



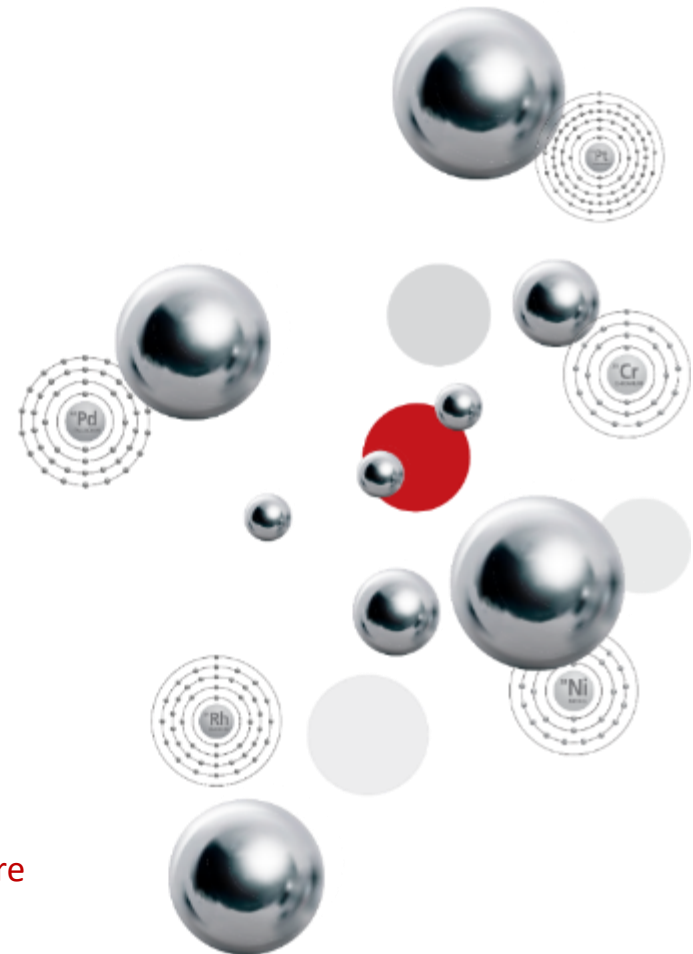
# tharisa

DISCOVER DEVELOP **DELIVER** DIVERSIFY

Different by Design

January 2020

Engineering the mining company of the future



# SUSTAINABLE POLYMETALLIC BUSINESS MODEL

- **Discover**
  - Large scale resources
  - Complimentary opportunities in the resource universe
- **Develop**
  - Innovative approach to mineral extraction
  - New processes and technologies to enhance value further
- **Deliver**
  - Safe production growth in both PGM and chrome concentrates
  - Shareholder value across the commodities chain
  - Impactful investment and social contribution
- **Diversify**
  - Into a multi asset, multi commodity, multi jurisdictional business
  - Using technology as our catalyst
- **Tharisa is the sixth largest South African PGM producer and fourth largest South African chrome producer, and the largest chrome producer from a single resource**



Targeting 200 koz of PGMs and 2 Mt of chrome concentrates in 2020, on an annualised basis

# FY2019 SALIENT FEATURES

## EMPLOYEES AND CONTRACTORS

2 826

21% female

## TRAINING SPEND

US\$3.5m

## INTERNS/GRADUATES & STUDY ASSISTANCE

20 & 20

## REEF MINED

4.63 Mt

## PGM PRODUCTION (5PGE+Au)

139.7 koz

## CHROME CONCENTRATE PRODUCTION

1.29 Mt

## REVENUE

US\$342.9 m

## OPERATING PROFIT

US\$24.2 m

## EBITDA

US\$51.6 m

## PROFIT BEFORE TAX

US\$11.2 m

## EPS AND HEPS

US 4 c / 5 c

## PROPOSED TOTAL DIVIDEND\*

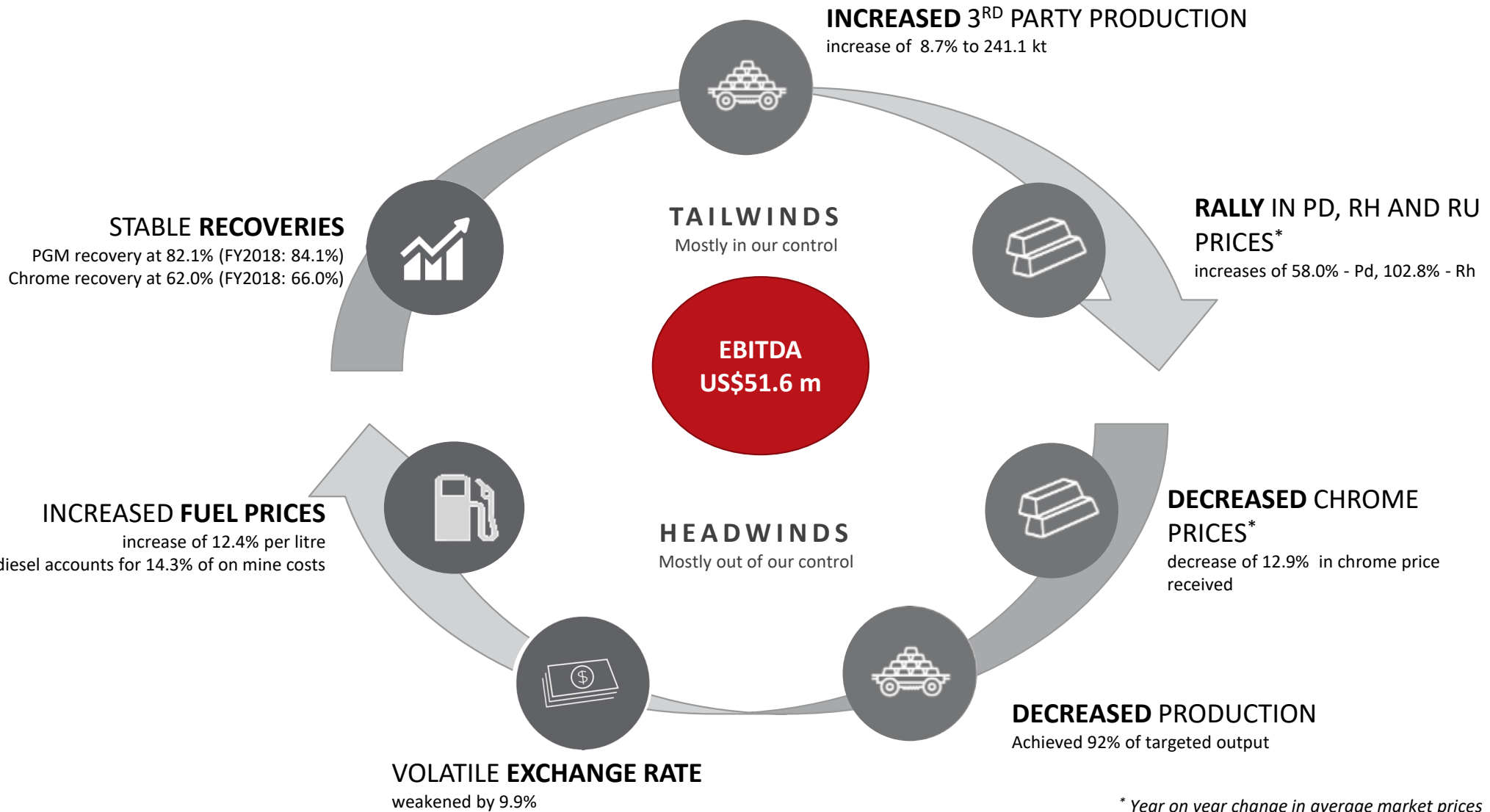
US 0.75 c

*\*includes interim distribution of US 0.5 c*

3 MILLION FATALITY FREE SHIFTS

- FY2020 guidance of between 155 koz and 165 koz of PGMs (6E basis) and 1.45 Mt to 1.55 Mt of chrome concentrates

