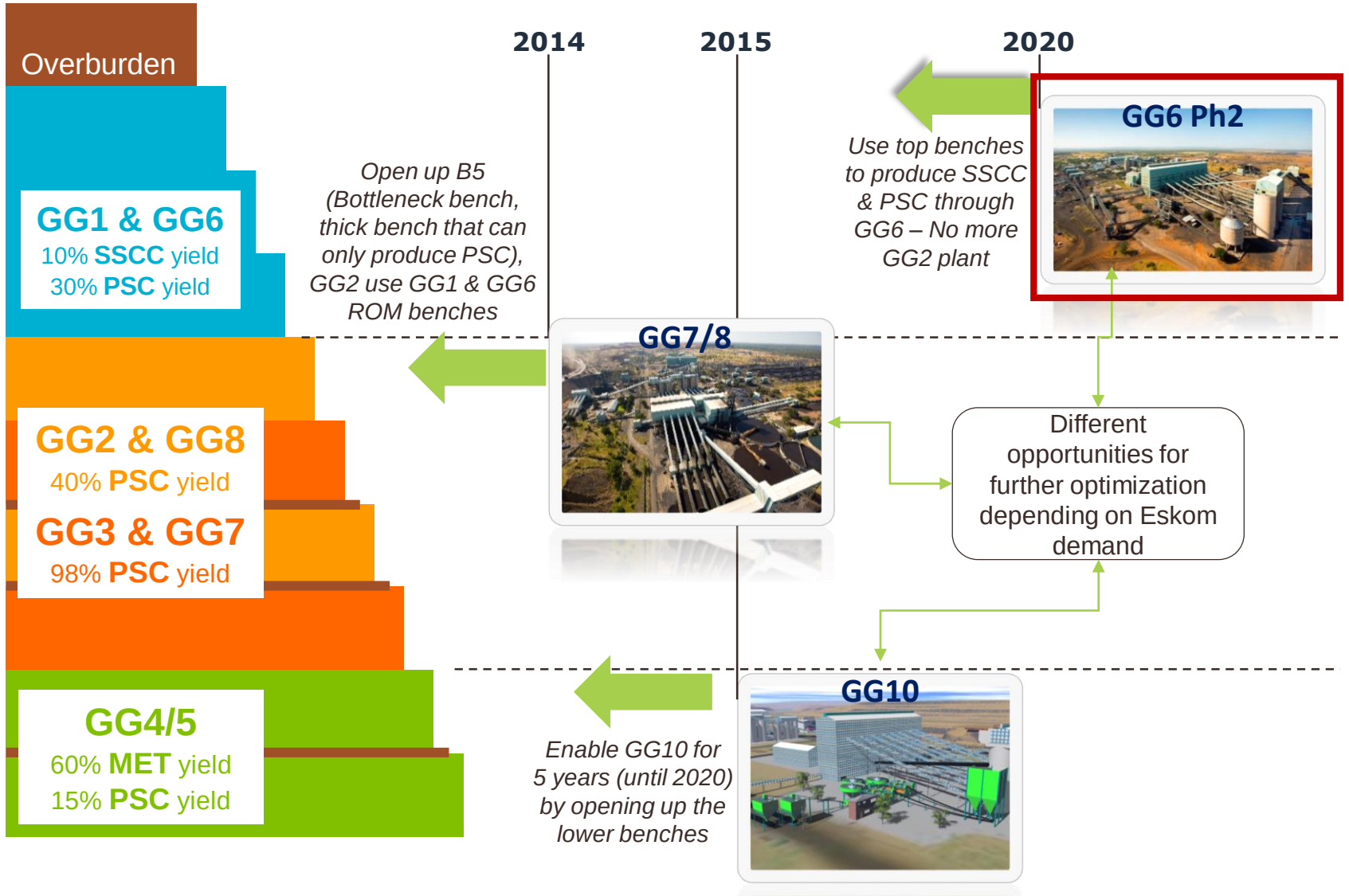
2012 – 2018 6.7% Y-o-Y Improvement



RESULT OF FOCUSED APPROACH TOWARDS GROWTH & IMPROVEMENT

Grootegeluk | Capital Projects

Key interdependency: Pit liberation



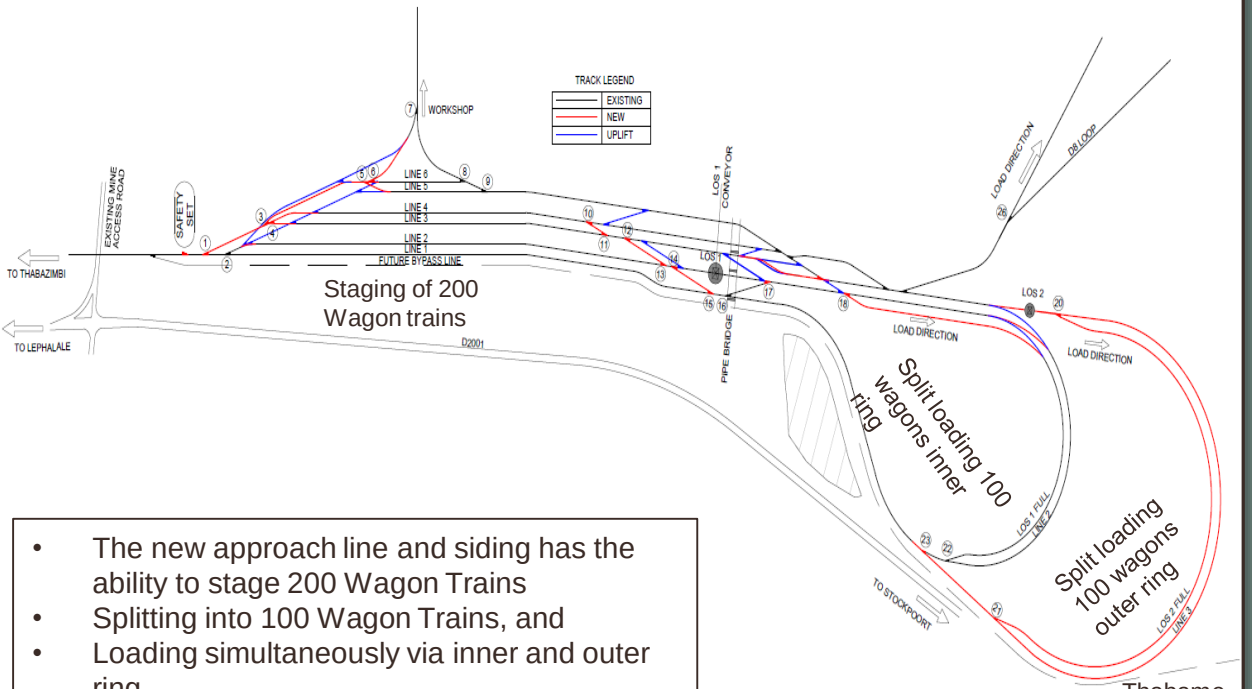
Flexibility & Enabling Projects

- Replacement and Expansion of Primary **Mining Capacity**
- Improvement in **maintenance facilities** to accommodate the increasing mining fleet
- Implementation of **Semi-Mobile in-pit crushing** technology to reduce traveling distances, cycle times and cost
- Commissioning of **GG10** to enhance product flexibility and to capitalize on pit liberation and enhance flexibility
- Commissioning of the upper and lower in-pit **discard backfill** systems to reduce operating costs and long term environmental liabilities
- Commissioning of the **cyclic operated slurry ponds** to increase product reclamation rate and re-use of water
- **RLOS** to enable train transport of PSC

Grootegeluk | Capital Projects

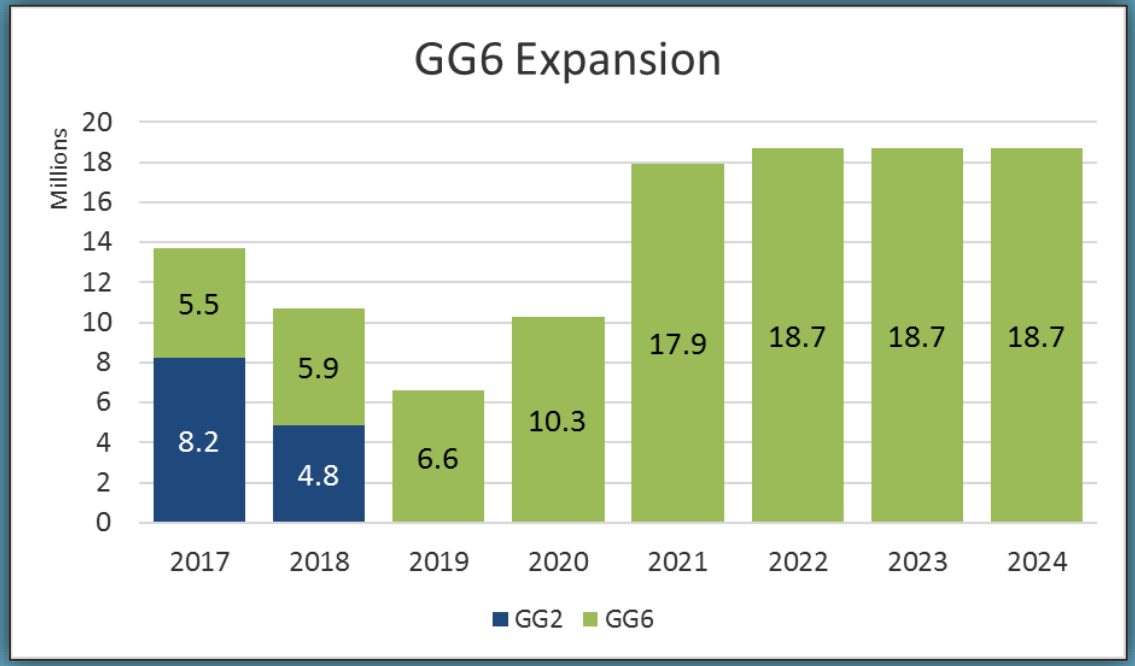
RLOS Commission – Nov 2019

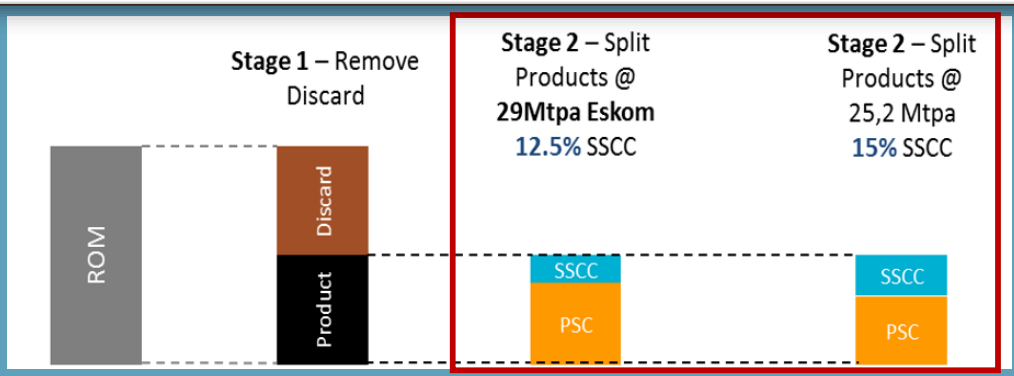
The new **RLOS** is currently under construction and has been detail designed for inclusion of future expansions including a future link for Thabametsi



- The new approach line and siding has the ability to stage 200 Wagon Trains
- Splitting into 100 Wagon Trains, and
- Loading simultaneously via inner and outer ring
- Allows 200 Wagon loading within 4 Hours

GG6 expansion Commission – Sep 2020

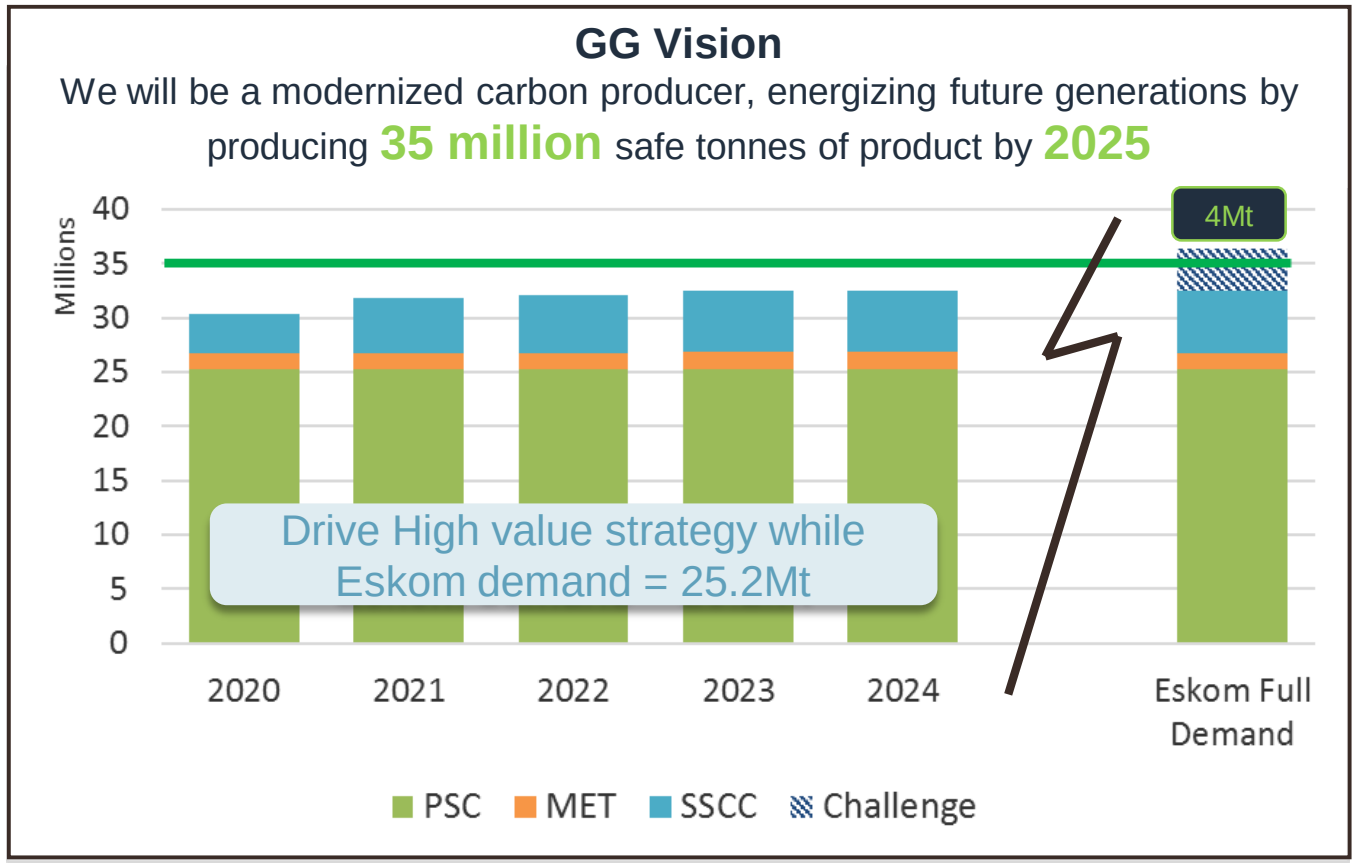




Grootegeluk | Where to Next?

Improvement drive to increase plant capacity (supported by the value chain), to enable GG to deliver the **additional 4Mt PSC** demand to Eskom **without stopping** the **high value strategy**

36.3Mt



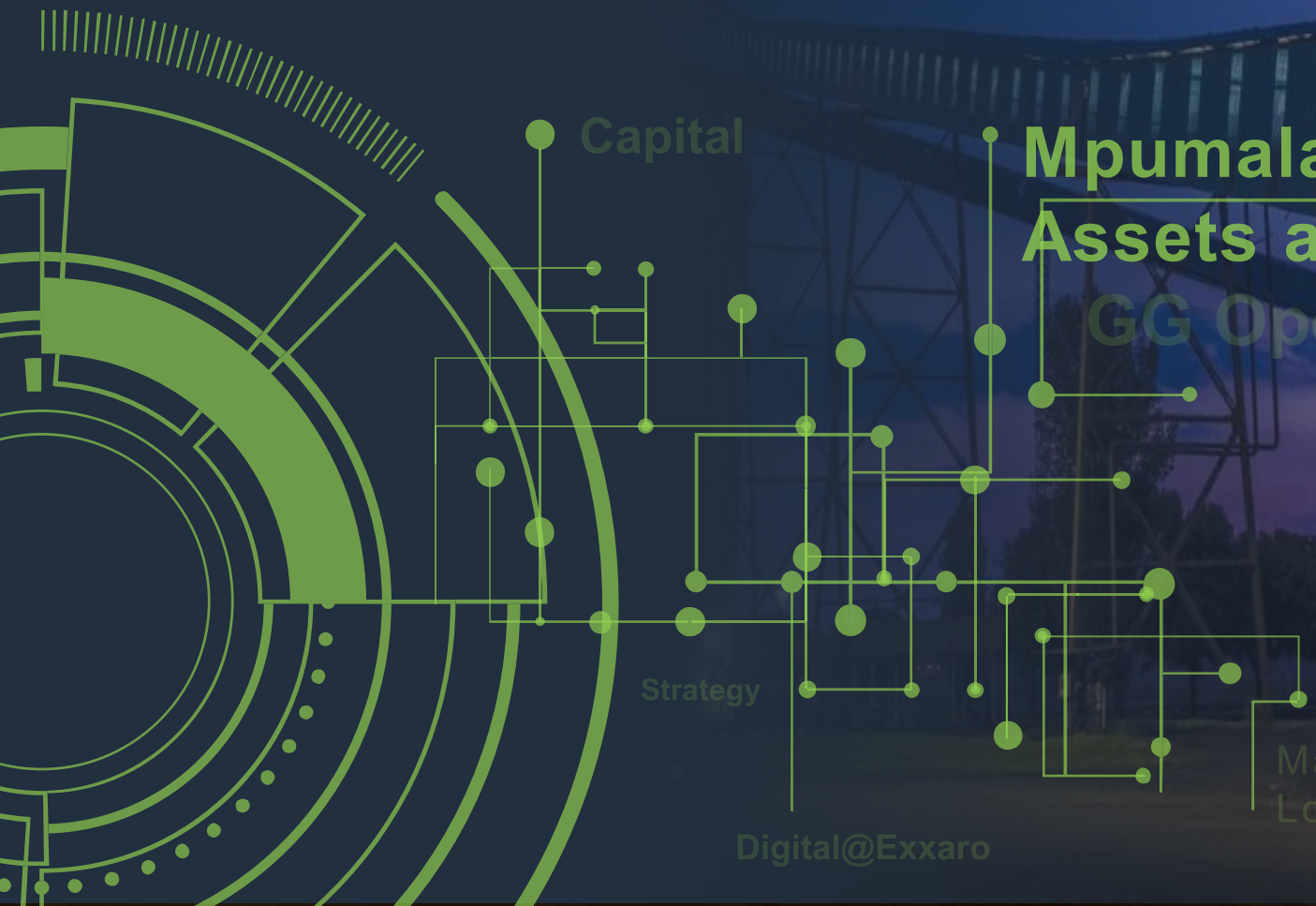
Improvement drive:

A **Digital drive,** on top of the normal Operational Excellence drive, that will add value through:

- Integrated Operations Centre (IOC)
- Data visibility for better decision making
- Enabling the frontline to work more efficient & effective
- APC and automation
- Predictive maintenance