# FY2019 IN REVIEW



# FY2019 THEMES

---



**CO-PRODUCT  
BENEFITS**



**OPERATIONALLY CASH  
GENERATIVE**



**INVESTING FOR THE  
FUTURE**



**CONTINUED  
DISCIPLINED CAPITAL  
ALLOCATION**

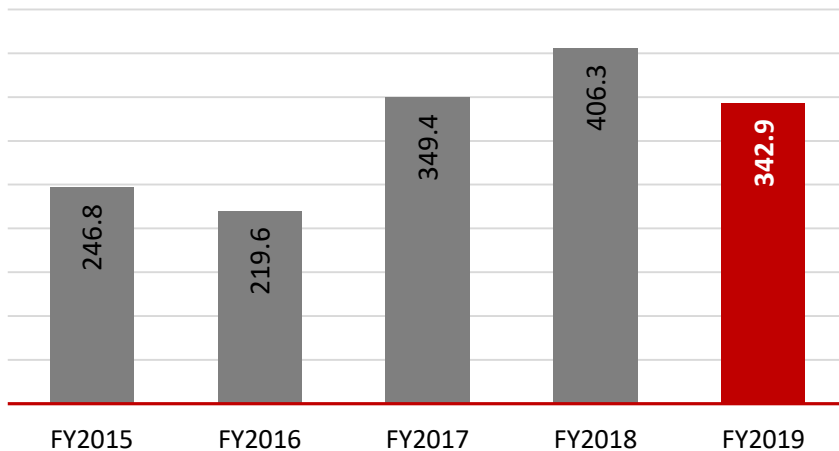


**DIVIDEND PAYER**

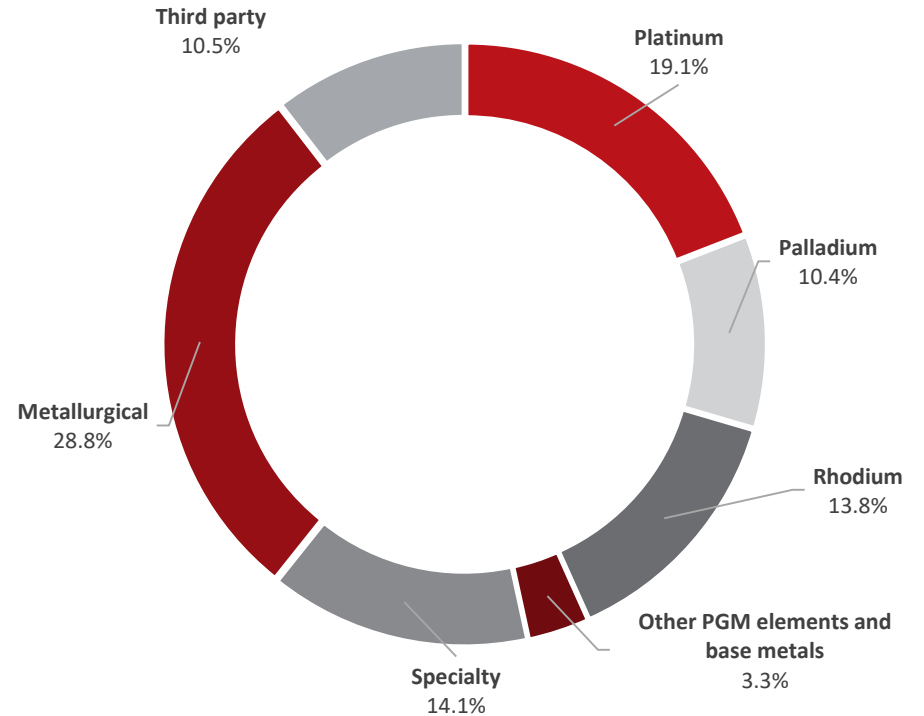
# REVENUE

- Benefit of co-production as prices diverged
- Group revenue decreased by 15.6% year on year
  - Lower overall sales volumes
  - Decrease in the chrome price received
- Chrome contributed US\$177.9 million
- PGM contributed US\$130.1 million
- Agency and trading contributed US\$34.9 million

GROUP REVENUE  
(US\$ m)



REVENUE CONTRIBUTION EX WORKS BASIS  
(US\$m)

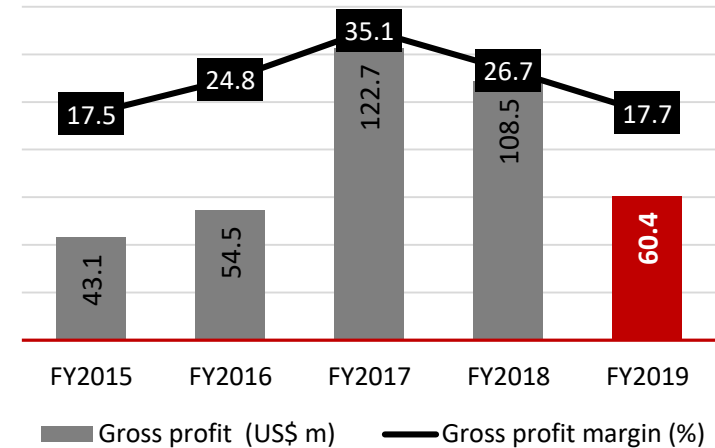


FY 2019 PGM basket price: US\$ 1 081  
Current PGM basket price: ~US\$ 2 000

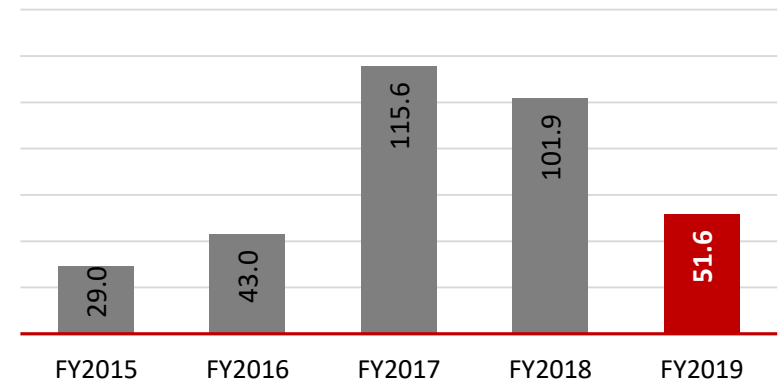
# GROSS PROFIT

- The major factors contributing to the reduced gross margin were the lower production levels and chrome prices with the embedded fixed cost component
- An increase in the stripping ratio moving 0.7% more waste while producing 5.1% fewer ROM tonnes
- Above inflation pricing pressures such as diesel and electricity
  - Diesel consumption comprises 14.3% of the on-mine cost of production with a 12.4% increase in the average price per litre of diesel
  - Electricity costs, while not being a significant input cost at 6.4% of the on-mine cost of production, increased by 6.8% per kilowatt hour
- Shared costs allocated 55% to the PGM segment and 45% to the chrome segment

GROSS PROFIT AND MARGIN



EBITDA  
(US\$ m)

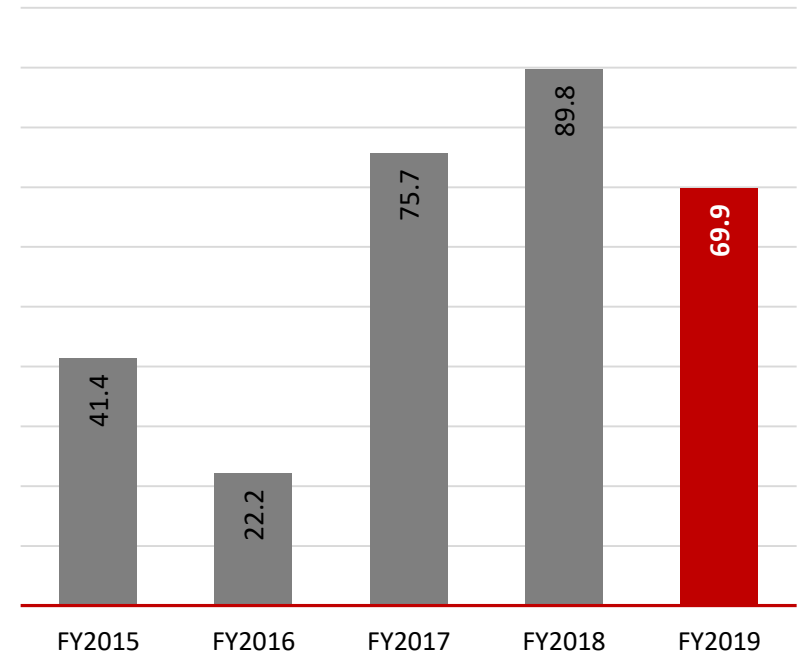


CO-PRODUCTION MODEL

# CASH FLOW

- The Group generated net cash from operations of US\$69.9 million (FY2018: US\$89.8 million)
- Taking into account capex, the free cash flow was US\$26.0 million (FY2018: US\$49.3 million)
- Cash on hand amounted to US\$59.2 million (FY2018: US\$66.8 million)

NET CASH FLOWS FROM OPERATING ACTIVITIES  
(US\$ m)



US\$ millions	FY2019
Cash flow from operating activities	69.9
Investing cash flows	(52.4)
Financing cash flows	(22.8)
Net increase / (decrease) in cash	(5.2)
Cash at the end of the period	59.2

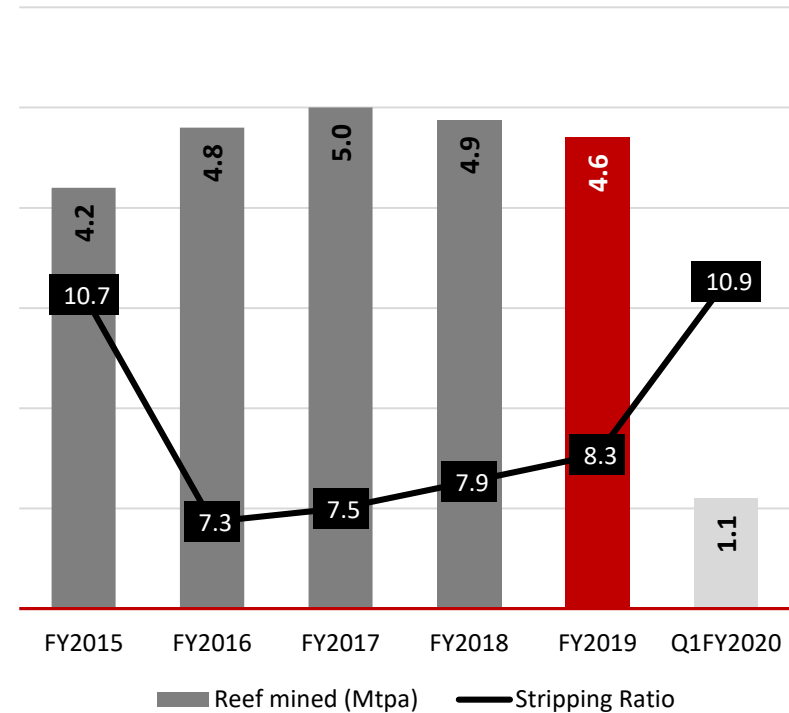
OPERATIONALLY CASH GENERATIVE



# PRODUCTION - MINING

- Revised pit layout has been completed
  - Over 1.7 Mm<sup>3</sup> extra in pit material moved
- Total reef tonnes mined for FY2019 at 4.6 Mt down from the previous year's 4.9 Mt
- Stripping ratio of 8.3 m<sup>3</sup>:m<sup>3</sup>
- Second Caterpillar 6050 face shovel commenced operations on 15 November 2019

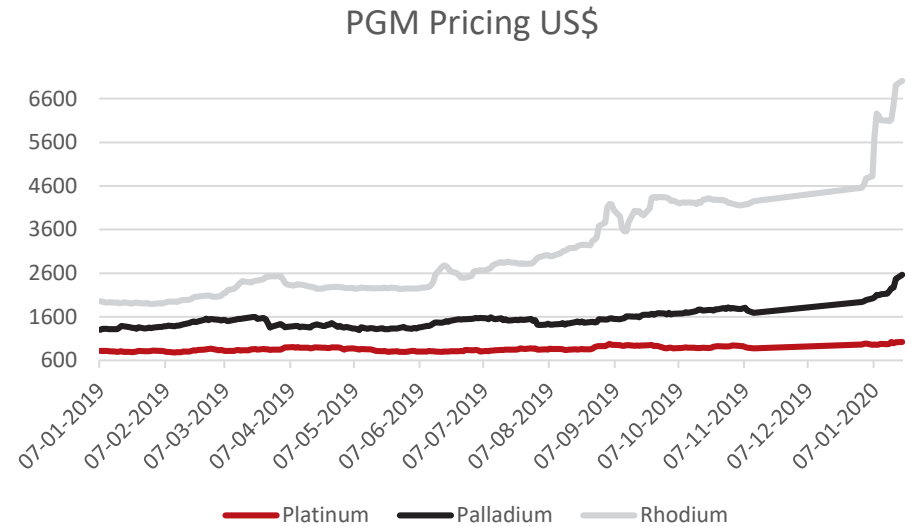
MINING  
(Mtpa)



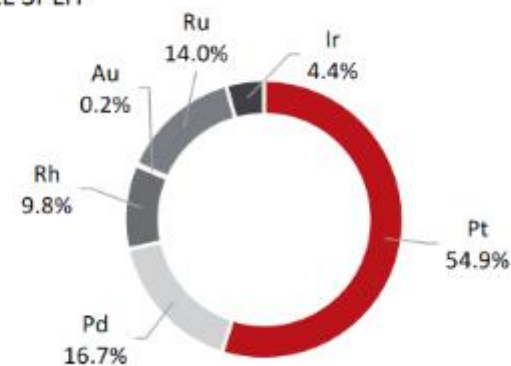
# PGM MARKET

## PGMs – METALS FOR THE 2020s

- Palladium and rhodium demand to remain strong due to structural demand changes
  - autocatalytic demand from India, China and Europe as a result of tightening emission standards
  - Growing demand for PGM in electrical vehicle and fuel cells
- Palladium market has been in deficit for a significant period
- Rhodium market has entered a period of demand outweighing supply
- Increased production costs in South African deep level mines has come offline