Mpumalanga

Bram van Stelten | **General Manager, Mpumalanga Area**



Mpumalanga Operations
Assets and Volumes

GG Operations

Marketing and Logistics

exxaro

MPU | Portfolio Overview

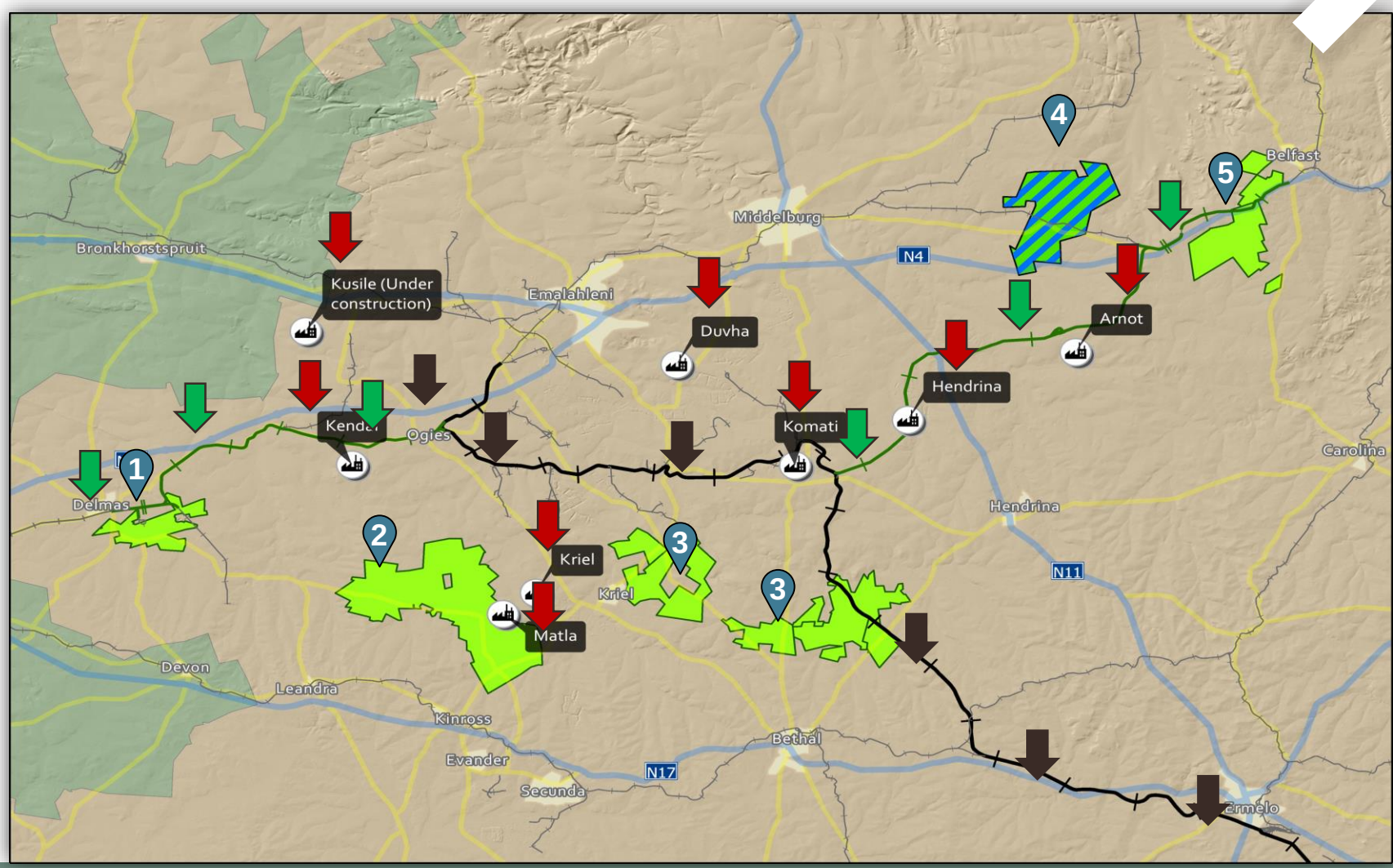
1. Leeuwpan
2. Matla
3. ECC Complex
4. Mafube (50% ownership)
5. Belfast Coal
6. Ferro Alloys

MPU | Well Positioned For Flexibility

RBCT Coal line to Richards Bay harbour

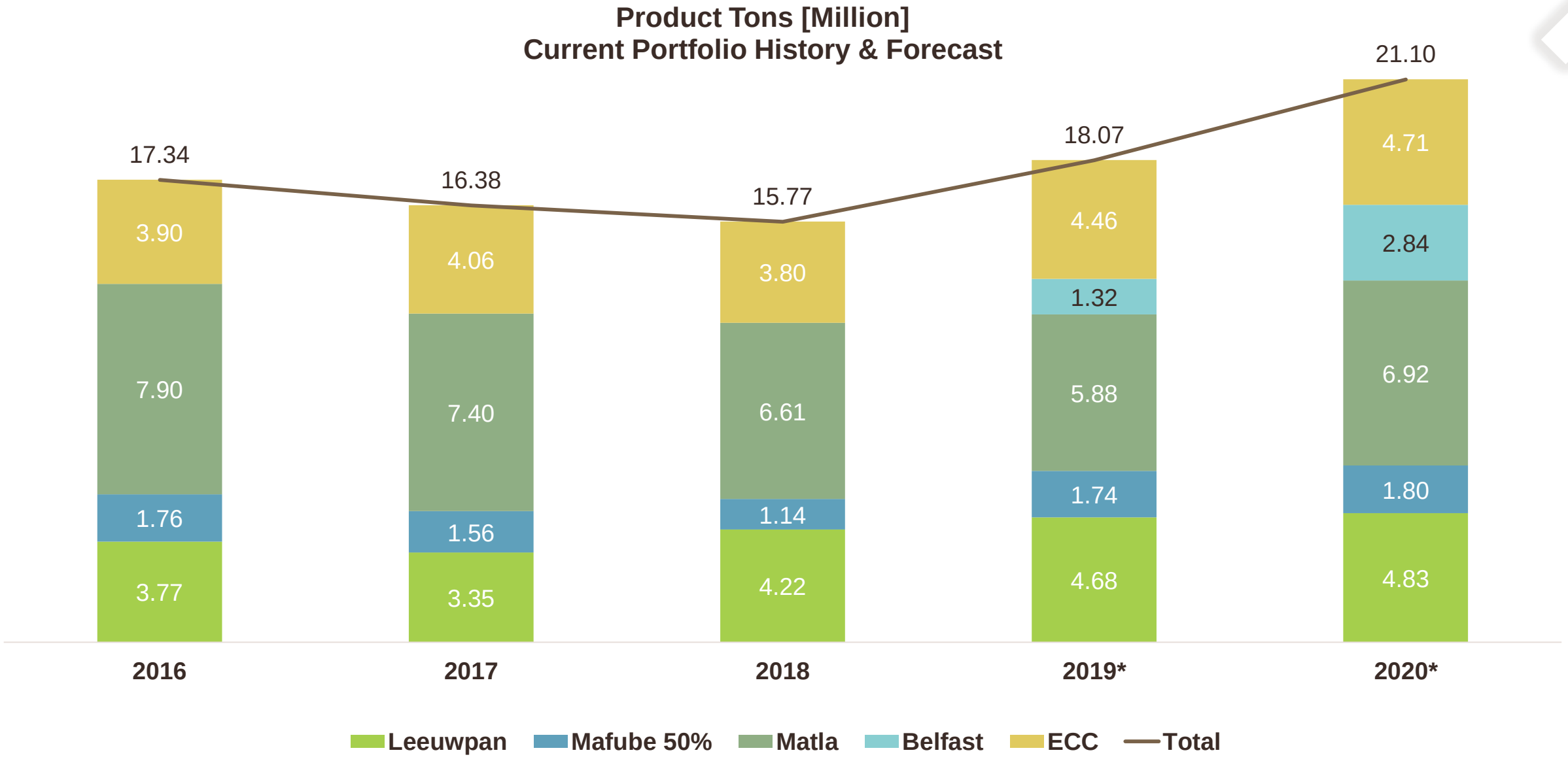
Coal line connecting Belfast, LPN and Mafube to RBCT Coal line

Well positioned near Eskom Power Stations



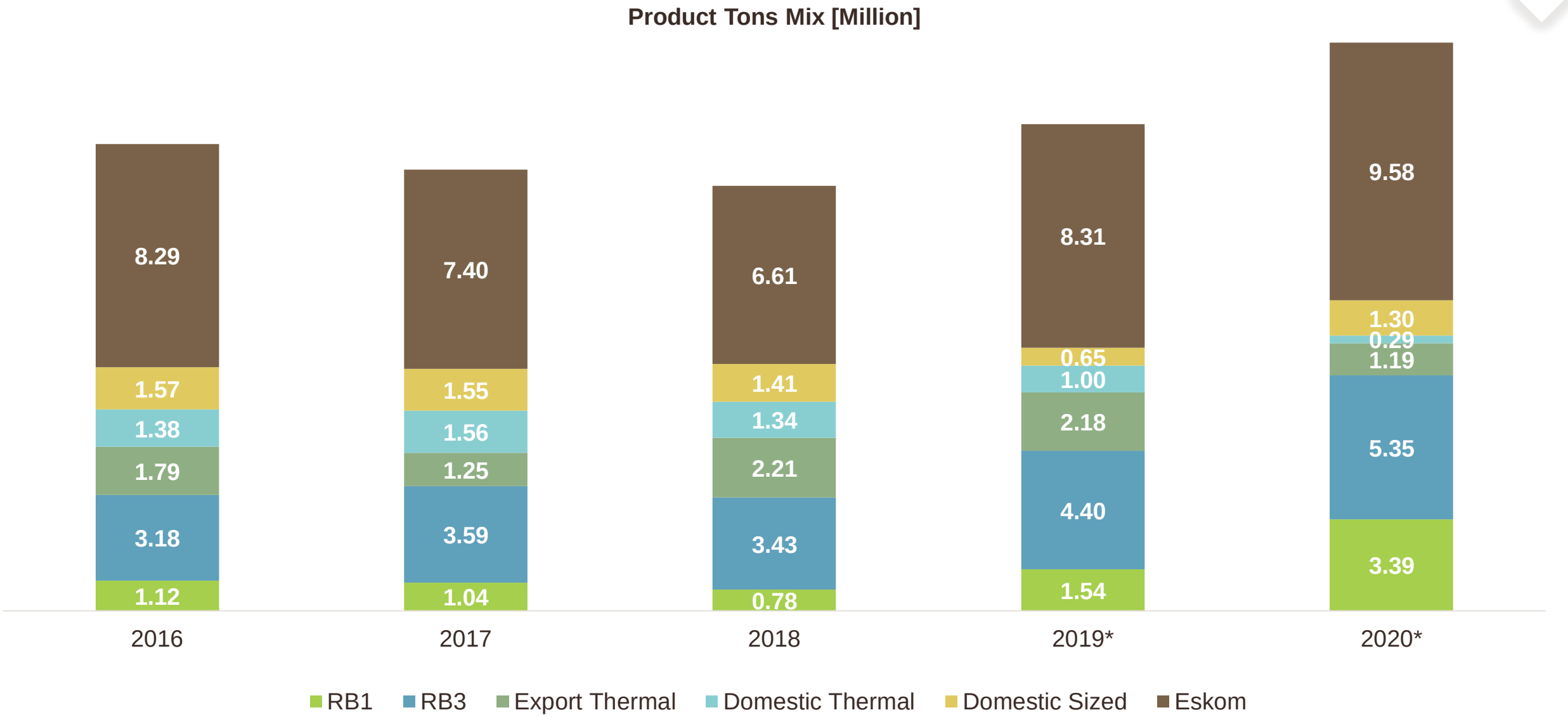
1. Leeuwpan
2. Matla
3. ECC Complex
4. Mafube (50% ownership)
5. Belfast Coal
6. Ferro Alloys

MPU | Volume Outlook



*Base on latest internal forecast (Actual figures can vary by ±5%)

MPU | Volume Mix Outlook



*Excludes ECC Tumelo Buy-Ins

MPU | Mine Overview

1. Leeuwpan
2. Matla
3. ECC Complex
4. Mafube (50% ownership)
5. Belfast Coal
6. Ferro Alloys

MPU | Leeuwpan Overview

① Leeuwpan

Open Cast Mining

3 Processing Plants, 2 x DMS, 1 x C&S

Multi Product, Domestic and Export

Rail and Road Transport

2.9 m^3 / Ton Strip ratio

6.9 Million Ton ROM per annum

68% Yield

Opportunities

- Optimization of plants
- Eskom long term off-take
- Surrounding reserves

Challenges

- Overburden contractor performance. Increase in OVB required over LOM
- Yields (weathering and geological conditions)

Underground Mining

10.1 Million Ton ROM per annum (CSA)

1 Destoning / Sizing Plant

Single Product, Eskom

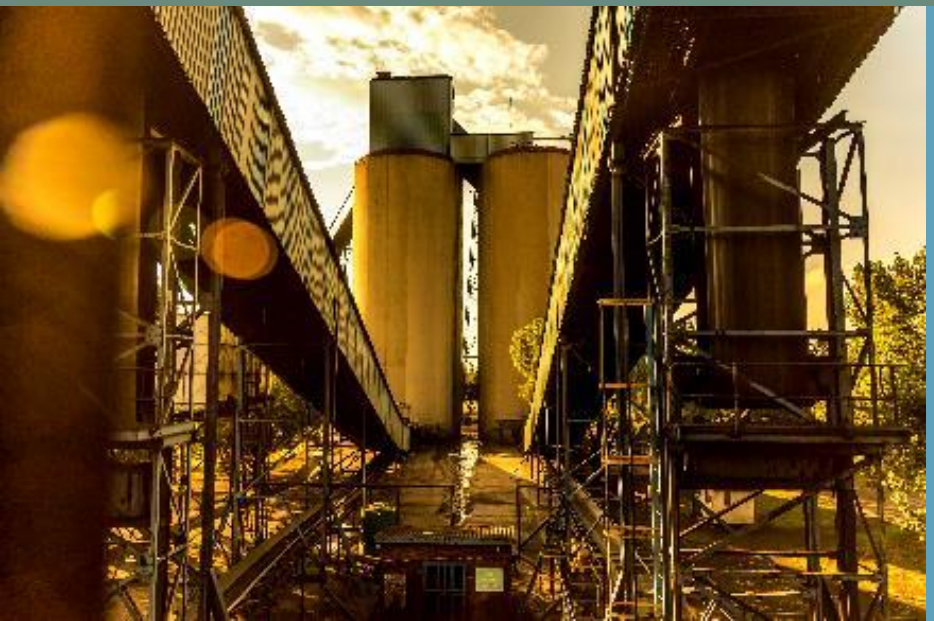
100% Yield

Conveyor

3 Operations, Mine 1, Mine 2 and Mine 3, LOM 20 Years

Opportunities

- Shortwall Additional Reserves
- New CSA Agreement



Challenges

- Project Execution
- Pillar Extraction (Purchase of surface rights)

MPU | ECC Overview

③ ECC Complex

4 Operations, DCMW LOM 21 Years,
DCME LOM 12 Years, FZOS LOM 19 Years, FZON LOM 5 Years

Dorstfontein

- Open Cast (DCME) & Underground (DCMW & DCME) Mining
- 2 x DMS Plants
- Multi Product Domestic and Export
- Rail and Road Transport

Forzando

- Underground Mining (FZOS & FZON)
- 1 Shared DMS Plant
- Multi Product Domestic and Export
- Rail and Road Transport

- 4.0 m^3 / Ton Strip ratio (DCME)
- 6.3 Million Ton ROM per annum
- 71% Yield

Opportunities

- Eskom long term off-take
- Surrounding reserves (Dorstfontein and Forzando)
- Dorstfontein West 4 Seam

Challenges

- Forzando Yields (weathering and geological conditions)

MPU | Mafube Overview

④ Mafube

Open Cast Mining

1 x DMS Plants

Multi Product Export

Rail Transport

3.0 m³ / Ton Strip ratio

2.6 Million Ton ROM (50%) per annum

67% Yield

Opportunities

- Eskom Middlings off take
- Early Ramp Up
- C&S Volume
- Mafube Expansion

Challenges

- Equipment strategy execution - Delivery
- Front End Crusher

Open Cast Mining

3.9 m^3 / Ton Strip ratio

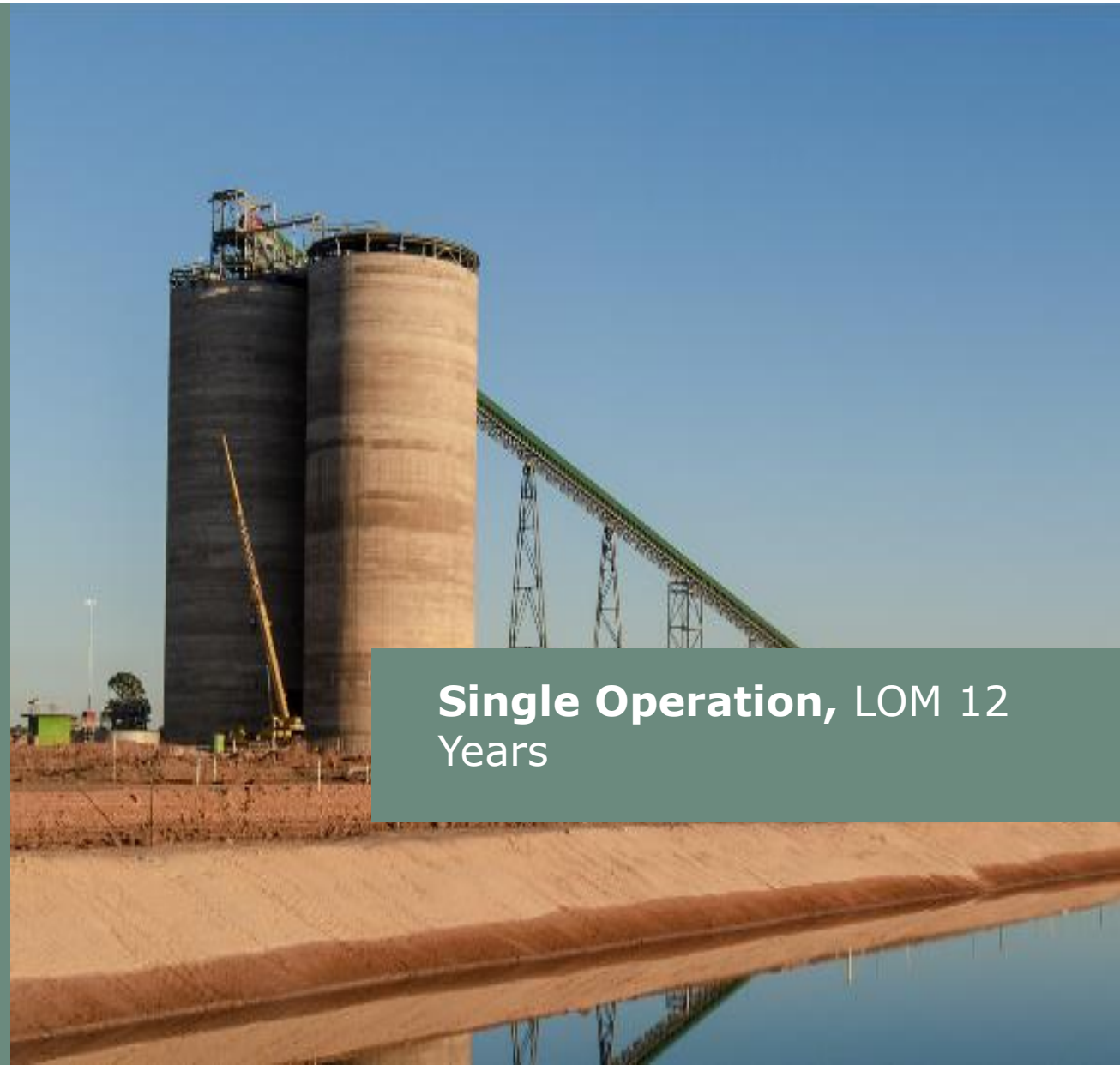
1 x DMS Plants

3.2 Million Ton ROM per annum

Multi Product Export and Domestic

90% Yield

Rail and Road Transport



Single Operation, LOM 12 Years

Belfast Opportunities

- Early Ramp Up
- C&S Volumes
- Belfast Expansion

Single Operation

1 x FerroAlloys Plant

Multi Product Domestic

Road Transport

MPU | Summary

- Well positioned assets to serve the domestic and export market
- Product flexibility from a market to resource perspective
- Volume and value growth opportunities in near term through Mafube and Belfast expansion
- Continued focus across all operations on cost, volume and mix to optimise value

Digital@Exxaro Journey

Pleasure Mnisi | **Manager, Business Optimization**

Our program is geared towards reducing cost

3%

TOP 5

Lean5

Operational Excellence

1. Constraint focused
2. Cost Reduction
3. Productivity Improvement
4. Risk Mitigation
5. Yield/Product Optimisation

1. Bias for action
2. Performance management
3. Ownership of OE by line
4. Incentive system
5. Span of control

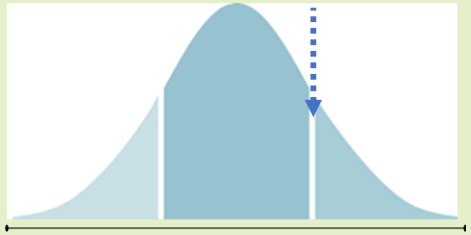
5%

digital exxaro 5

Startup Way | Innovation | eXcellence

1. VCV through IoC
2. M2R Optimisation through ME
3. Empowered Workforce
4. Developing our D@E Core Competencies
5. Resource & Mining Innovation Magnet

P75



1. Performance Benchmarking
2. Reducing variation
3. Increasing consistency
4. Review of P75 Targets Yearly
5. Achieving 2023 Strategy

Productivity
Improvement
Cost Reduction
Safety Always

Business Optimisation System Implementation across at all operations (MOS)

Consolidation & Banking of Coal 2023 Strategy

"XXX" – Value Consolidation

Our goal is to achieve
25% productivity
improvement
using
digitalisation and
innovation.