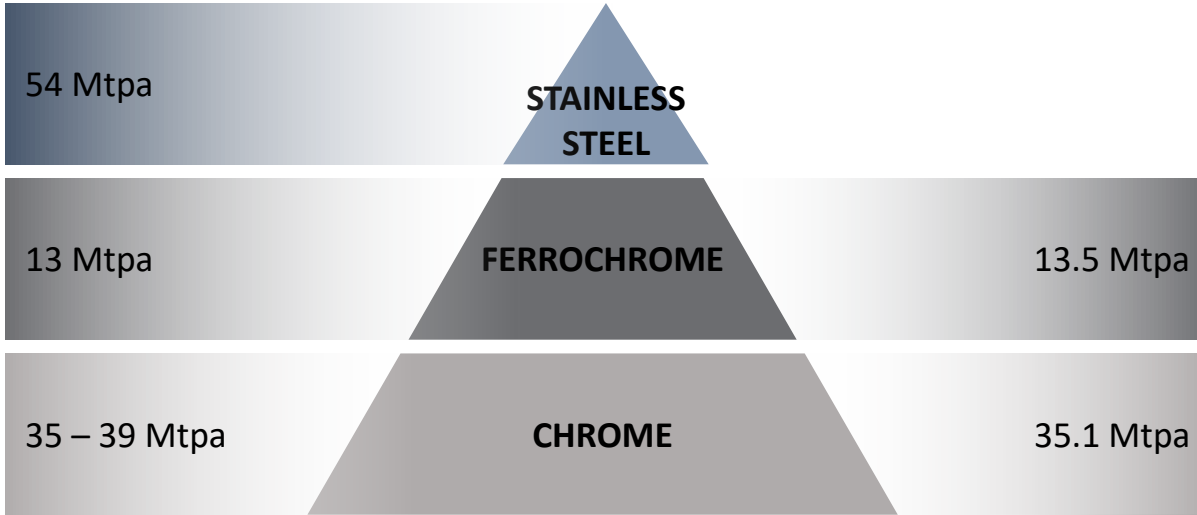


## THARISA PRILL SPLIT



# CHROME MARKET

## GLOBAL PRODUCTION



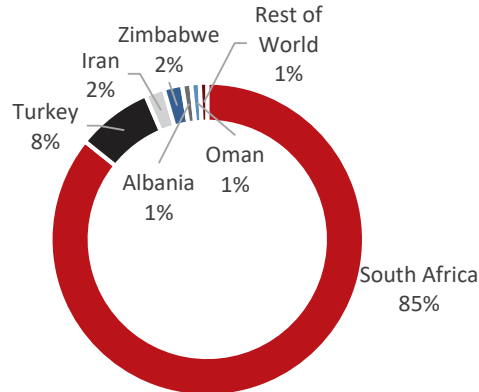
GLOBAL STAINLESS STEEL CAGR  
+5.0%

ADDITIONAL STAINLESS STEEL  
2.7 Mtpa

ADDITIONAL FERROCHROME  
0.7 Mtpa

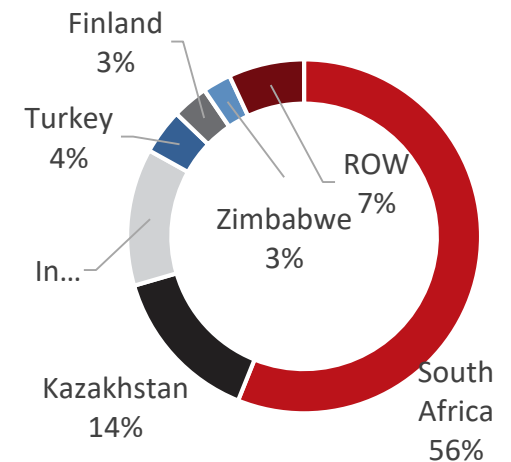
ADDITIONAL CHROME  
1.8 Mtpa

## CHINA CHROME IMPORTS 2018



BALANCE OF CHROME ORE REQUIREMENT FOR NICHE PRODUCTS (Chemical, foundry, MC/LC FeCr, metal)  
4.0 Mtpa

## GLOBAL CHROME PRODUCTION (2018)



Source: SASSDA, BMO, Broker consensus

# DELIVERING ON OUR GROWTH STRATEGY

## DISCOVER

- Globally significant, diversified low cost operations

## DEVELOP

- Innovative approach to viable mineral extraction
- Sustainable polymetallic business model

## DELIVER

- FY2020 production targets
- Vulcan Plant
- Vision 2020

## DIVERSIFY

- Multi asset, multi commodity, multi jurisdictional business
- Using technology as our catalyst

**Engineering the mining company of the future**

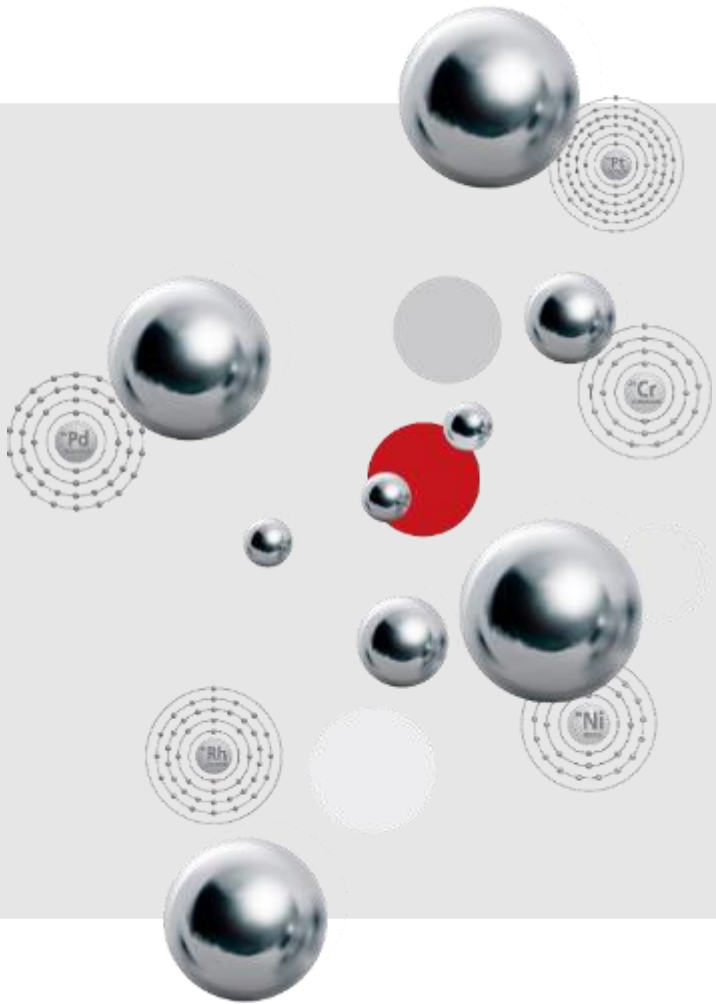


**FY2020 PRODUCTION TARGETS: 155 koz to 165 koz PGM; 1.45 Mt to 1.55 Mt CHROME CONCENTRATES**

tharisa



APPENDICES



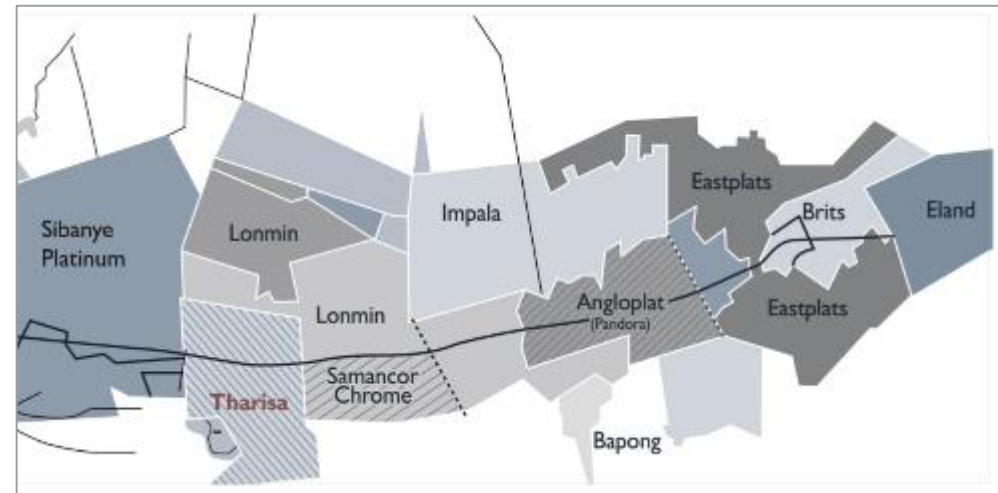
# THARISA – ADDING VALUE BEYOND MINING

ARXO METALS	ARXO RESOURCES	ARXO LOGISTICS	THARISA PROJECTS
<p><b>Rapid development of new processes and technology to enhance value</b></p> <ul style="list-style-type: none"><li>• Pilot testing technology with intent to commercialise for own use and third party applications</li><li>• Collaboration with North West University on various R&amp;D initiatives</li><li>• Development of the Vulcan fine chrome recovery process and commissioning of a demonstration plant</li><li>• Development and operation of the Challenger plant to recover specialty grade chrome concentrates</li><li>• Commissioning of 1 MW PGM DC smelter and first production of PGM rich alloy</li></ul>	<p><b>Marketing and sales of own and third party products</b></p> <ul style="list-style-type: none"><li>• Significant trader of chrome concentrates to China</li><li>• Third party trading</li><li>• Global reach for speciality chrome concentrates</li><li>• Long-term offtake agreement with Tisco JV</li></ul>	<p><b>Logistics of product from mine to end user</b></p> <ul style="list-style-type: none"><li>• Road/rail transport, warehouse and port facilities for bulk chrome concentrates</li><li>• Road transport of PGMs</li></ul>	<p><b>Responsible for identifying and implementing projects and technologies aimed at diversifying the business</b></p> <ul style="list-style-type: none"><li>• 26.8% shareholding in Karo Mining Holdings, developing an integrated PGM project in Zimbabwe</li><li>• Application, approval and development of Karo Special Economic Zone</li><li>• 90% option over Salene Chrome, a chrome exploration project in Zimbabwe</li><li>• 70% call option over Salene Manganese, a producing mine in the Northern Cape</li><li>• Karo Power, a 300MW solar power project in Zimbabwe</li></ul>

# LOCATED IN THE MAIN PGM AND CHROME PRODUCING AREAS

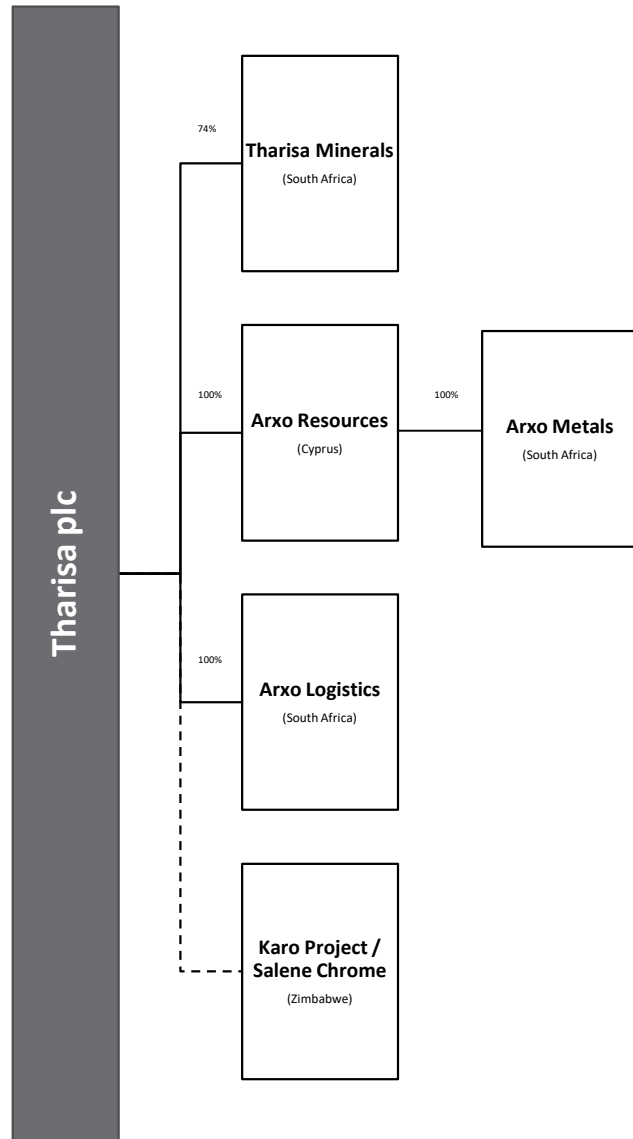


- Mining rights over 5 475 ha
- Adjacent to Sibanye Platinum, Lonmin, Impala Platinum, Samancor Chrome
- Well serviced by road, rail, power and other services
- Neighbouring towns are Brits (45 km) and Rustenburg (35 km)





# CORPORATE STRUCTURE AND SHAREHOLDERS



## Top 20 November 2019

1	Medway Developments Limited	41.34
2	Rance Holdings Ltd.	15.02
3	Fujian Wuhang Stainless Steel Products Co. Ltd.	10.40
4	FIL Investment Advisors (UK) Ltd.	8.28
5	Maaden Invest Ltd.	4.11
6	Friedshelf 1525 Pty Ltd	2.47
7	BlackRock Investment Management (UK) Ltd.	2.07
8	Tharisa Plc	2.06
9	Altius Investment Holdings (Pty) Ltd.	2.00
10	Huachuang Singapore Pte Ltd.	1.92
11	Swiss-Asia Financial Services Pte Ltd.	1.00
12	China Tonghai Securities Ltd.	1.00
13	Retail Investors	0.81
14	Hargreave Hale Ltd.	0.64
15	Old Mutual Investment Group (Pty) Ltd.	0.49
16	David Fraser	0.47
17	Old Mutual Customised Solutions (Pty) Ltd.	0.42
18	Tharisa Plc Share Scheme	0.41
19	Phillip Private Equity Pte Ltd.	0.28
20	Michael Jones	0.13
<b>Top 20</b>		<b>95.31</b>