Strategic Themes

Achieved

VISUALISATION OF THE VALUE CHAIN

INTEGRATED OPERATIONS CENTRE

EMBED AND IMPROVE

Focus

DATA SCIENCE

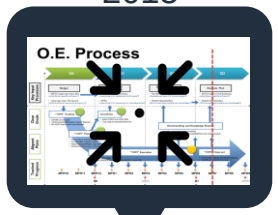
PREDICTIVE MAINTENANCE AND RELIABILITY

MRM INTEGRATION

AUTOMATION

Digital@Exxaro | Journey and Learnings

2015



Process driven
Top 5
"3%"

"25%"
Disrupt + Improve OE

Change
Digital Transformation
Minimize "Wasted" Work
Outward Thinking
Value Creation
Customer Centric
Digital Transformation is a transformation of work, enabled by "digitization"

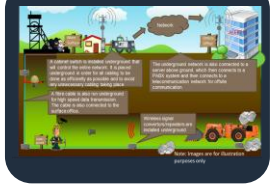
Digital Revolution

Proof of Concepts (POC's)

2016

Quick Wins

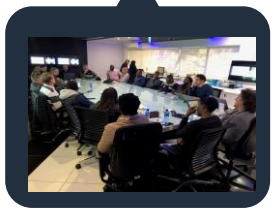
2017



Infrastructure Analysis

Digital@Exxaro Launch

2018



Steercoms

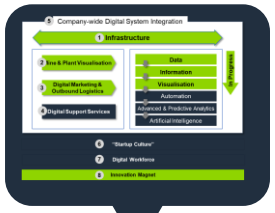
Data Science

2019

Innovation Magnet: Co-developing solutions with suppliers

Digital@Exxaro | Successes

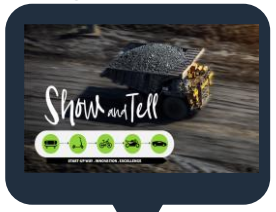
D@E Framework



"Point-solutions"

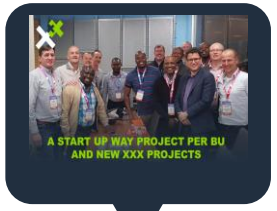
- ✓ Ops Eye
- ✓ Lionwatch
- ✓ Highpoint
- ✓ Nerve - Centre
- ✓ Matla IOC

"Show & Tell"
Duplicating Successful MVP`s

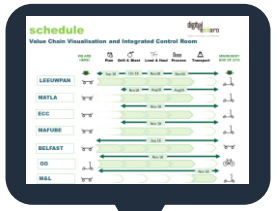


M&L

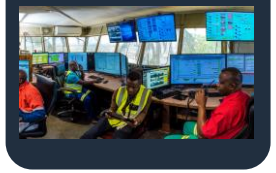
Start Up "Culture"



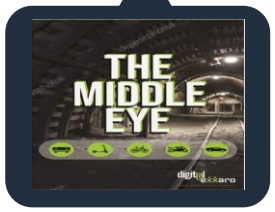
Whats Next?



- ✓ AVA
- ✓ Road Conditions System
- ✓ Route-slip
- ✓ Underground Skype
- ✓ Live CM data
- ✓ Belfast OR live dashboards



IOC: MVP`s



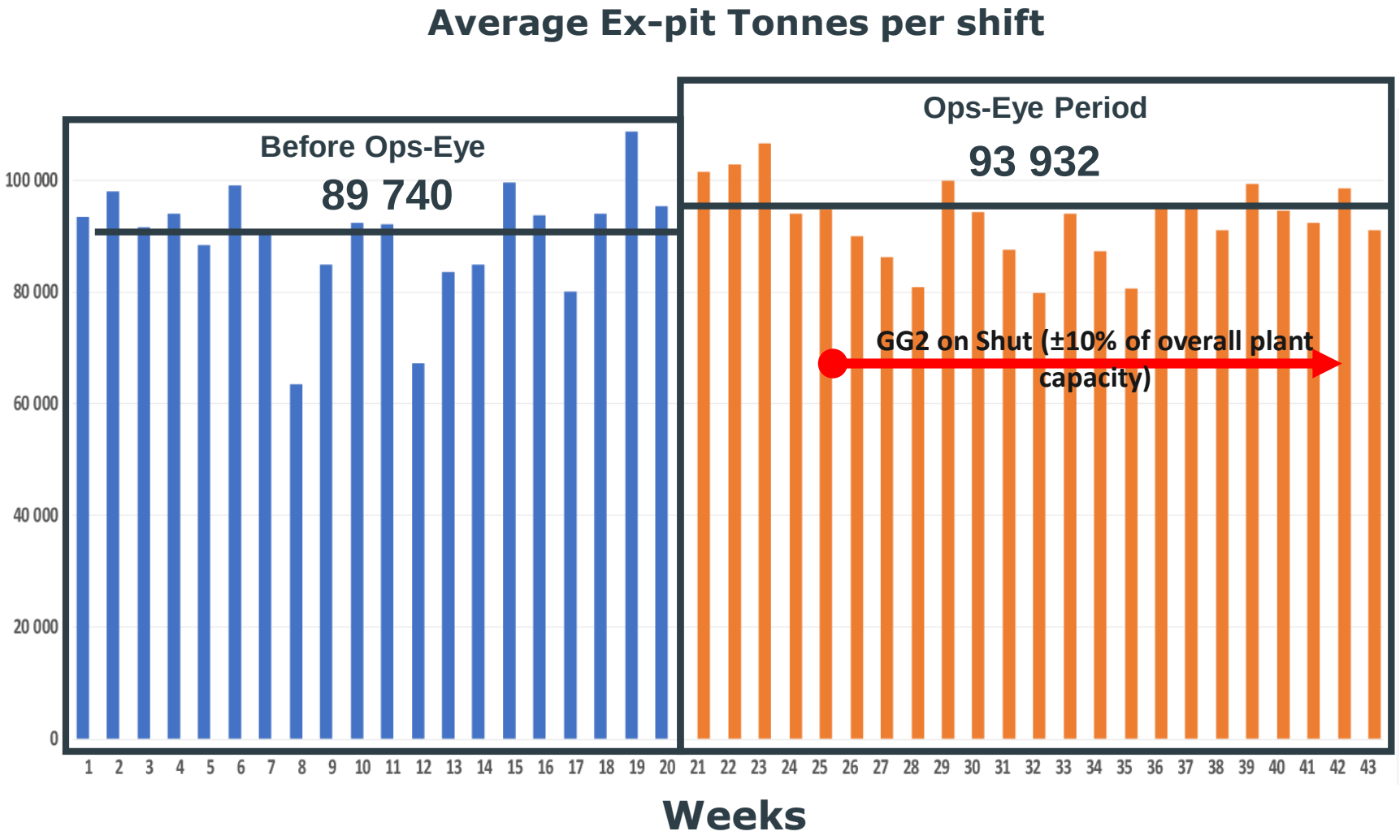
Middle - Eye MVP

- ✓ Customer & logistics portal
- ✓ RBCT Integration

Results

5% Production ↑
from all BU's
D@E

Digital@Exxaro | GG IOC (ops eye) pilot 2018

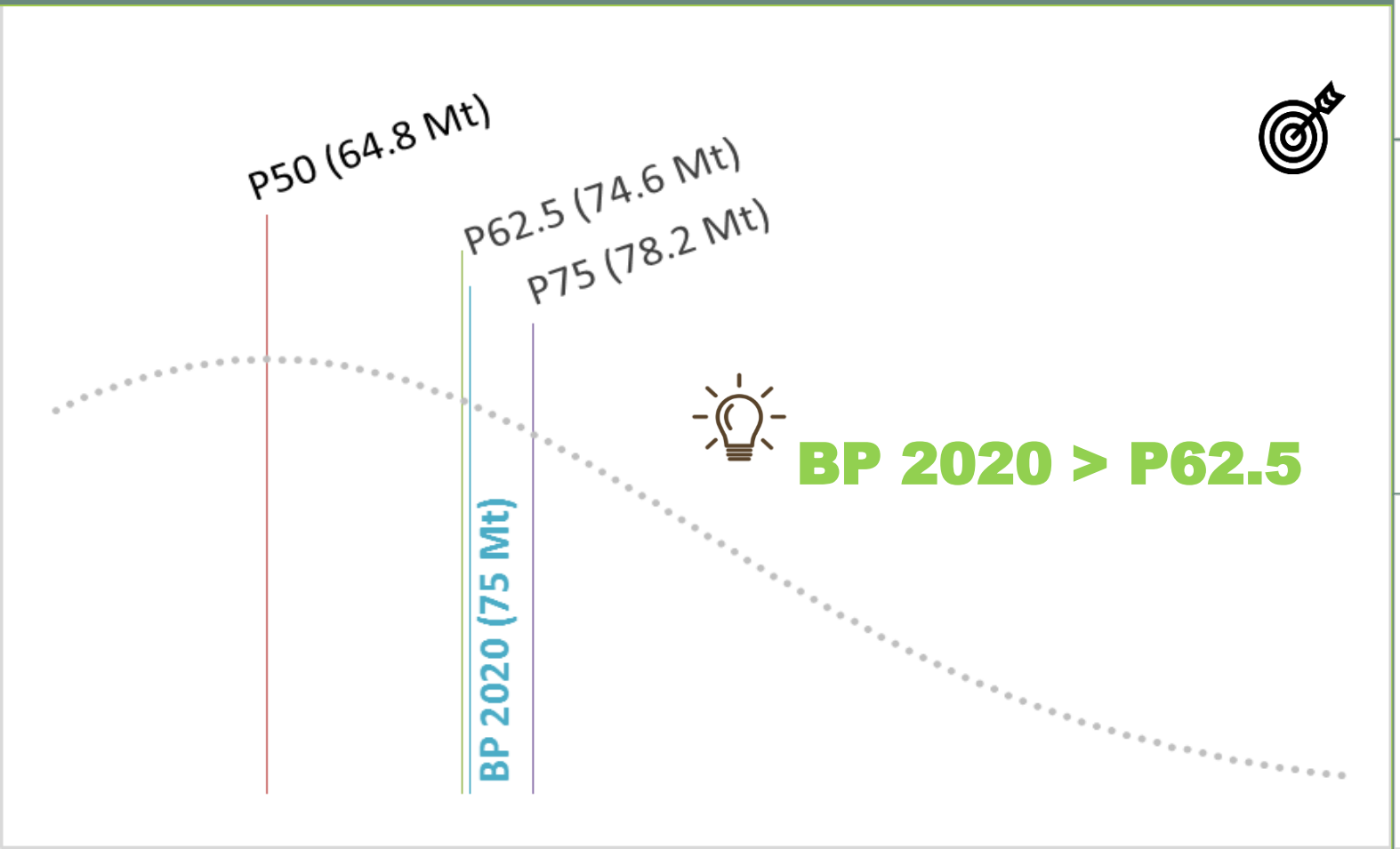


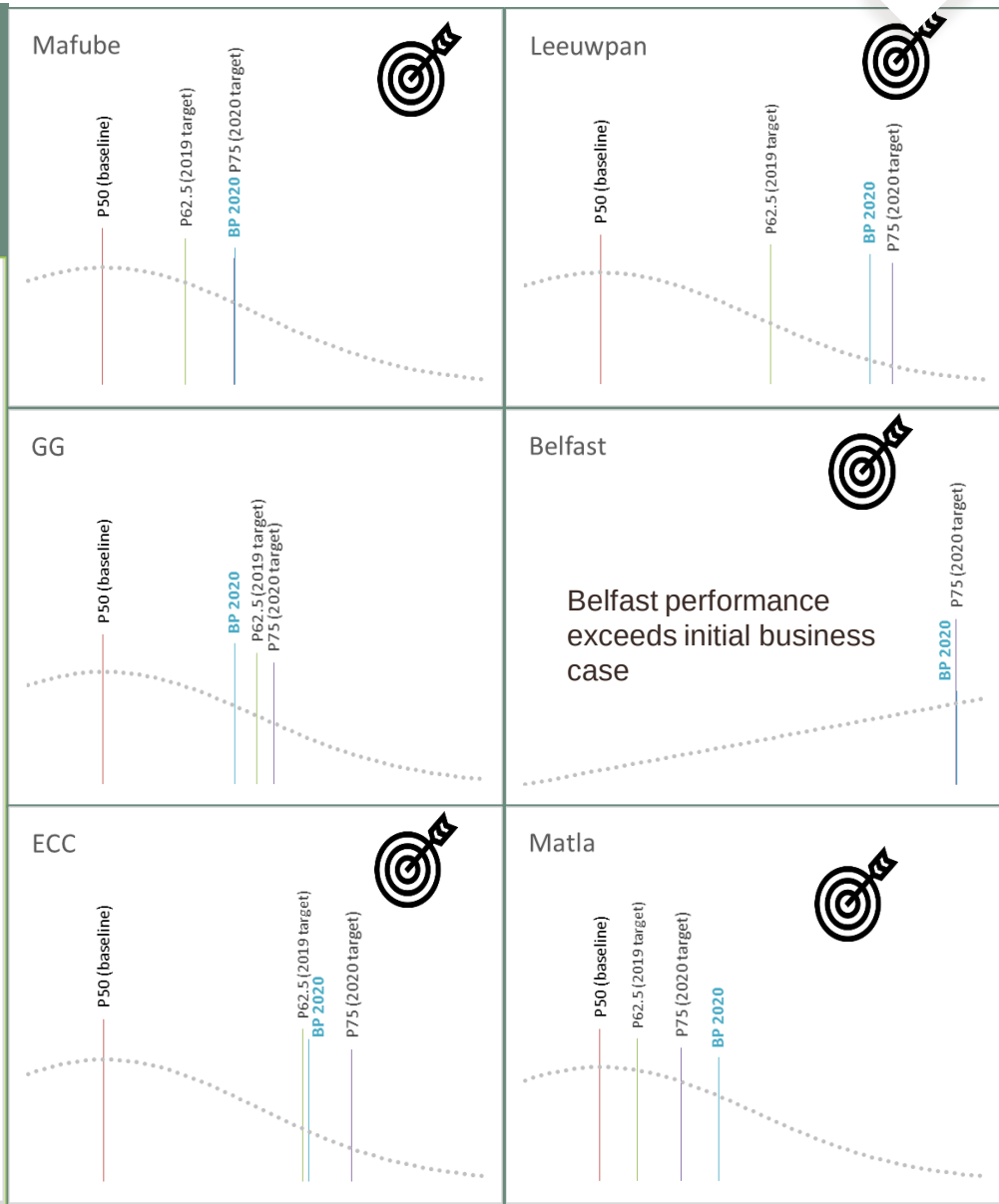
5%

Improvement

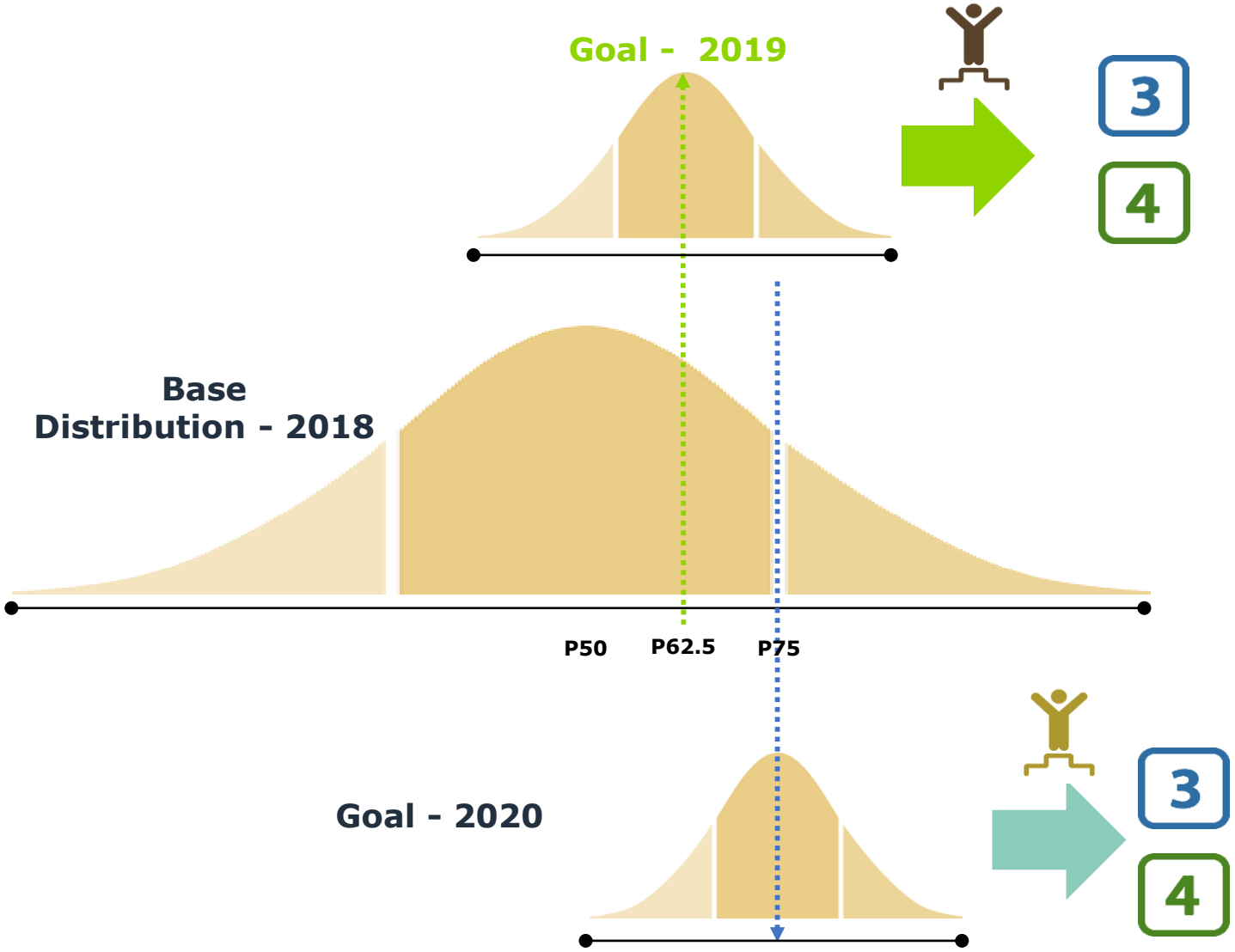
Digital@Exxaro | Productivity at higher levels (P75)