# THARISA'S JOURNEY

## DISCOVERING



PROSPECTING  
RIGHTS  
APPLICATIONS

PROSPECTING  
RIGHTS  
GRANTED

MINING  
RIGHTS  
GRANTED

## DEVELOPING



FIRST  
CHROME  
CONCENTRATE  
PRODUCTION  
FROM PILOT  
PLANT

GENESIS  
PLANT  
COMMISSIONED

VOYAGER  
PLANT  
COMMISSIONED

CHALLENGER  
PLANT  
COMMISSIONED

## DELIVERING



LISTED ON JSE

LISTED ON LSE

INCREASED  
DIVIDEND

RECORD  
PRODUCTION

DIVIDEND PAYMENT

MAIDEN  
INTERIM  
DIVIDEND

# DELIVERING VISION 2020

## GRADE IMPROVEMENT

- Opening full mining strike length
- Maintain correct multi-reef layer profile
- Culture of continuous improvement
- Ensure stable feed grades for processing
  
- Increase of rougher feed grade to +1.6 gpt to yield an additional ~20 kozpa PGMs

## PGM OPTIMISATION

- Improving PGM recoveries at Voyager Plant by upgrading current circuits, installing new capacity
  
- Increased production of ~14 kozpa PGMs

## 4th STAGE CRUSHING

- Additional crushing circuit at Genesis Plant to increase plant throughput
- Commissioned post FY2019
  
- Increased production of ~61 ktpa of chrome concentrates and ~2 kozpa of PGMs

## VULCAN PLANT

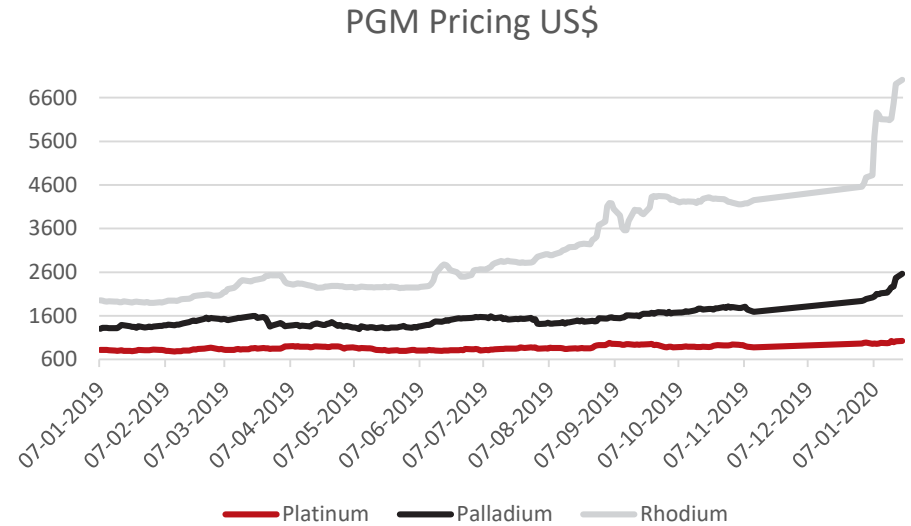
- Fine chrome recovery plant
- Proprietary process developed by Arxo Metals
- DFS completed
- Construction has commenced
  
- Potential to produce additional ~400 ktpa of chrome concentrates

Increased mill throughput of 5.6 Mtpa, PGM recoveries of 85% and chrome recoveries of 82%

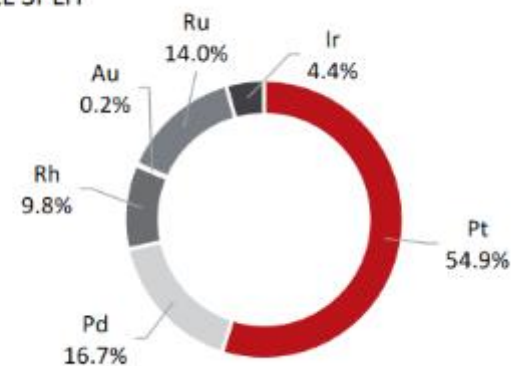
# OPERATIONAL PERFORMANCE – Q1 2020 PRODUCTION

## Q1 2020 PRODUCTION

- Reef tonnes mined 1 143.0 kt and tonnes milled 1 247.1 kt
- Stripping ratio of 10.9 m<sup>3</sup>:m<sup>3</sup>
- Platinum Group Metals ('PGMs') recovery at 82.2% with production of 34.4 koz on a 6E basis
- Chrome recovery at 63.1% with concentrate production of 342.5 kt
- Record PGM metal basket price at US\$1 406/oz, an increase of 16.1% over the quarter
- Average chrome price received for the quarter was US\$145/t
- Unprecedented inclement weather and electricity load shedding by Eskom impacted production



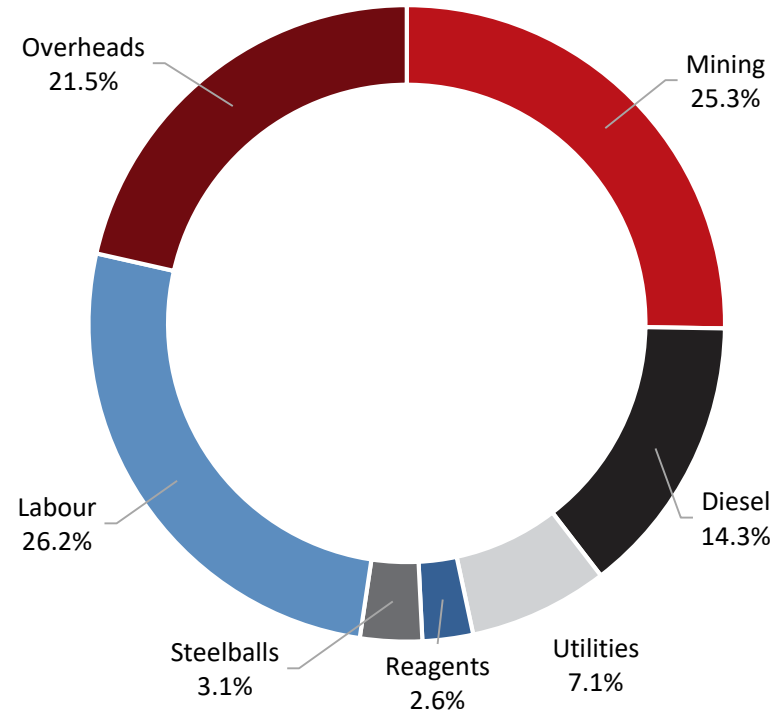
## THARISA PRILL SPLIT



# COSTS

- On a unit cost basis, the reef mining cost per tonne increased by 17.6% from US\$21.0/t to US\$24.7/t
  - This cost per reef tonne was incurred on a stripping ratio of 8.3 (m<sup>3</sup> waste: m<sup>3</sup> reef)
  - In-pit material of 1.7 Mm<sup>3</sup> excluded from stripping ratio
- Cash cost per tonne milled (excluding transport and freight) increased by 11.7% from US\$37.5/t to US\$41.9/t
- Chrome selling costs increased marginally by 1.6% from US\$62.0/t to US\$63.0/t

## ON MINE CASH COST OF SALES

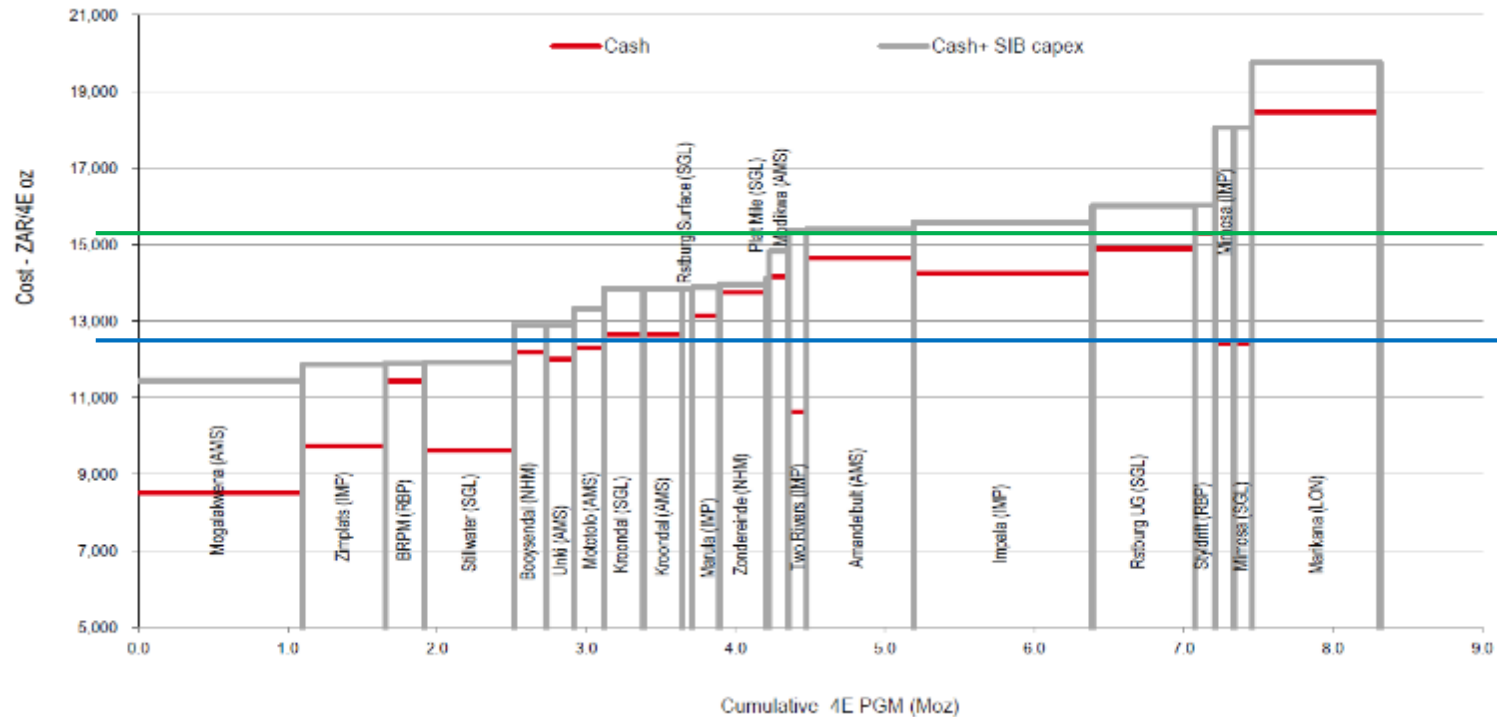


By product basis		FY2019	FY2018
All in cost per Pt ounce sold	US\$/oz	715.7	125.3
All in cost per 42% chrome tonne sold	US\$/t	146.4	117.4

*All in cost includes operating cost, administration costs and capital*

# INDUSTRY POSITION - PGMS

- Tharisa all in cost per PGM ounce sold – USD892.1/oz on a by product basis for FY2019
- Realised price FY2019



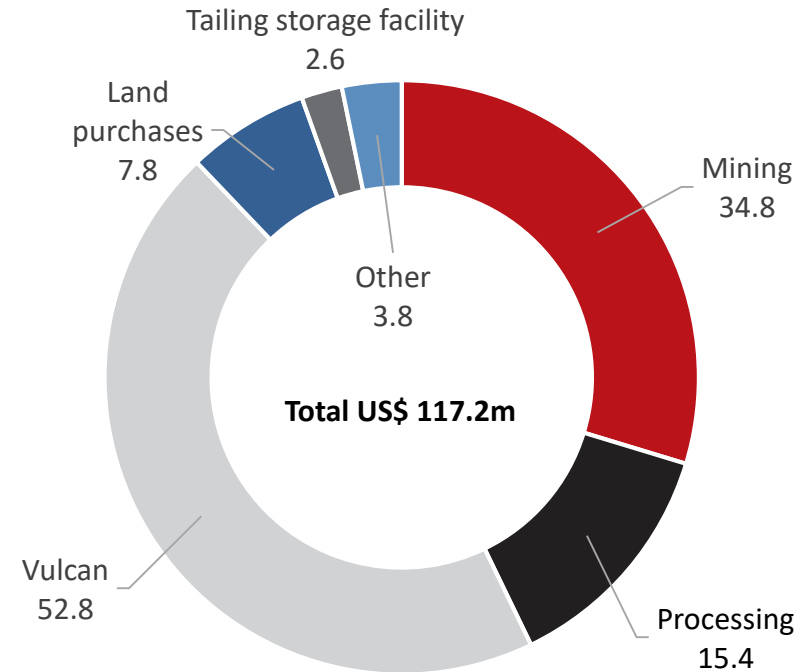
No chrome cash cost curves are available

Source: HSBC Equities Research Note October 2019

# CAPEX

- FY2019 capex spend focused on
  - stay in business capex
  - mining fleet additions to optimise the fleet
  - ongoing projects aimed at improving recoveries of both PGMs and chrome concentrates
- Additions to PPE amounted to US\$43.9 million of which US\$27.5 million related to additions to the mining fleet
- The depreciation charge amounted to US\$27.2 million (FY2018: US\$29.9 million)
- Negotiations for separate Vulcan financing are ongoing

FY2020 CAPEX BUDGET  
(US\$m)