- We have integrated and embedded benefits into our business plans.
- Despite geological inflation Exxaro will achieve its improved P75 targets by 2023





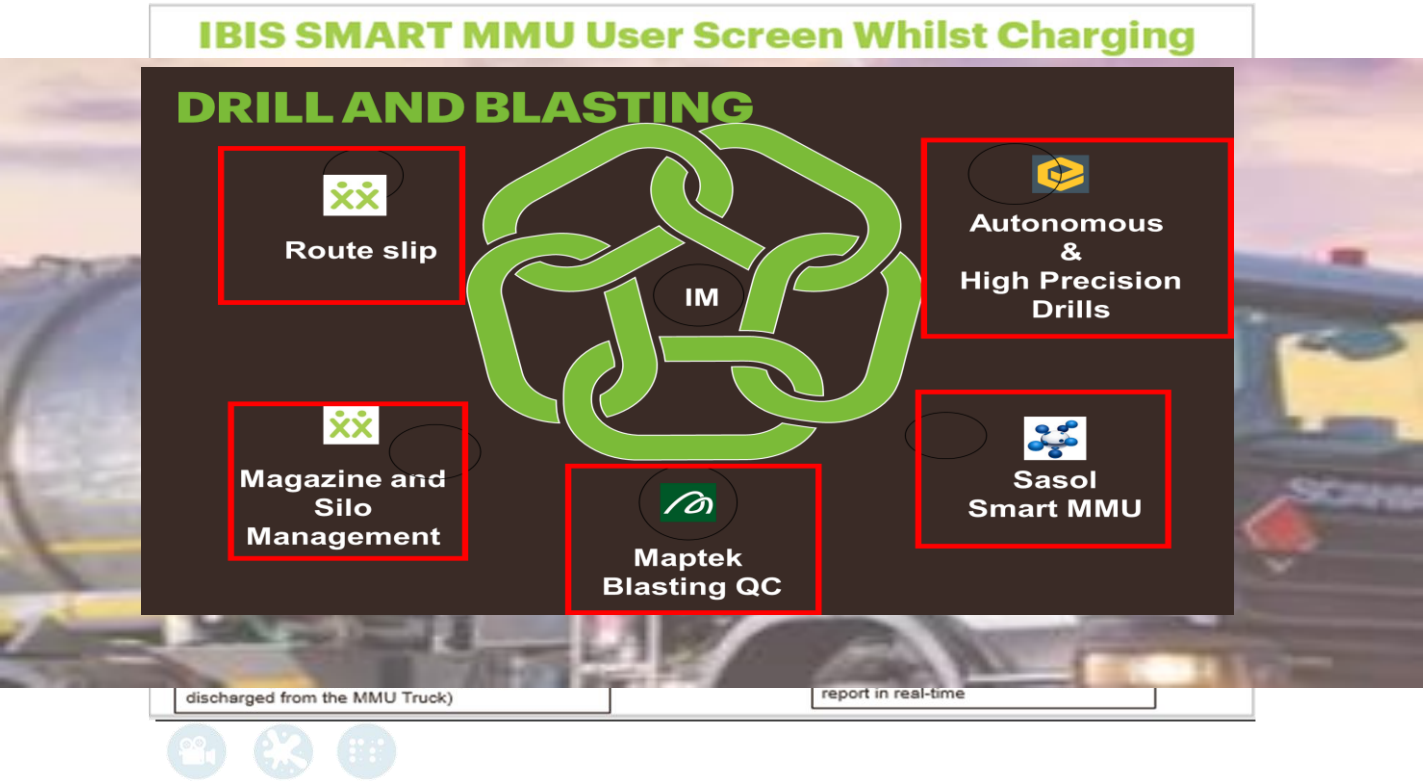
Targets linked to Leadership Performance Management

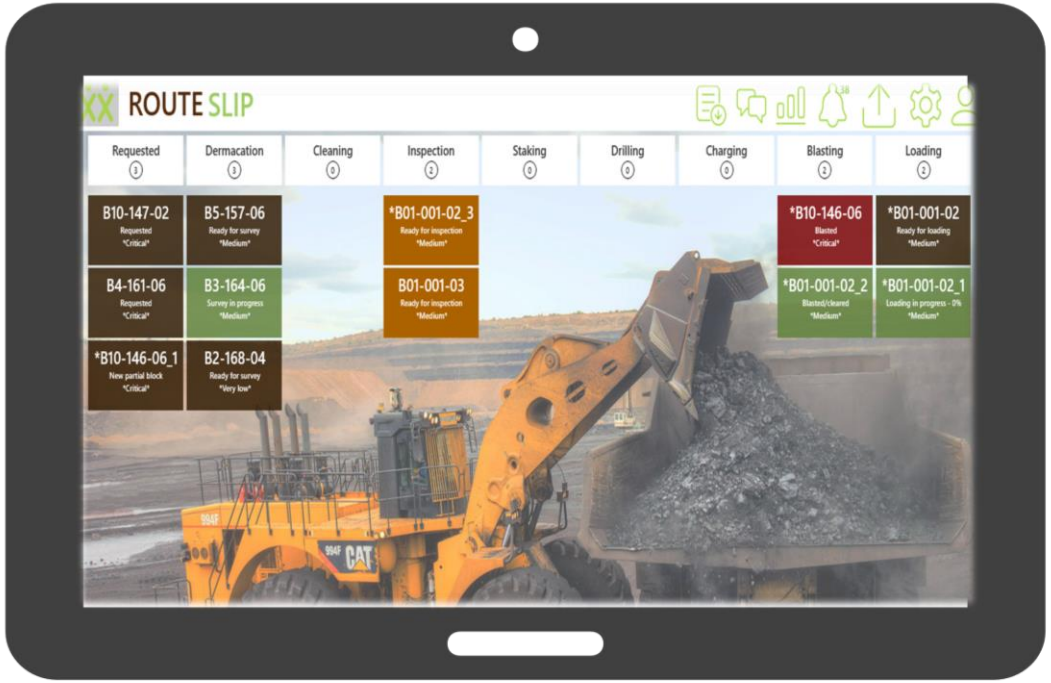


Visualisation Of The Value Chain

Digital@Exxaro | Underground Visualisation

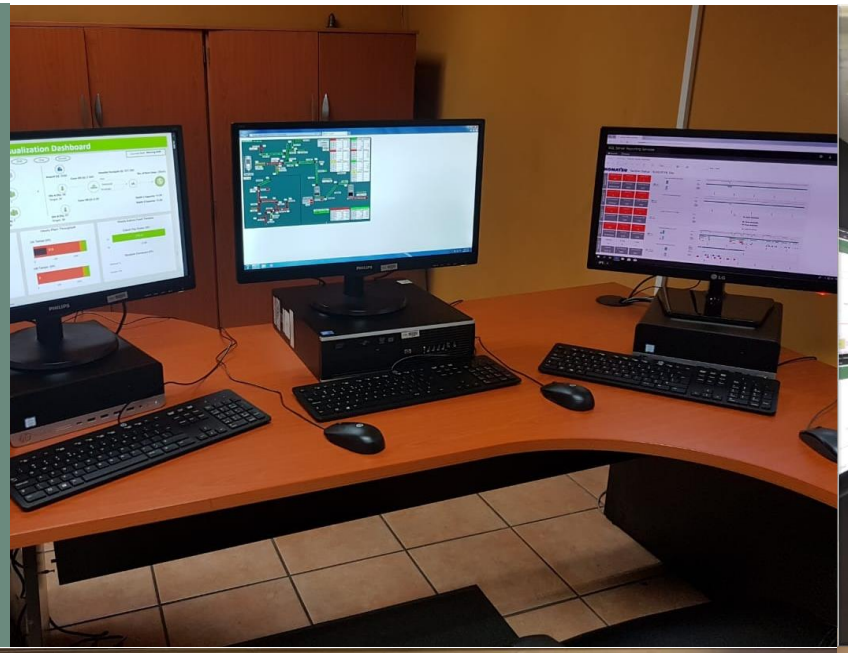
Co-creating Digital Assets With Our OEMs

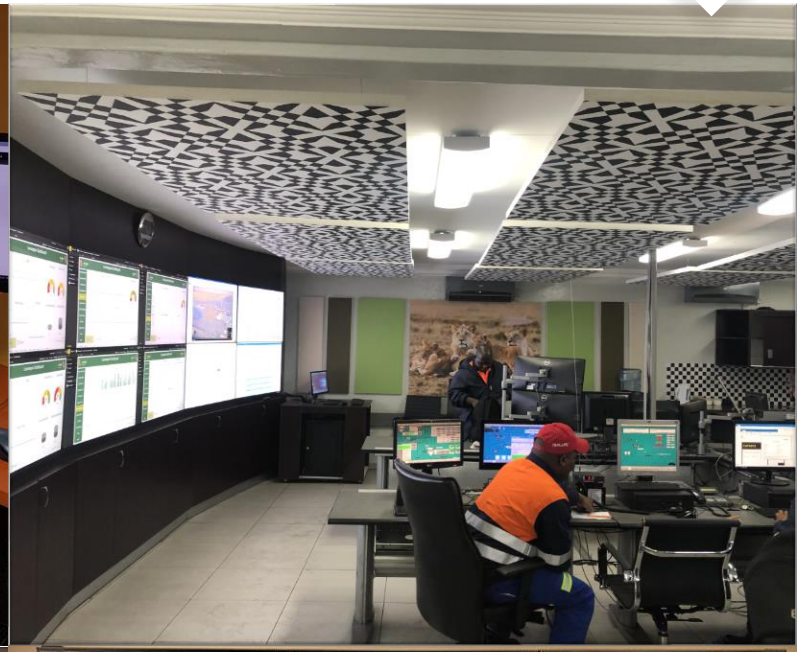




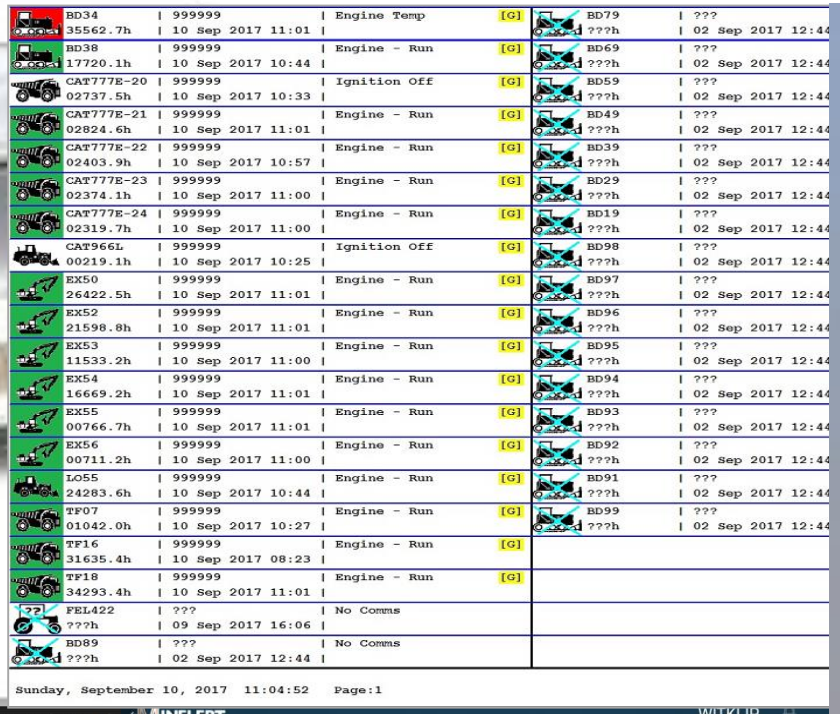
IOC's are implemented across all the business units

- To drive real time decision making.
- Drive Market to resource optimisation across the value chain.
- Removing silos





Digital@Exxaro | **Predictive Maintenance And Reliability (Digital Twin)**



BD34	35562.7h	999999 10 Sep 2017 11:01	Engine Temp	[G]	BD79	??? 02 Sep 2017 12:44
BD38	17720.1h	999999 10 Sep 2017 10:44	Engine - Run	[G]	BD69	??? 02 Sep 2017 12:44
CAT777E-20	02737.5h	999999 10 Sep 2017 10:33	Ignition Off	[G]	BD59	??? 02 Sep 2017 12:44
CAT777E-21	02824.6h	999999 10 Sep 2017 11:01	Engine - Run	[G]	BD49	??? 02 Sep 2017 12:44
CAT777E-22	02403.9h	999999 10 Sep 2017 10:57	Engine - Run	[G]	BD39	??? 02 Sep 2017 12:44
CAT777E-23	02374.1h	999999 10 Sep 2017 11:00	Engine - Run	[G]	BD29	??? 02 Sep 2017 12:44
CAT777E-24	02319.7h	999999 10 Sep 2017 11:00	Engine - Run	[G]	BD19	??? 02 Sep 2017 12:44
CAT966L	00219.1h	999999 10 Sep 2017 10:25	Ignition Off	[G]	BD98	??? 02 Sep 2017 12:44
EX50	26422.5h	999999 10 Sep 2017 11:01	Engine - Run	[G]	BD97	??? 02 Sep 2017 12:44
EX52	21598.8h	999999 10 Sep 2017 11:01	Engine - Run	[G]	BD96	??? 02 Sep 2017 12:44
EX53	11533.2h	999999 10 Sep 2017 11:00	Engine - Run	[G]	BD95	??? 02 Sep 2017 12:44
EX54	16669.2h	999999 10 Sep 2017 11:01	Engine - Run	[G]	BD94	??? 02 Sep 2017 12:44
EX55	00766.7h	999999 10 Sep 2017 11:01	Engine - Run	[G]	BD93	??? 02 Sep 2017 12:44
EX56	00711.2h	999999 10 Sep 2017 11:00	Engine - Run	[G]	BD92	??? 02 Sep 2017 12:44
LO55	24283.6h	999999 10 Sep 2017 10:44	Engine - Run	[G]	BD91	??? 02 Sep 2017 12:44
TF07	01042.0h	999999 10 Sep 2017 10:27	Engine - Run	[G]	BD99	??? 02 Sep 2017 12:44
TF16	31635.4h	999999 10 Sep 2017 08:23	Engine - Run	[G]		
TF18	34293.4h	999999 10 Sep 2017 11:01	Engine - Run	[G]		
FEL422	???h	??? 09 Sep 2017 16:06	No Comms			
BD89	???h	??? 02 Sep 2017 12:44	No Comms			

Sunday, September 10, 2017 11:04:52 Page:1

Data Science Analytics: can be run and visualised via smart devices, virtual reality and augmented reality (AR) to provide operational intelligence.

Digital@Exxaro | **Automation**

1 We are **targeting high value easy and affordable to integrate** parts of our value chain to convert to autonomous operations. i.e Dozers, Plants, Drills,etc.

2 Managing and **Integrating autonomous operations and processes in a mine** is complex as these operate sub-optimally alongside manually driven processes

3 Although we are constantly evolving our culture, this remains a very **labour sensitive** issue.

Results: (*prelim value, still doing time studies checking if data in the system is correct*) **56m/hr** vs YTD of **45m/hr** for old drills

IP, Skills And Competitive Advantage

Governance Model

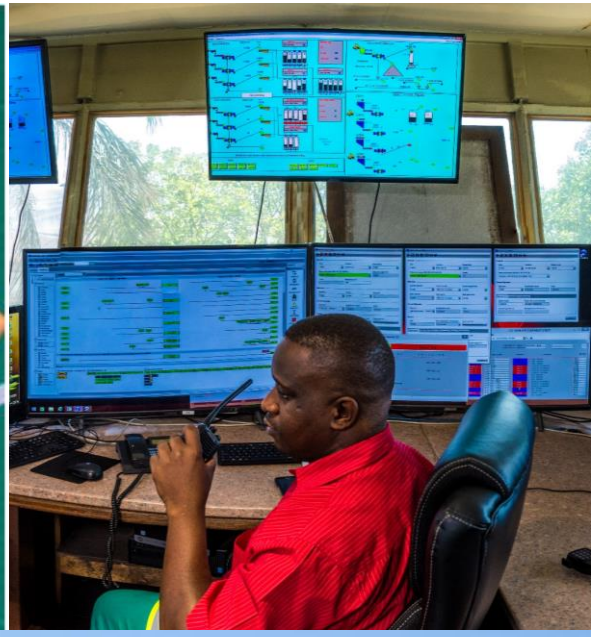
We **understand the real operational problems** that miners are facing, therefore are **able to detail the user requirements for solution development**

We have a **vast amount of technical IP in mining** and therefore we are **co-developing custom solutions with the technology providers**

We have operational assets and therefore we are **able to offer pilot testing** in **a real operational environment** that technology companies desperately need.

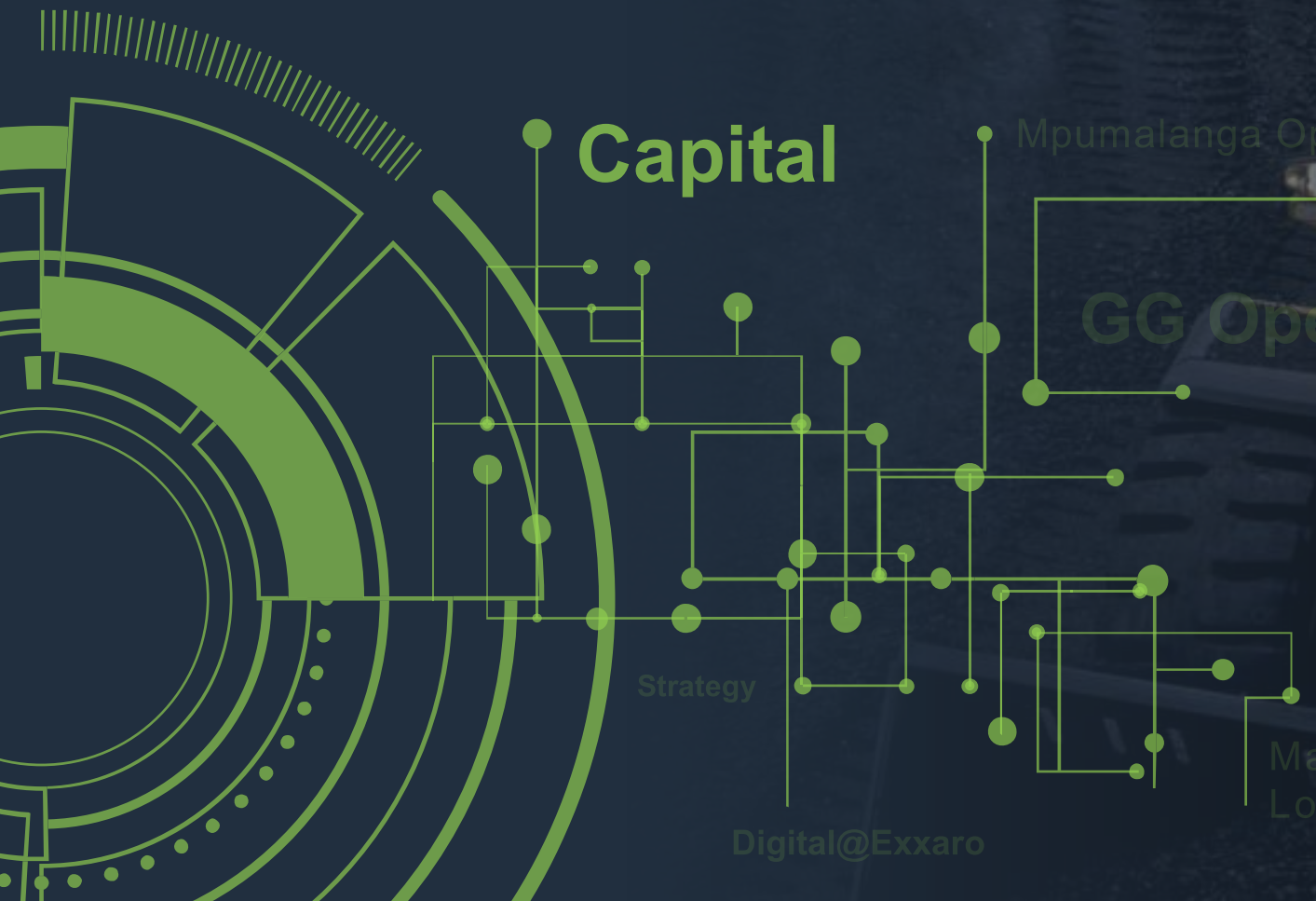
We are **upskilling our workforce** to be able to manage in a data driven organization and systems (e.g. through the IOC`s and data science)

Digital@Exxaro | Culture Drive to Entrench Adoption



Capital

Mellis Walker | **Group Manager, Financial Performance**

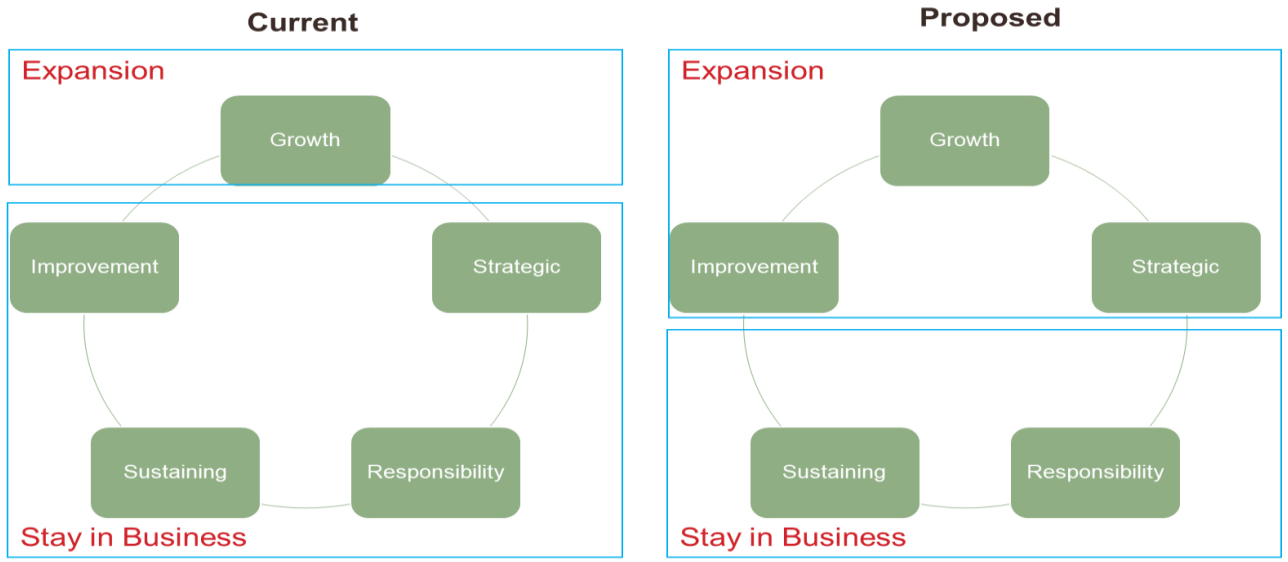


Coal | Capital Excellence –Delivering On The Promise

SIB Process

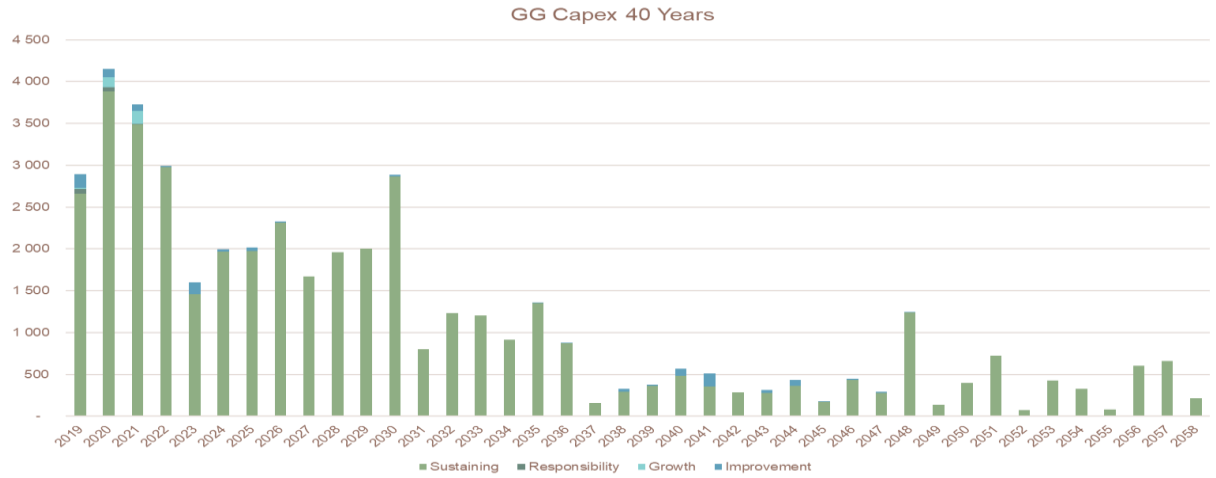
- Redefine expansion and SIB capex
- Business unit Life-of-mine (LOM) view for Sustaining Capex (SIB)
- Microsoft Projects online system (POL) implemented.
- All projects are registered and managed on POL.
- All projects reviewed to:
  - Ensure project descriptions describe the problem and not the solution
  - Confirm the business case
  - Confirm forecasted capital
- Early value capex impact on the forecasted capital estimates being assessed.

Redefine Expansion and Stay in Business capex



Coal | Capital Excellence – Delivering On The Promise

LOM planning for sustaining capex



Improved Forecasting accuracy

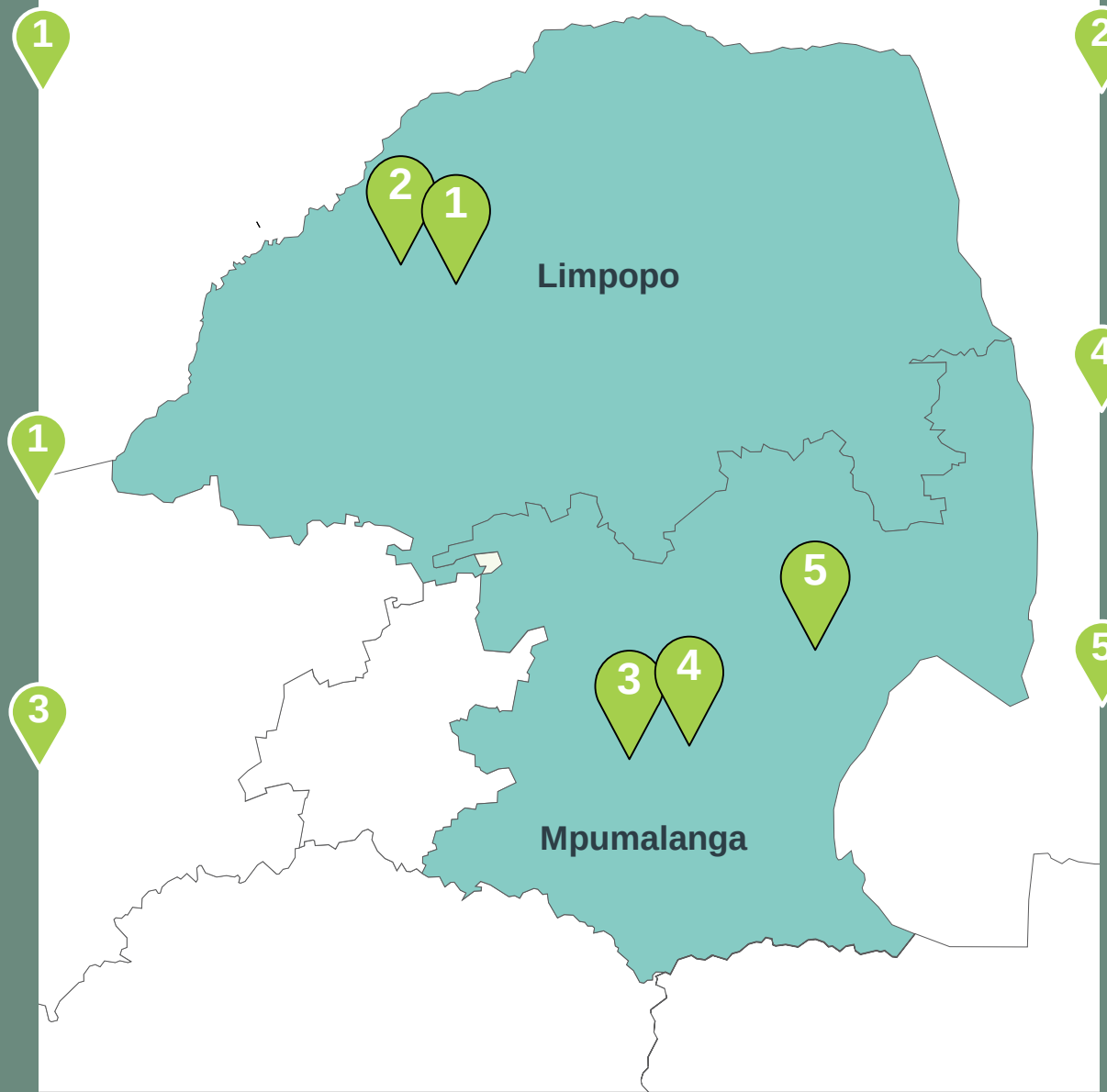
R'm	FY19 March Guidance	FY19 FD Pre-close Guidance	FY19 August Guidance	FY19 Variance % Aug vs FD
Sustaining	**2 689**	**2 543**	**2 396**	**-6**
Waterberg	1 683	1 692	1 688	0
Mpumalanga	962	807	667	-17
Other	44	44	41	
Expansion	**3 722**	**3 281**	**3 345**	**2**
Waterberg	2 004	1 160	1 194	3
Mpumalanga	1 718	2 121	2 151	1
Total	**6 411**	**5 824**	**5 741**	**-1**

Coal | Expansion Projects

GG6 Expansion
- Capex: R4.8bn
- Product: 1.7 – 2.7Mtpa of semi soft coking coal
- In construction
- 1st production: 2H19
- Full production FY21

GG Rapid Load Out Station
- Capex: R1.3bn
- Load capacity: 12Mtpa
- Commissioning in progress

Leeuwpan Lifex
- Capex: R0.6bn
- Product: 2.7Mtpa of thermal coal
- 1st production: 2H18
- Relocation Action Plan continues



Thabametsi Phase 1
- Capex: R3.2bn
- Product: 3.9Mtpa of thermal coal
- Awaiting notice to proceed

Matla Mine 1 Relocation
- Capex: R1.8bn
- Access to reserve at Mine 1
- Awaiting funding release

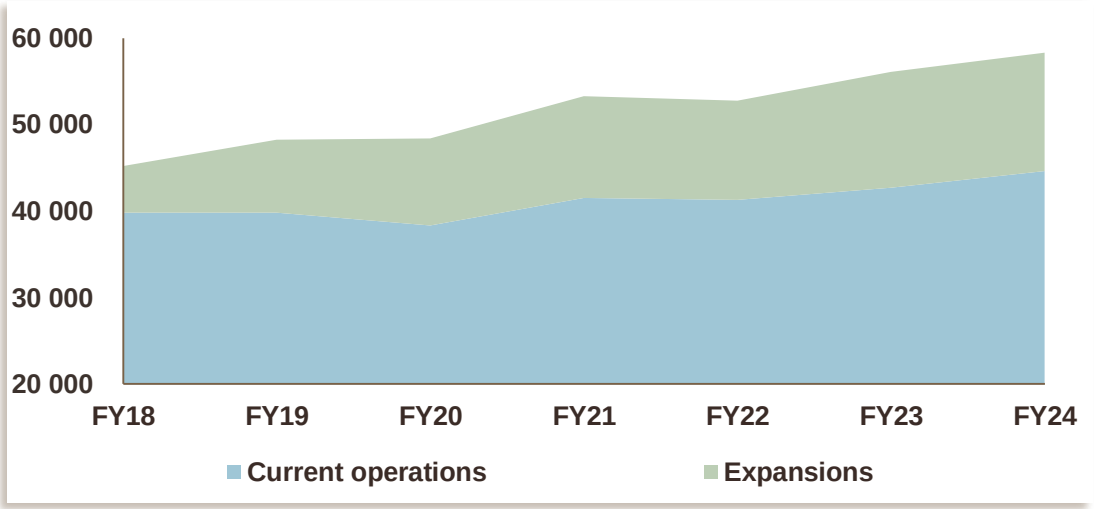
Belfast
- Capex: R3.3bn
- Product: 2.7Mtpa of thermal coal
- Construction and commissioning in progress
- 1st production: 1H19
- Full production: FY20

Coal | Value Creation From Expansion Projects

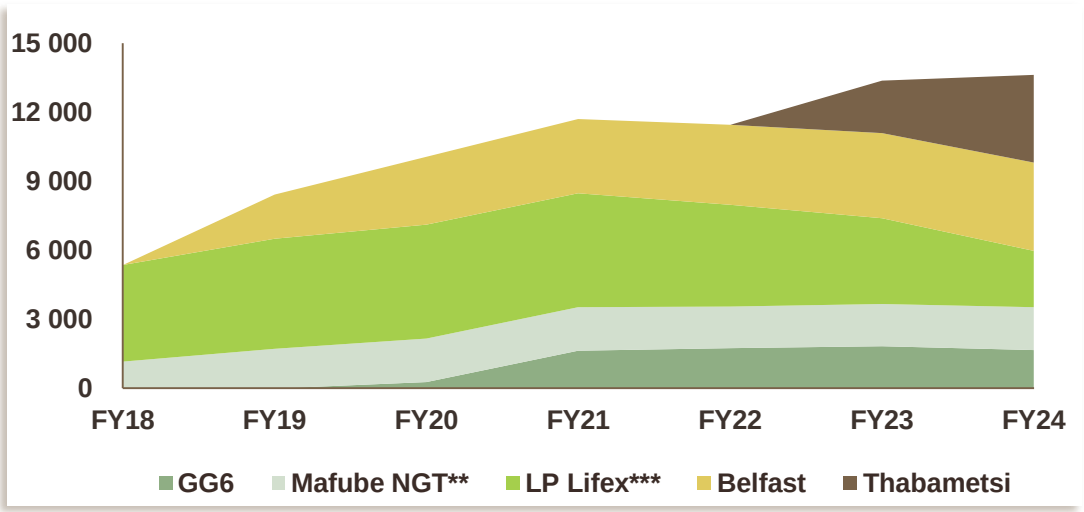
Delivering value

- Engaging with contractors experiencing performance issues
- Continued focus on methodologies, processes and controls
- Projects adding up to 13Mt/pa to increase sales volumes to 58Mtpa translating into R3.0bn - R3.5bn EBITDA per annum being added in steady state

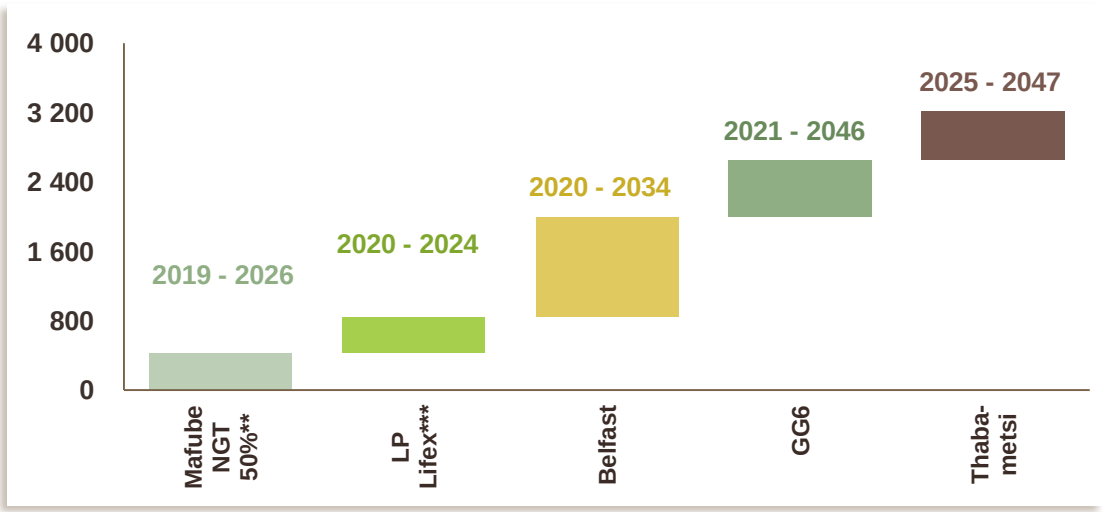
Total sales tonnes ('000 tonnes)



Sales tonnes from Expansion capital ('000 tonnes)



Steady state EBITDA contribution* (Rm)

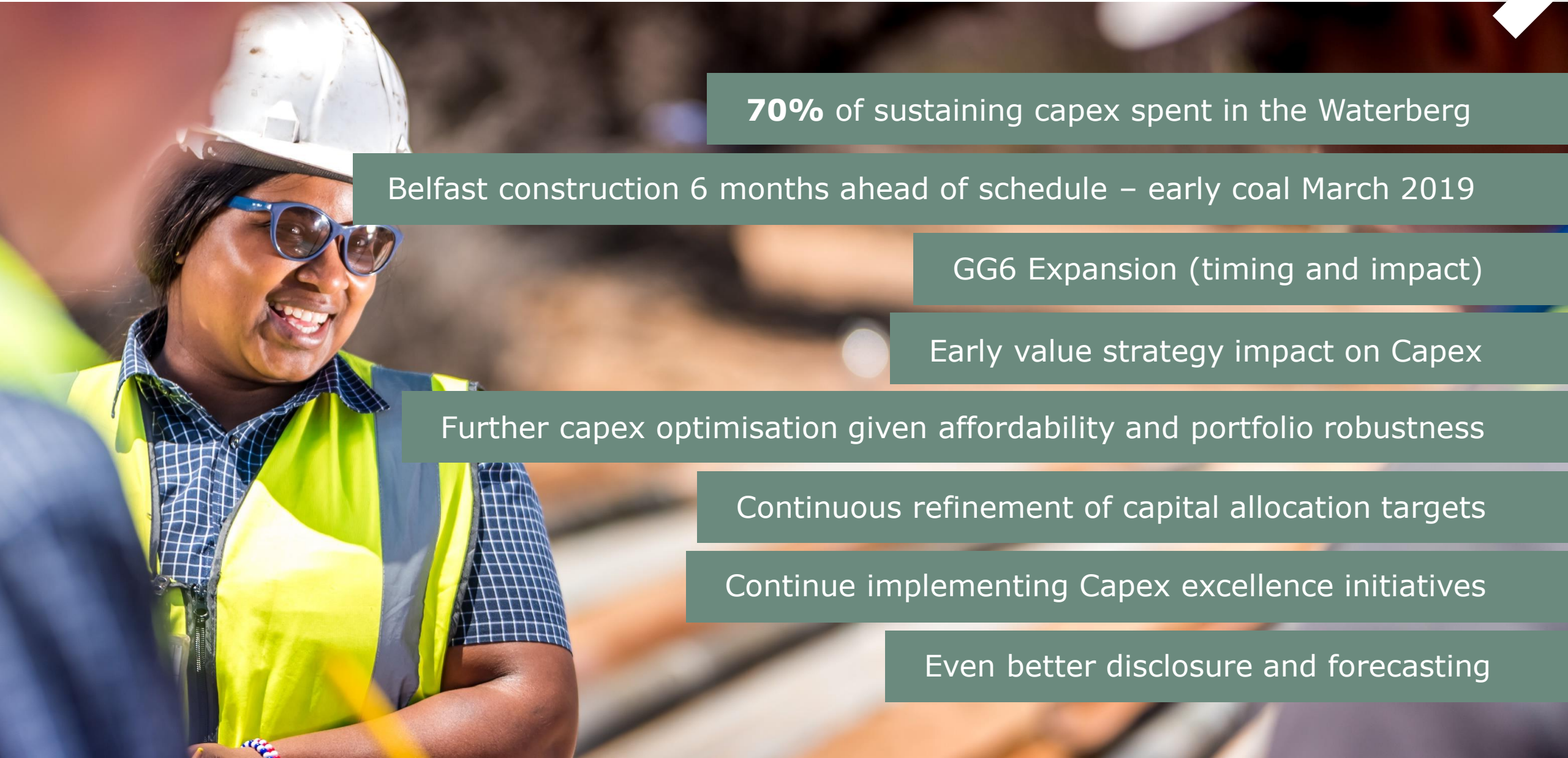


* FY19 real terms (Price US$75/tonne, Exchange rate R13.77/US$)

** Nooitgedacht is replacement

*** 70% of Leeuwpan Lifex is incremental

Coal | Capital Excellence: Conclusions/Priorities



70% of sustaining capex spent in the Waterberg

Belfast construction 6 months ahead of schedule – early coal March 2019

GG6 Expansion (timing and impact)

Early value strategy impact on Capex

Further capex optimisation given affordability and portfolio robustness

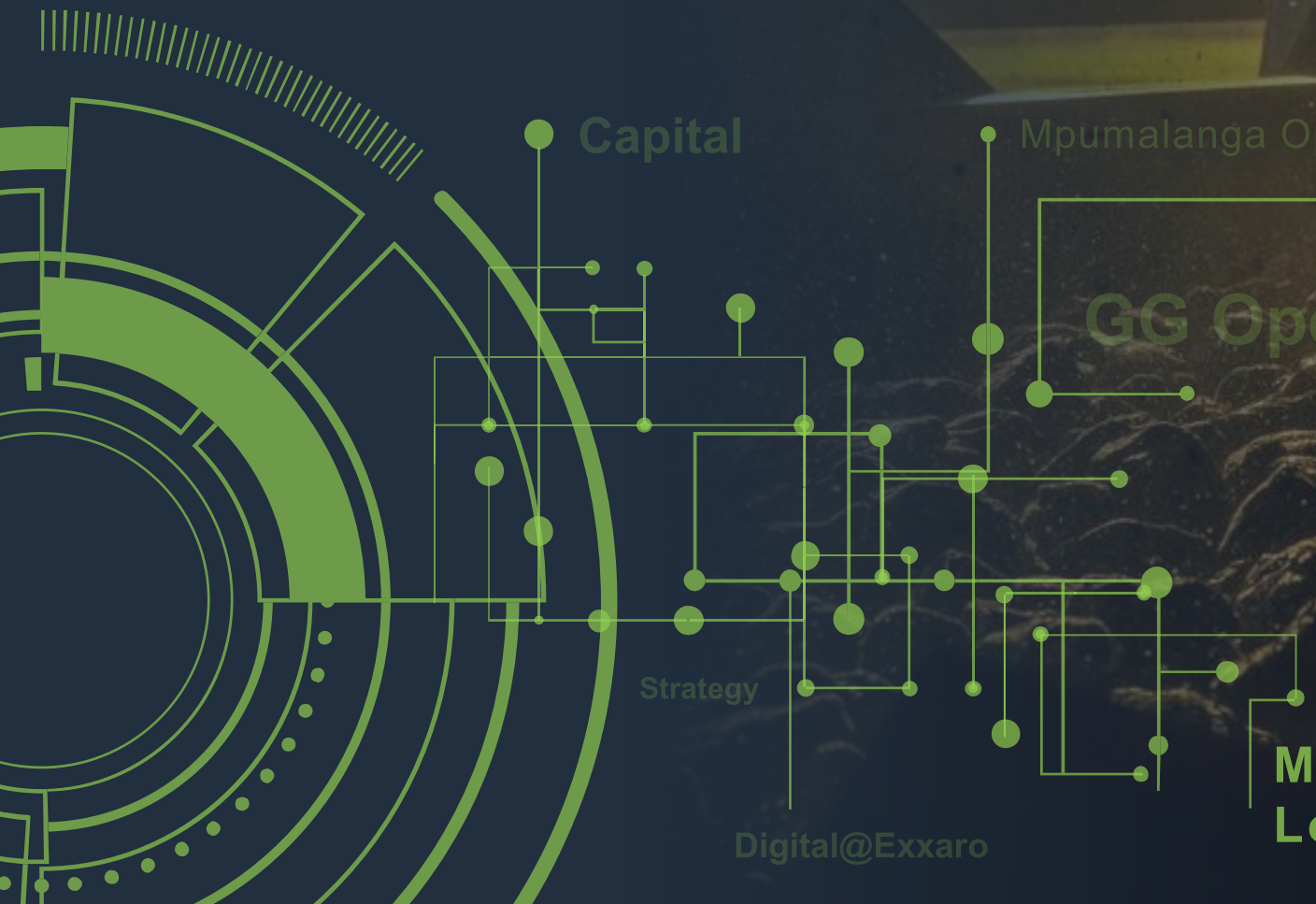
Continuous refinement of capital allocation targets

Continue implementing Capex excellence initiatives

Even better disclosure and forecasting

Markets and Logistics

Sakkie Swanepoel | **Group Manager, Marketing & Logistics**



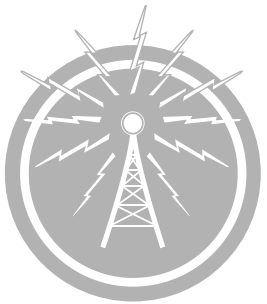
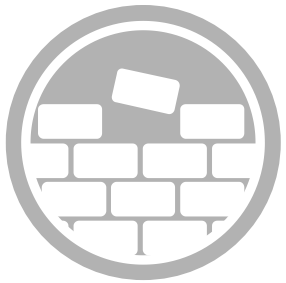
Markets | Strategic Overview

1. Coal markets are changing given climate change objectives, but remain exciting
2. A solid market strategy built on a reliable supply base
3. Exxaro will be positioned to compete throughout cycles and into the future


Coal markets going forward are challenging, but exciting

Markets |

Exxaro plays in both thermal and metallurgical coal markets

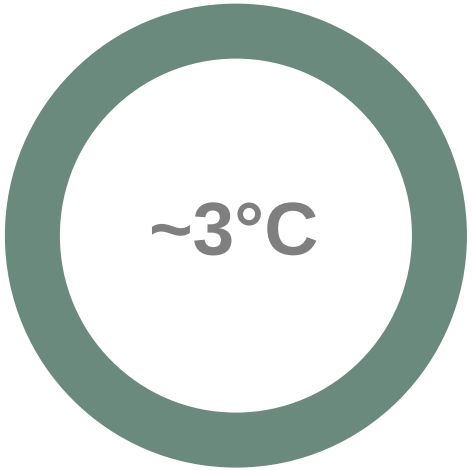
	Thermal coal			Met coal
	1 Power generation	2 Cement production	3 Industrial boilers	4 Steel & Ferroalloy Industry
				
Applications	Coal is a fuel source used for power generation.	Coal is widely used in the cement production process companies. Coal is necessary for the production of clinker.	Coal is also used for industrial boilers mostly used for steam production in various applications such as turning turbines and heating kilns.	Semi-soft or hard coking coal is used in the production of market and metallurgical coke. Met coke is used for the reduction of iron ore.
Alternatives	Nuclear, gas, oil, diesel & renewables	Alternative fuels incl biomass, oil, gas & petcoke	Diesel, gas, oil	Limited
Demand	Tot Electricity output to grow from **23 047 TWh** in 2015 to **34 095 TWh** in 2035[1]	**12 – 23%** by 2050[2]		Steel production grows by **0,7%** CAGR to 2050[3]

1 – WoodMackenzie (2018) – WM CS scenario , 2- IEA (2018), 3 – CRU (2019)

Markets |

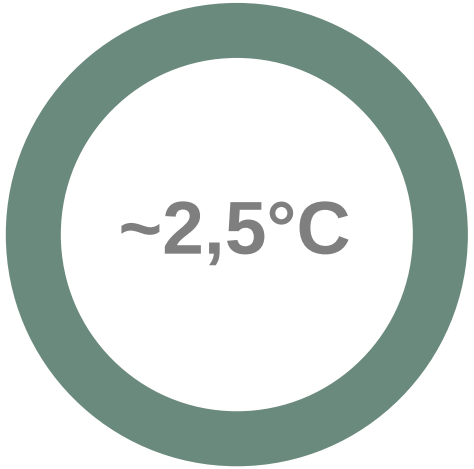
Demand and the global trends aimed at reducing carbon emissions

WoodMac Energy transition Outlook (WM ETO) – Base Case



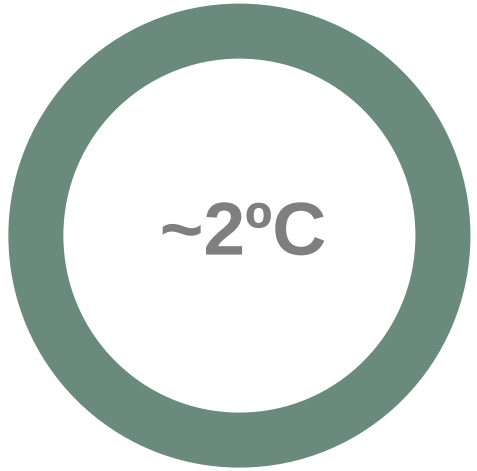
Scenario reflects an evolution of current policies and technology advancement, expressing some degrees of business and customer inertia.

WoodMac Carbon Constrained Scenario



Scenario reflects an accelerated view of the Energy Transition, a deeper view on decarbonisation and electrification, best efforts on technology, policy and cost reduction acceleration.

IEA Sustainable Development Scenario

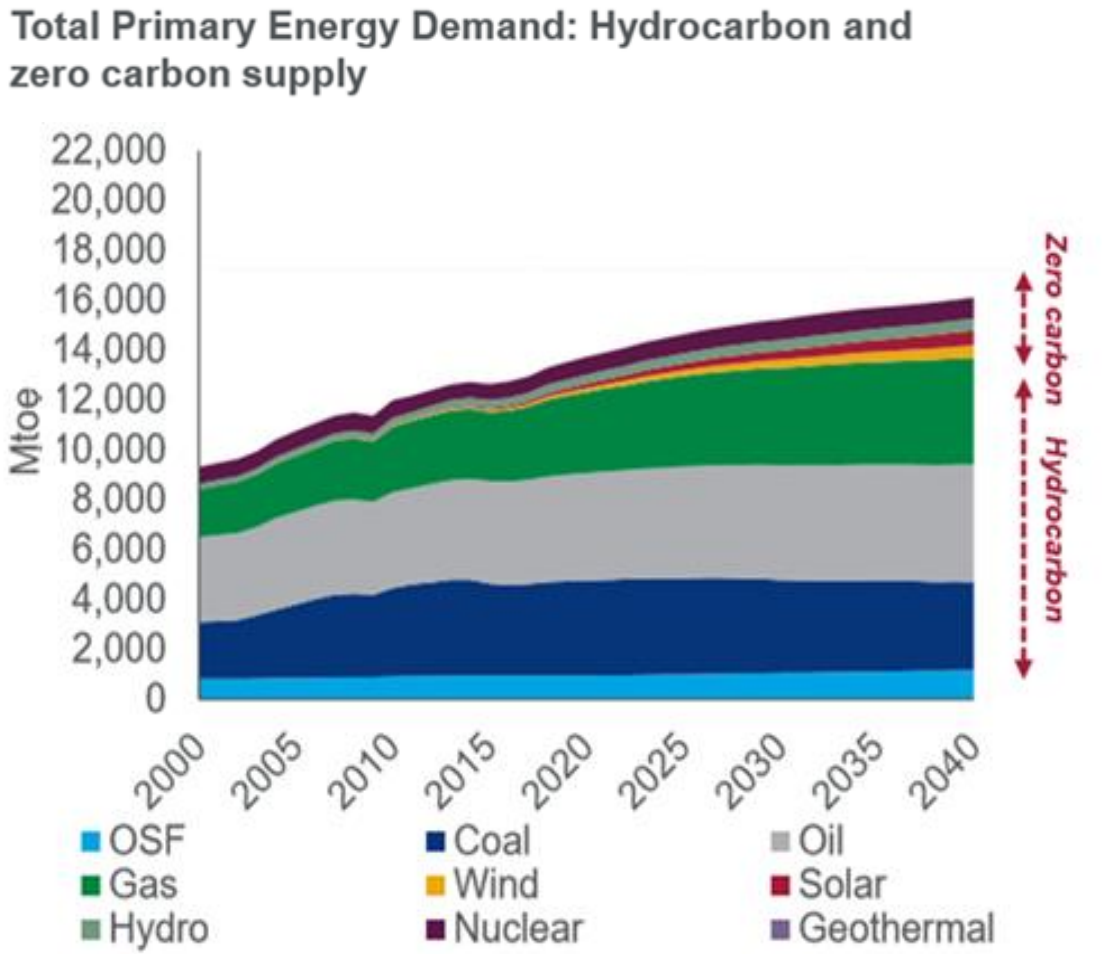


Reflects the impact of successful implementation of major climate goals, limiting global warming to 2ºC. The most common and standardized framework for quantifying a 2 degree or lower outlook.

Globally, action on climate change is intensifying and all countries will face pressure to decarbonise faster. The improving economics of low carbon technologies is probably the main driver of action toward a 2 Degree world.

Markets |

While global energy demand and a share of renewables increase, coal demand remains stable until 2040



Energy **demand** is forecasted to **increase** until **2040**

with

fossil fuels still to dominate the energy mix

but

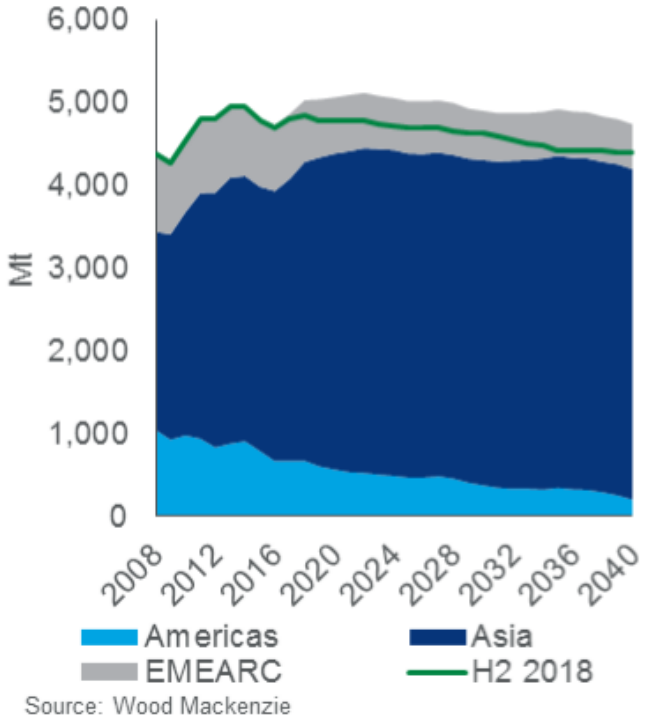
new capacity will be lead by **solar & wind power.**

- WoodMackenzie (2019) – Energy Transition Outlook 1H 2019
- Zero Carbon – renewables (i.e. wind, solar, hydro) and nuclear

Markets | Exxaro believes that international coal demand will be robust for the medium term …

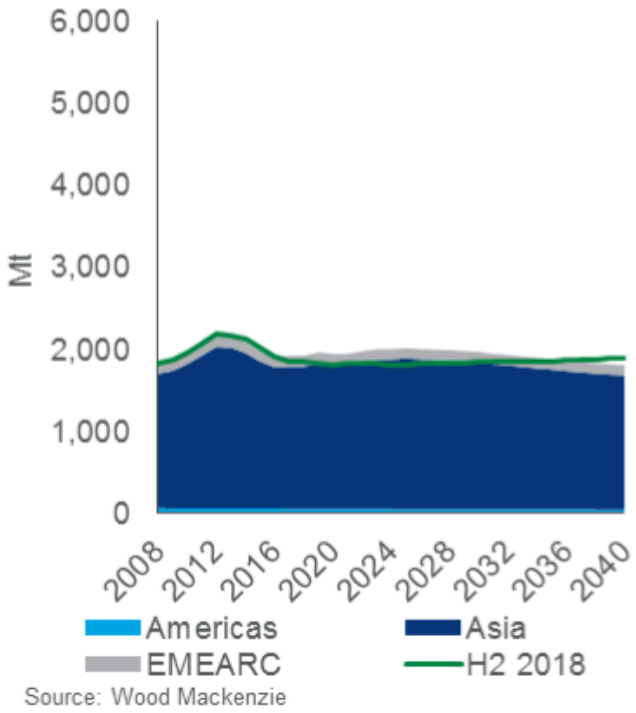
Global coal demand is largely driven by the power sector. Other major consumers of coal include the steel, cement & food industry

Global thermal coal demand for power



Source: Wood Mackenzie

Global thermal coal demand for non-power



Source: Wood Mackenzie

Key insights

- Global coal demand peaked in 2013 at approx. 7,13Bt .
- Stagnant demand to 2030, followed by a slight decline thereafter.
- Coal demand for the power sector is driven by economic growth and growing demand from Asia (i.e. SE Asia and India).
- In developed economies, improved efficiencies (lighting, air cons) results in reduced demand for electricity and political social pressures to move away from coal

WoodMackenzie 1H 2019 – Representing WoodMac Base case view, consistent with a 3°C global warming view

Markets | Seaborne thermal coal demand by region

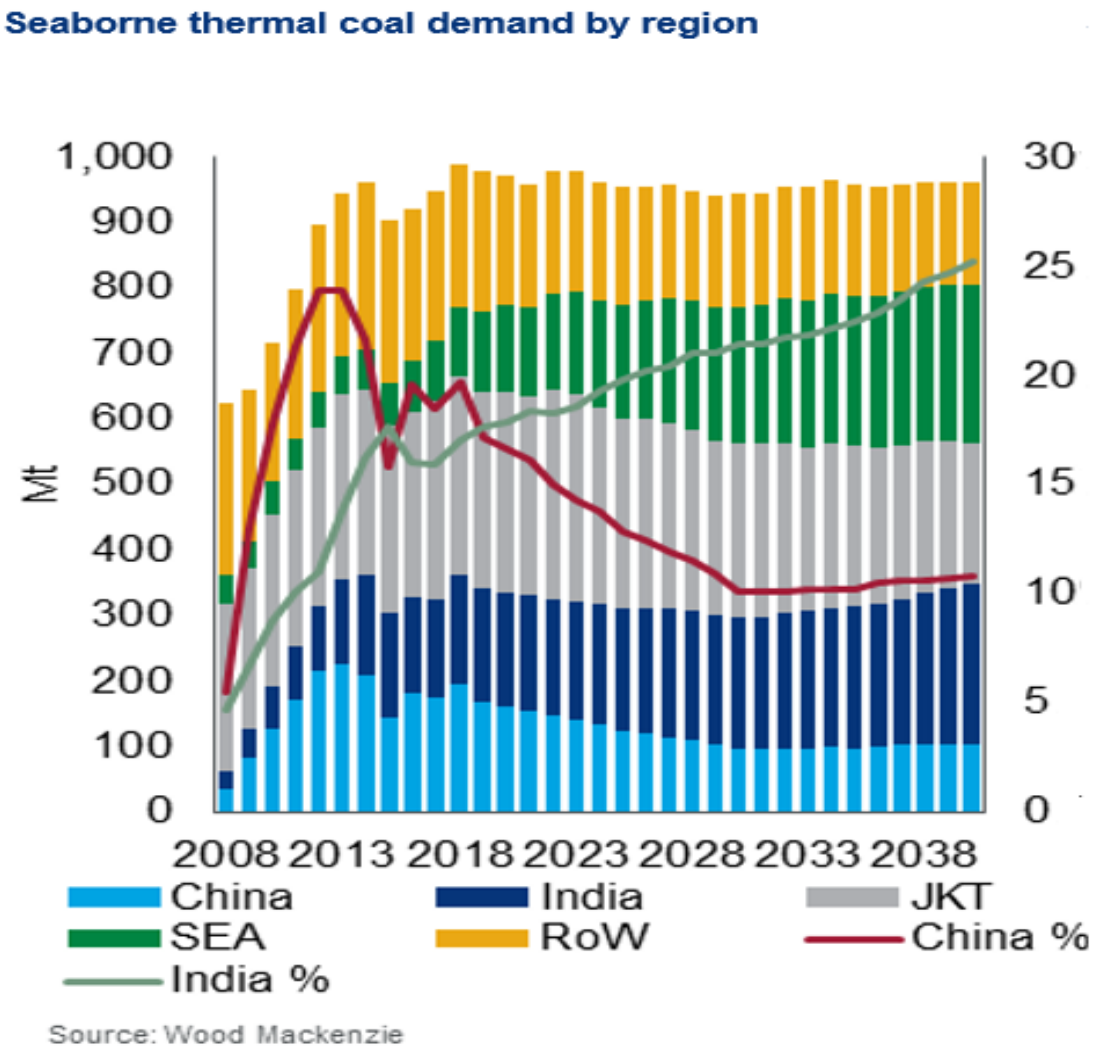
Global thermal seaborne coal demand peaks in 2017 and remains stable at levels above 900Mt until 2040

India and SE Asia drive future demand as China gradually cedes its dominant position.

China demand reduces to 10% by 2040, whilst India increases to 25%

Electrification in SEA coal demand is dependent on a coal pipeline build.

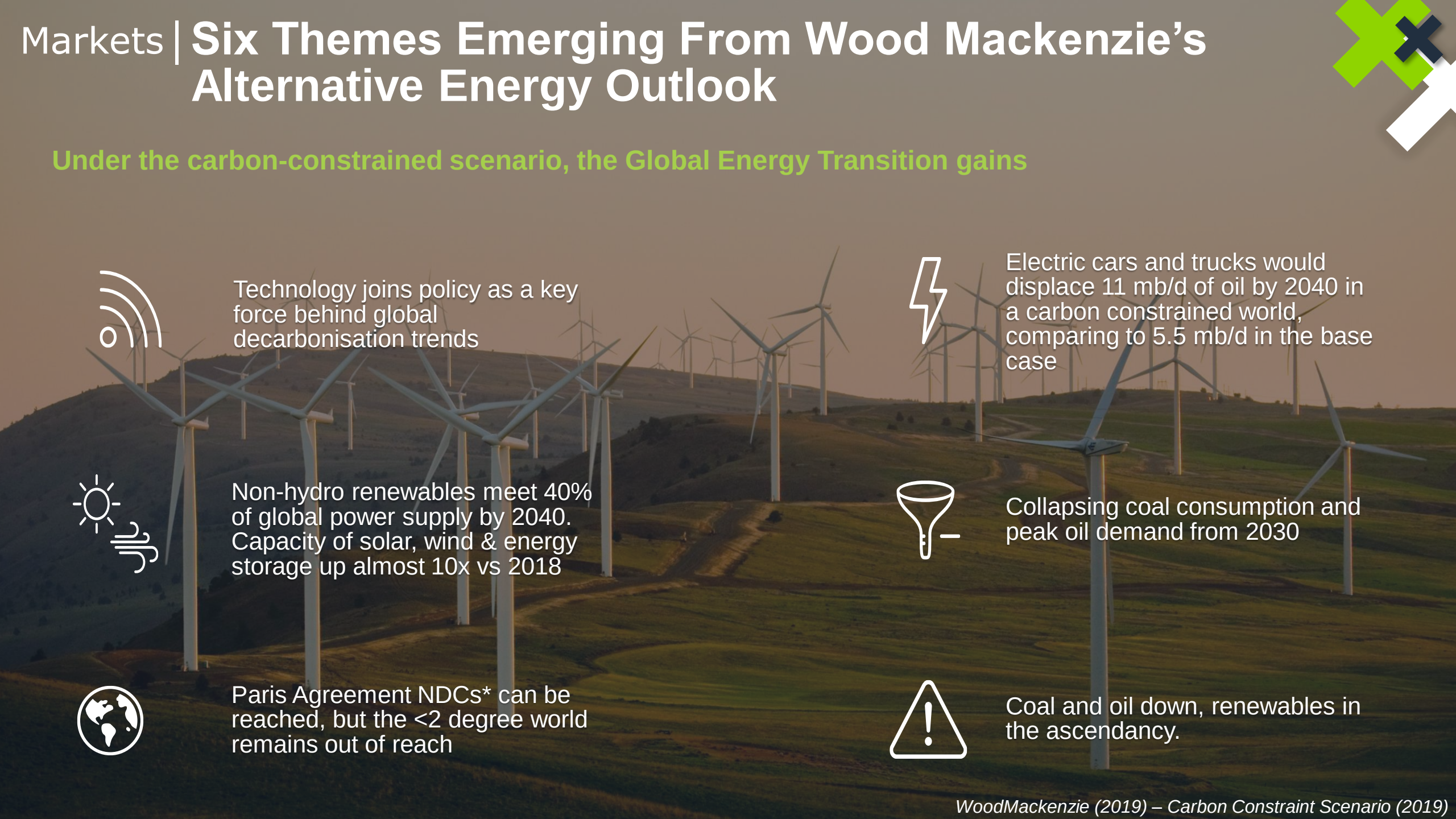
Competitive alternatives are limited Other alternatives



WoodMackenzie (2019) – Global Thermal Coal Term Outlook H1 2019

Markets | Six Themes Emerging From Wood Mackenzie's Alternative Energy Outlook

Under the carbon-constrained scenario, the Global Energy Transition gains



Technology joins policy as a key force behind global decarbonisation trends

Non-hydro renewables meet 40% of global power supply by 2040. Capacity of solar, wind & energy storage up almost 10x vs 2018

Paris Agreement NDCs* can be reached, but the <2 degree world remains out of reach

Electric cars and trucks would displace 11 mb/d of oil by 2040 in a carbon constrained world, comparing to 5.5 mb/d in the base case

Collapsing coal consumption and peak oil demand from 2030

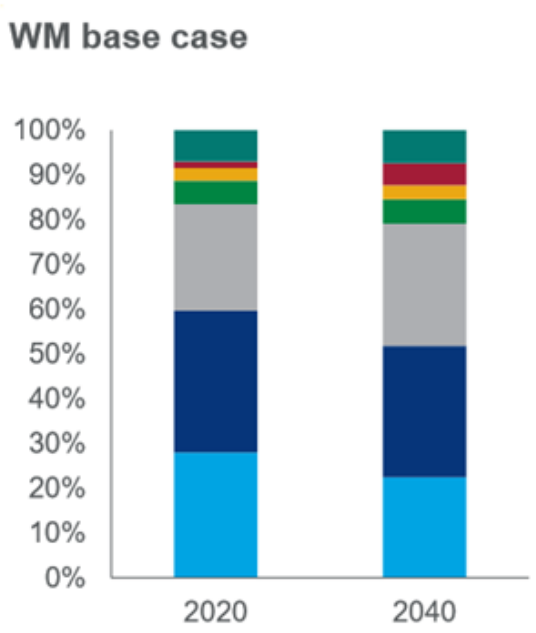
Coal and oil down, renewables in the ascendancy.

WoodMackenzie (2019) – Carbon Constraint Scenario (2019)

Alternative energy outlooks given the climate change targets

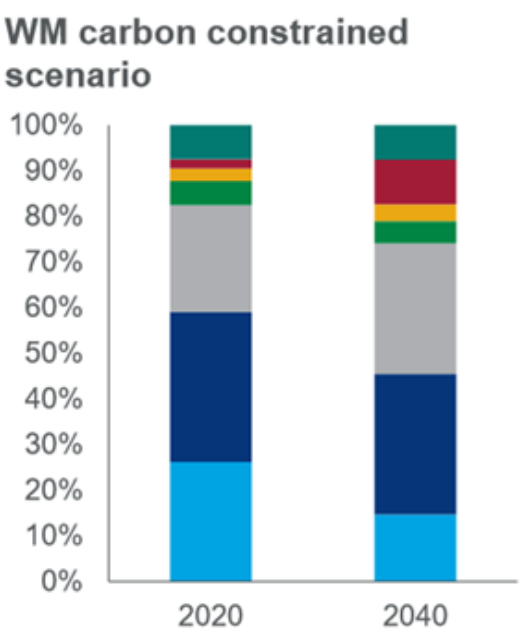
WoodMac Energy Transition Outlook (WM ETO) – Base Case

3°



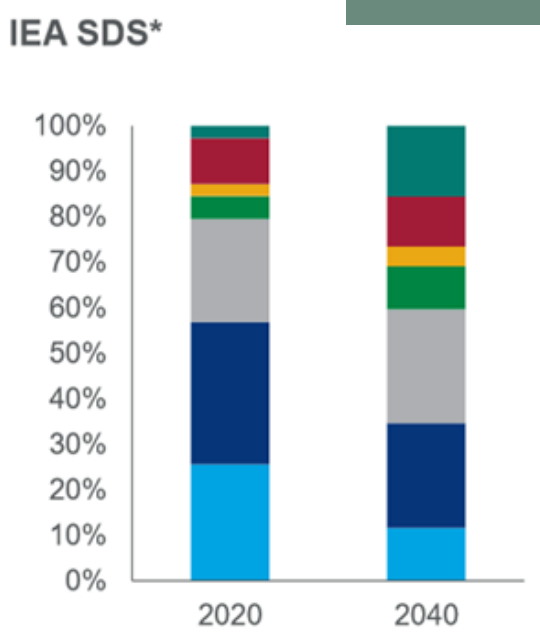
WoodMac Carbon Constrained Scenario

2.5°



IEA Sustainable Development Scenario (SDS)

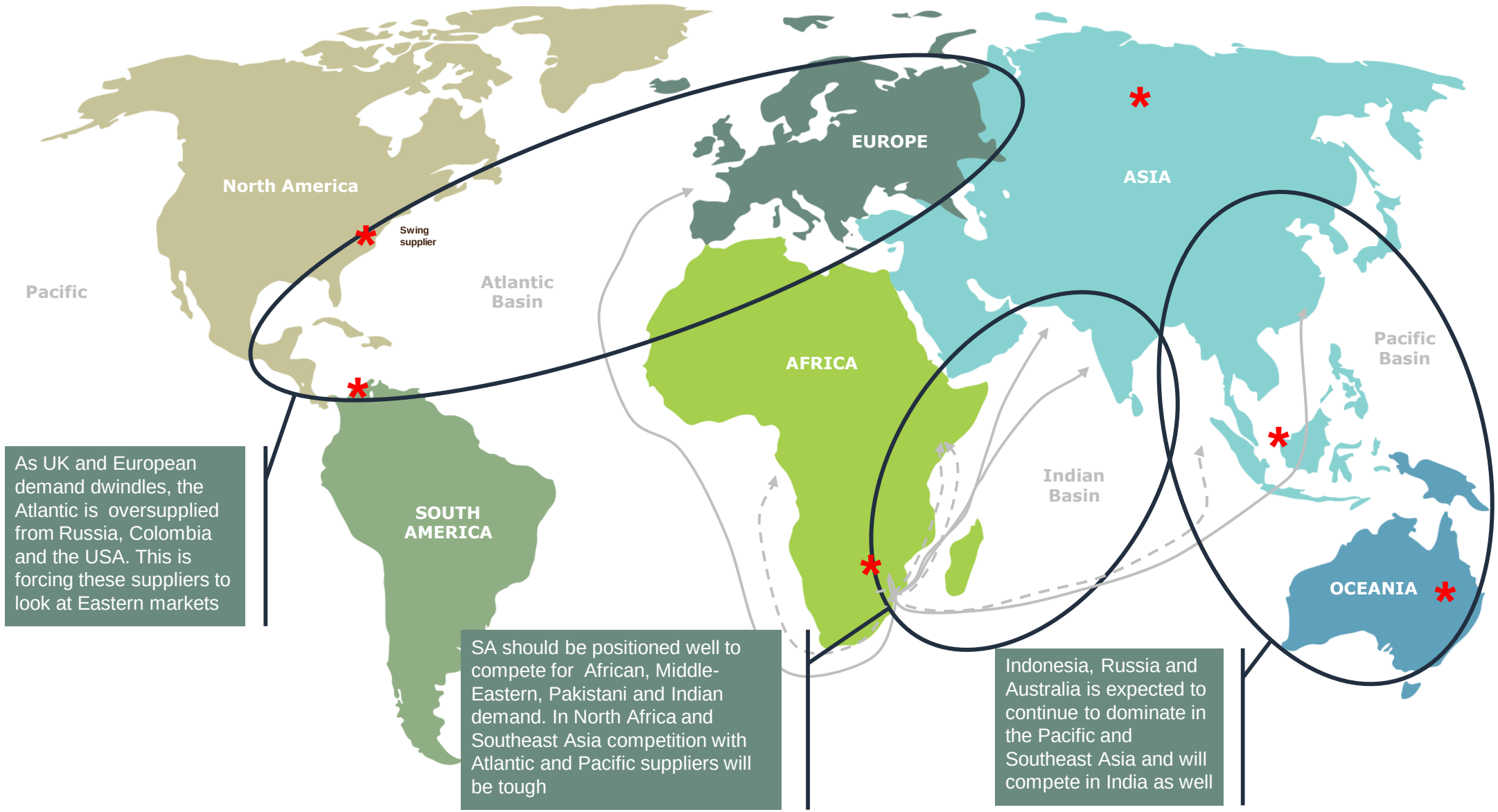
2°



IEA – International Energy Agency Sustainable Development Scenario
WoodMackenzie (2019) – Energy Transition Outlook 1H 2019


A solid market strategy built on a reliable supply base

Markets | Geographic Competitiveness



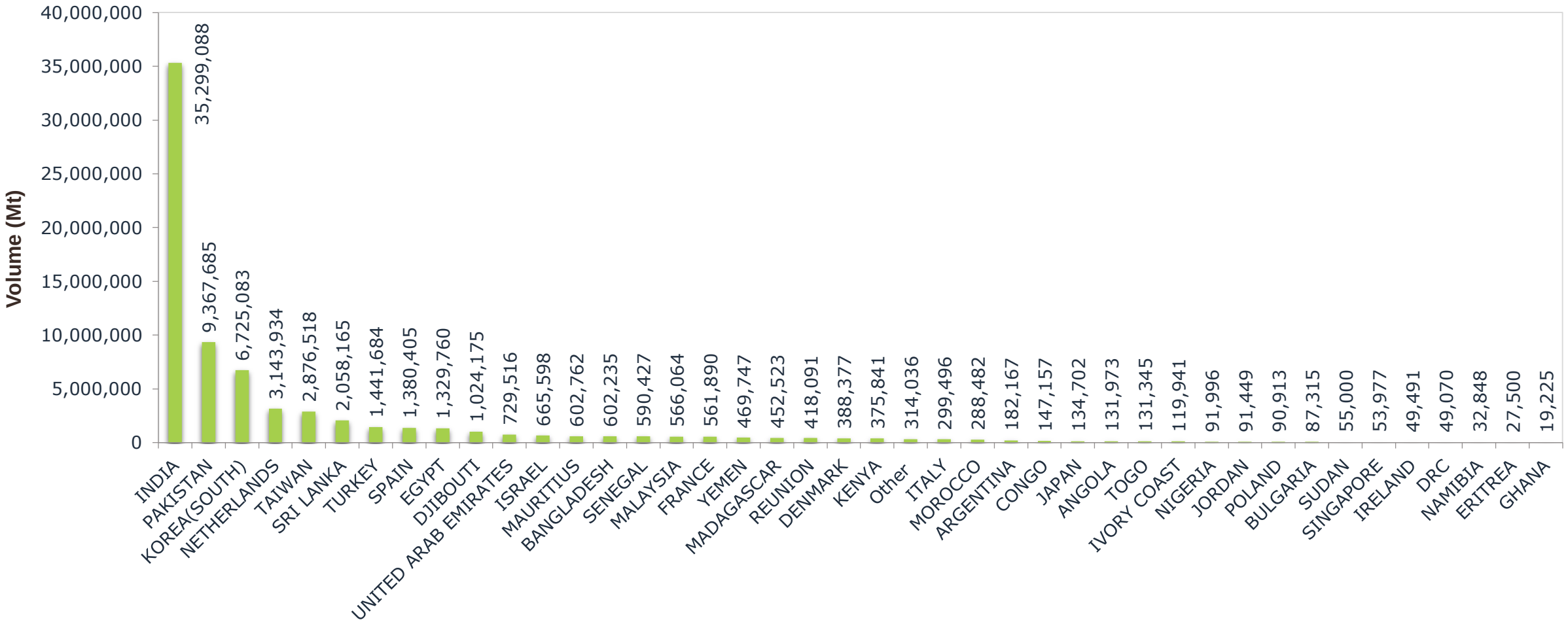
As UK and European demand dwindles, the Atlantic is oversupplied from Russia, Colombia and the USA. This is forcing these suppliers to look at Eastern markets

SA should be positioned well to compete for African, Middle-Eastern, Pakistani and Indian demand. In North Africa and Southeast Asia competition with Atlantic and Pacific suppliers will be tough

Indonesia, Russia and Australia is expected to continue to dominate in the Pacific and Southeast Asia and will compete in India as well

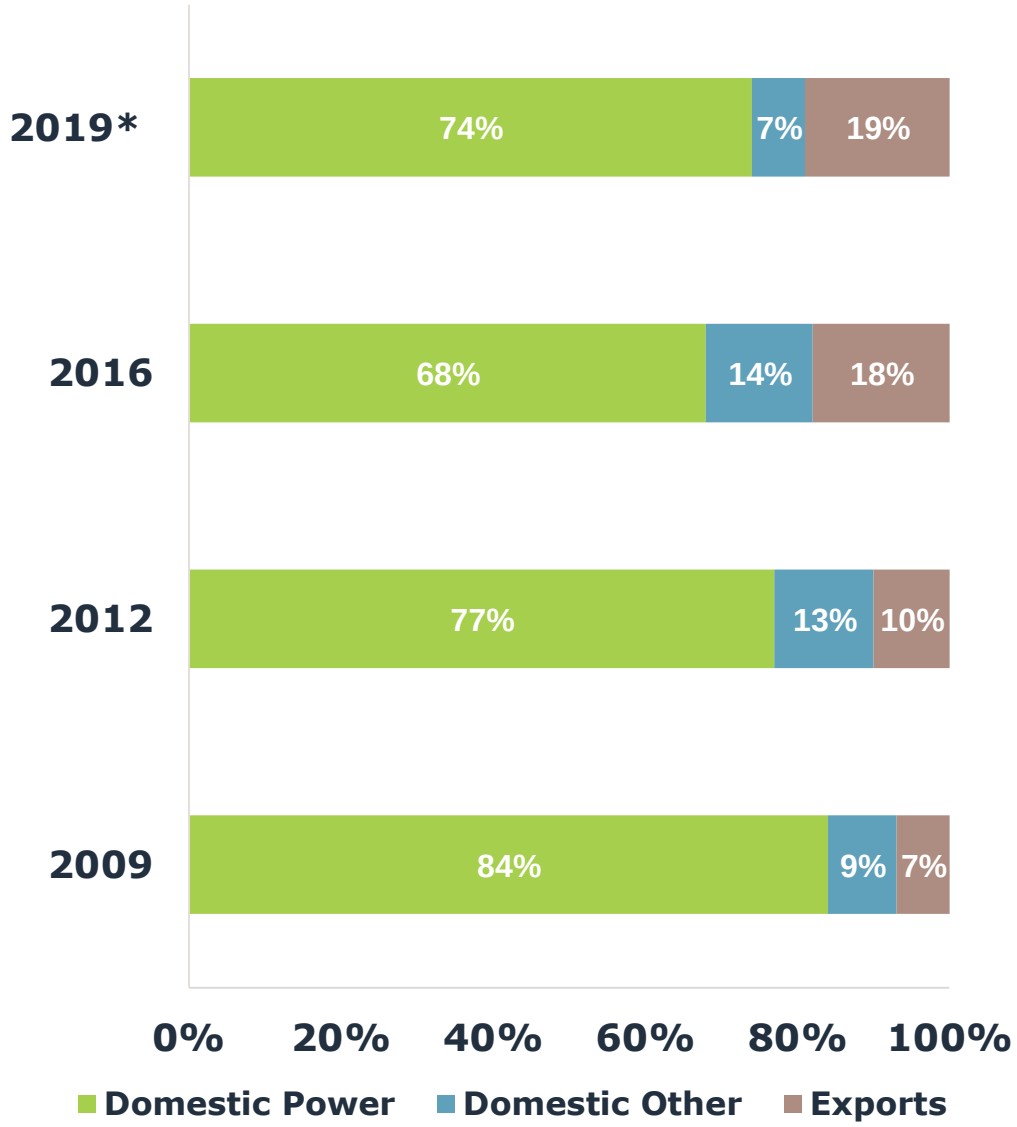
Markets | RBCT Export Destinations - 2018

India (48%), Pakistan (13%), South Korea (9%) were the biggest importers of South African coal in 2018. Cumulatively, 70% of RBCT volumes were shipped to these 3 destinations. Shipments to Africa amounted to 6% in 2018.



Markets | Strategy – Where to play

- Exxaro was historically a domestic market player with little export entitlement.
- Exxaro wants to maintain presence in both the domestic and international markets as this combination provides the most revenue consistency.
- Exxaro now has more freedom with additional export entitlement to leverage and optimise market positions.
- Even though total sales volumes have not changed drastically since 2009, Exxaro has demonstrated over time that it continuously optimises its product mix and market position to supply higher value segments and customers.



2019 - Exxaro Forecast

Markets | Where to play (International Markets)

Key Considerations

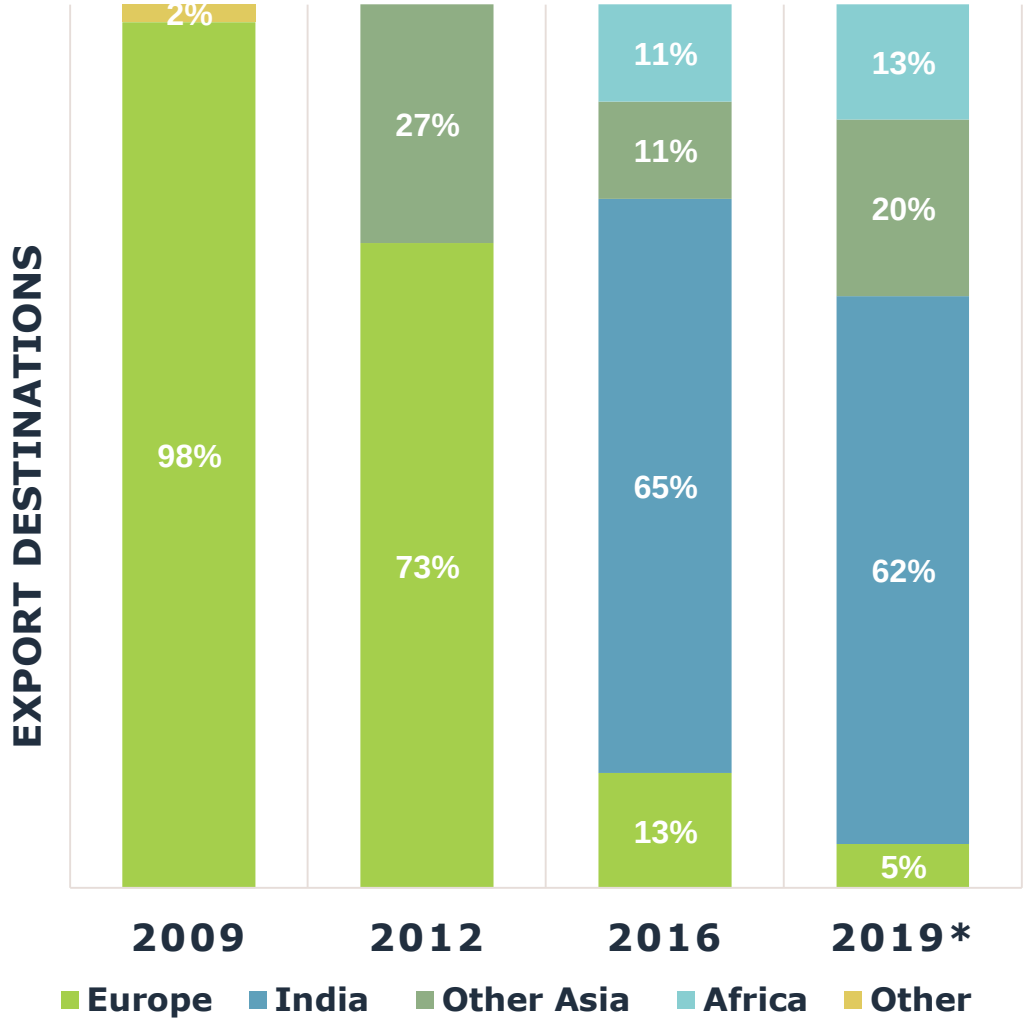
We understand where demand is now and growing into the future.	Growth in RB1/RB2 markets expected at 4% pa up to 2026, and 3% for RB3 and lower qualities.
We understand how competitive we are in these geographies/markets.	We have identified the markets in which we can compete from a product and profitability perspective.
We are deliberate in our efforts to obtain a diversified market position.	We target optimal diversification levels, and deliberately do not sell into every market.

Selection of target countries

Country-level analysis

Markets | Where to play (International Markets)

- Exxaro were early in our recognition of coal demand migrating from West to East.
- Smaller percentage of coal going to Europe.
- Africa coming off a small base but growing.
- Africa, Middle East, Pakistan and India in the sweet spot.
- South-East Asia presenting exciting growth opportunities.
- Exxaro can sell coal profitably anywhere in the world, but the Indian Basin encompasses most of our logical playing field due to proximity to market, product mix and market attractiveness.

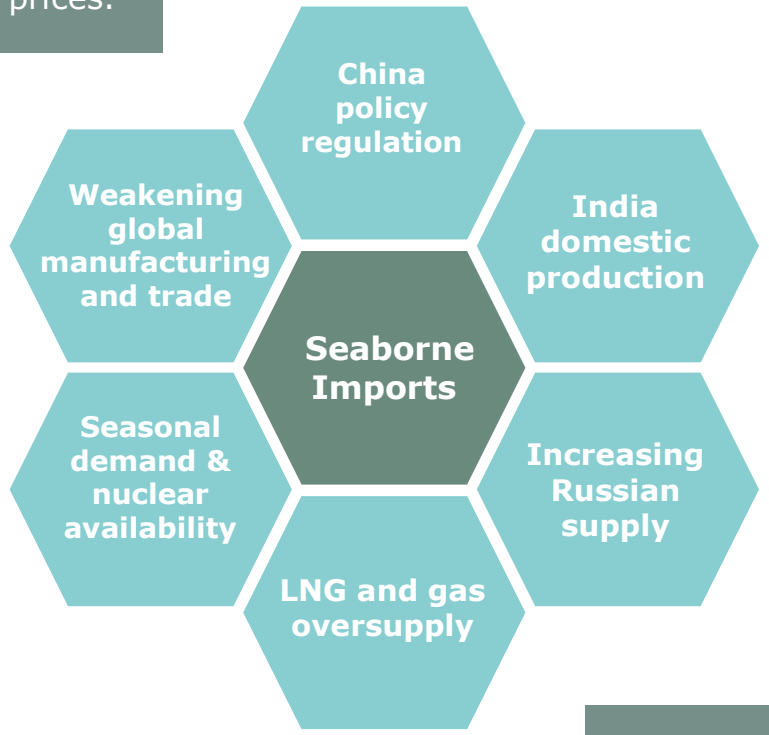


Markets | As always, there are uncertainties affecting us in the short – medium term

China aims to regulate domestic production of coal by controlling imports, impacting on the Pacific coal flows and will have a key role in setting thermal coal prices.

Trade wars between US and China will result in lower GDP growth in 2019.

Nuclear availability in Europe and S Korea can have significant impacts on coal demand and flows.



Coal of India (CIL) has ambitious domestic growth targets and aims to reduce coal imports by 45Mt/y from 2020. India has approved 100% FDI which allows global miners to develop, process mine and sell coal (domestic & exports). Potentially more volumes will be available on the spot market.

SUEK Is expected to increase production in Kuzbass

With an LNG oversupply, continued coal-gas competition represents a downside risk for coal demand.

Exxaro is positioned to compete throughout cycles and into the future

Market to Resource |

We understand and extract full value from our resources

Product Attributes

- Understand the VIU of our products in the market place

Resource Attributes

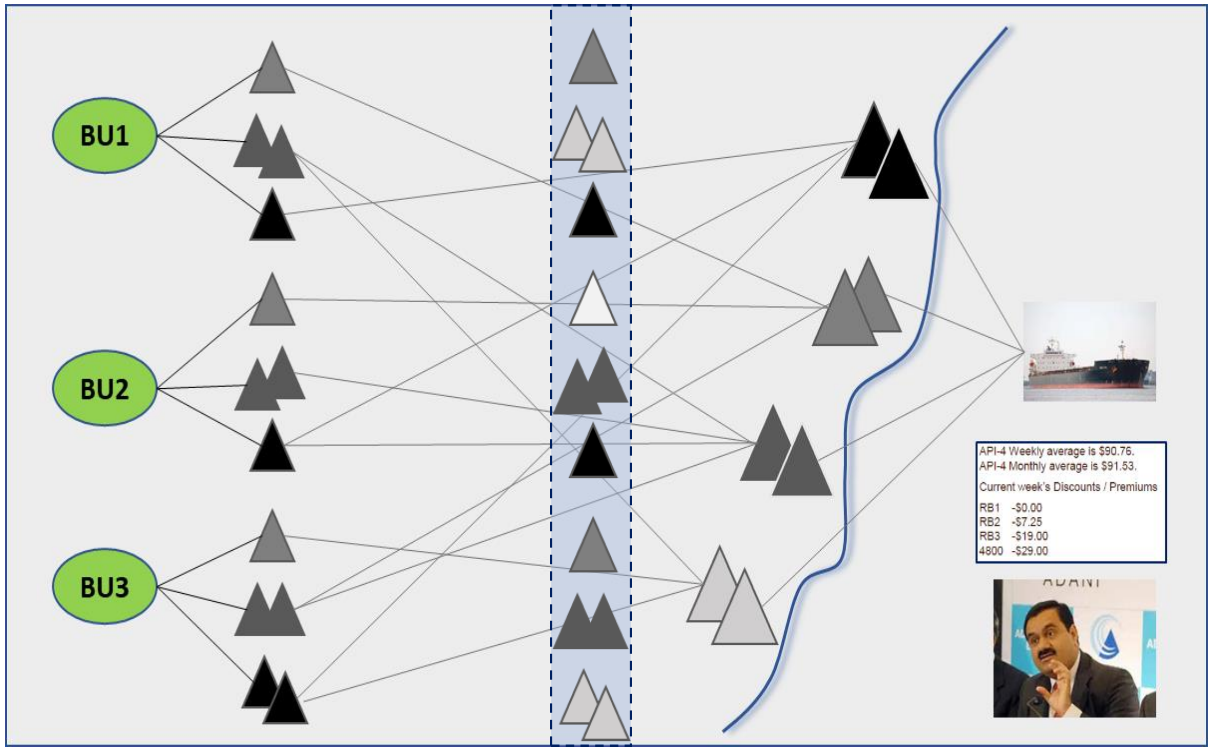
- Characterization into downstream processing

BU Optimisation

- Iterative cycles of planning, improvements and developments to ensure optimal cost/yield

Route–to–Market Optimisation

- Shortest route to Market and Market Positioning



Summary | Outlook

Diversified and Unique Product Portfolio

- Coking coal (semi-soft) and PCI.
- Full range of products (sized) for domestic markets.
- Low Sulphur and low Phosphorus coal.
- Export Thermal coal (4200kcal/kg – 6000kcal/kg)

Adaptability

- Our ability to match our resources and beneficiation capabilities to a constantly evolving market is world class.

Digitalization and Innovation potential

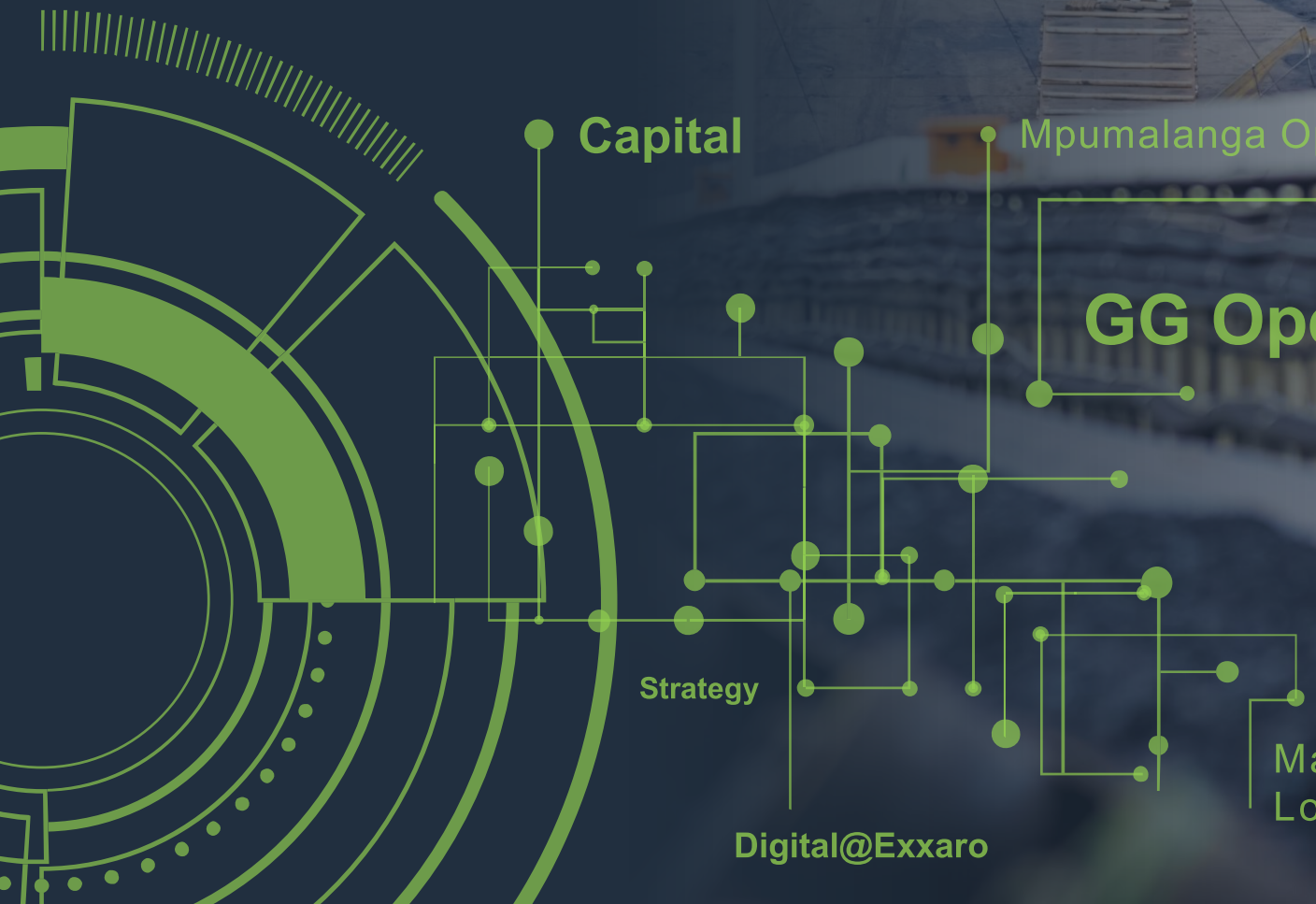
- Leveraging disruptive technologies to ensure reliable market intelligence

Positioning

- Exxaro maintains an optimally diversified portfolio in geographies, markets, market segments and customers.

Summary & Conclusion

Nombasa Tsengwa | **Executive Head, Coal Operations**



Coal | **We believe that our coal business through its robust assets will continue to deliver value for our stakeholders**

Our future

We accept the uncertainty brought by climate change

- However we have no crystal ball about the future of coal
- In the face of uncertainty, we continue to optimize our robust assets, move lower in the cost curve such that we land coal competitively across all markets
- Early value is our best bet

Our flexibility

A well developed and capable marketing team

- Our marketing options in conjunction with our resource base gives us great flexibility in extracting maximum value regardless of market uncertainty

Our team & resources

A Diversified resource base, well operated

- Exxaro has great, robust assets, with diversified markets and distribution channels. Managed and operated by experienced professionals

Our strategy

A solid evolving strategy

- Exxaro has a clear coal strategy to deliver value, by maintaining and optimizing its robust assets, underpinned by operational excellence and innovation, positioning us for competitive growth into the future

Questions