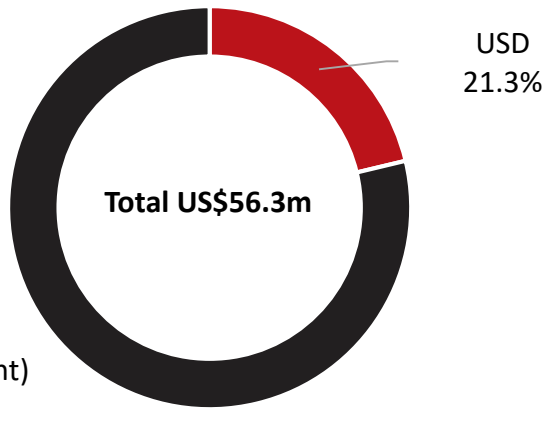


INVESTING FOR THE FUTURE

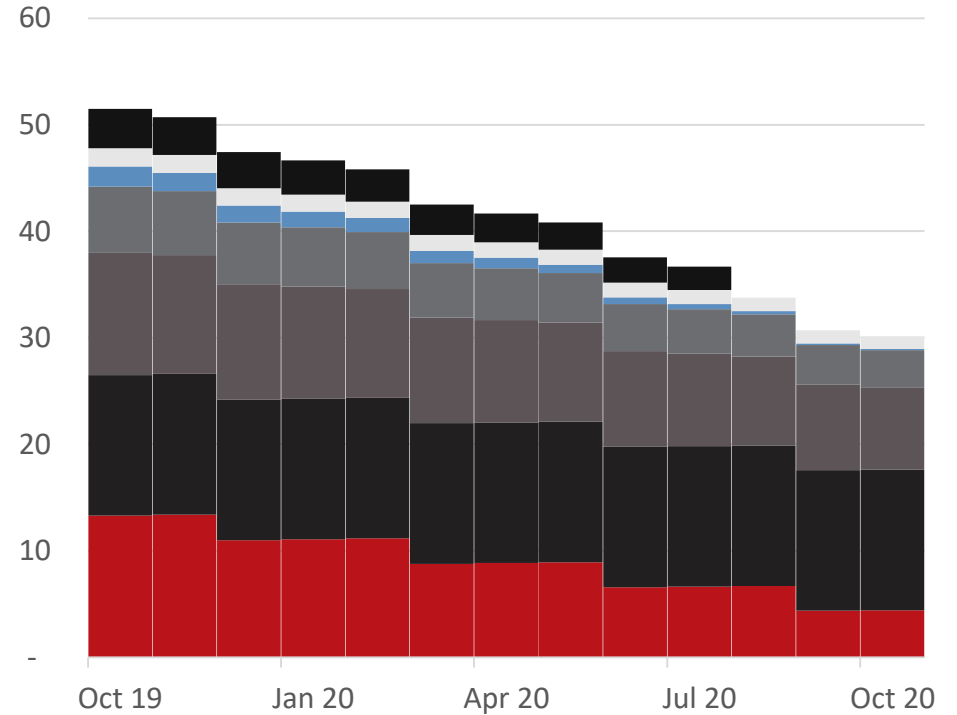
# BALANCE SHEET

- Total debt amounted to US\$71.2 million
  - Of this trade finance amounted to US\$14.9 million
- Debt to total equity ratio of 24.7%
- Cash and cash equivalent of US\$59.2 million
- Net debt to total equity ratio of 4.2%
- There is continued focus on working capital management, with the current ratio at 1.6 times

## DEBT PROFILE EXCLUDING TRADE FINANCE



## DEBT PROFILE\* (US\$m)

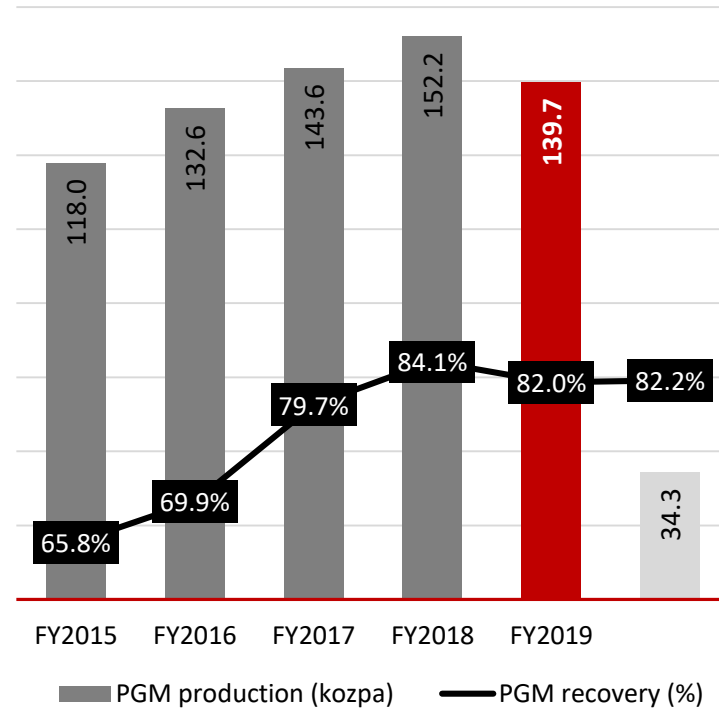


\*Excluding trade finance and Vulcan project funding

# PRODUCTION - PGM

- Reduced ROM had a direct effect on PGM volume output
- PGM recoveries down by 2.3% year on year
- Rougher feed grade marginally lower at 1.47 g/t (1.51 g/t)
- Post year end PGM optimisation completed

PGM PRODUCTION  
(koz)

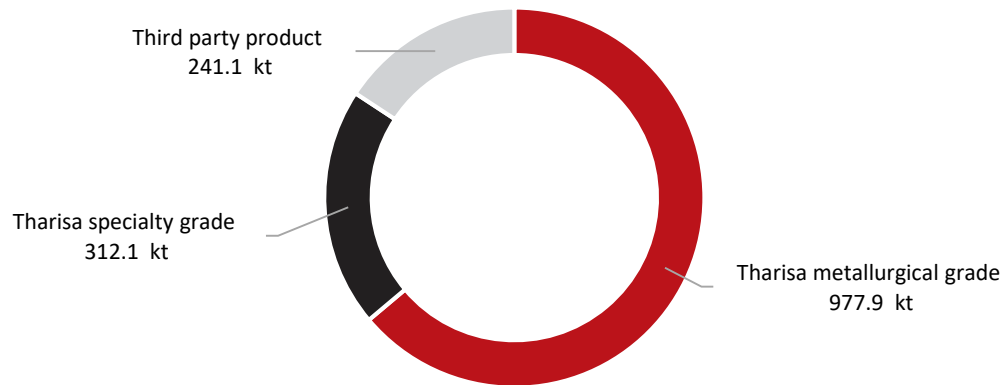




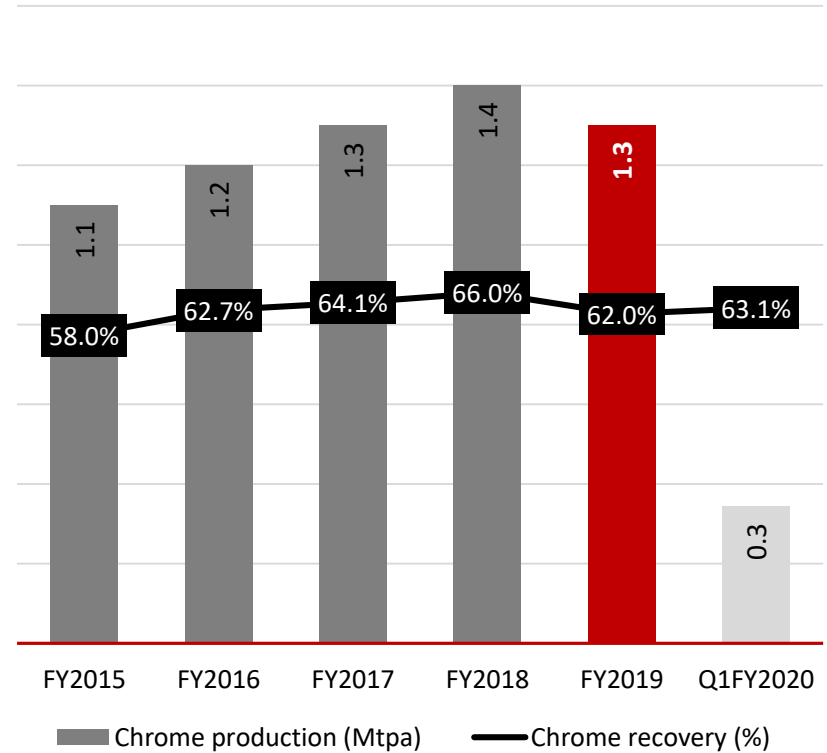
# PRODUCTION - CHROME

- Pit redesign had an effect on stockpile development and thus ROM grade fed into the plant
- Curtailed ROM had a direct effect on chrome production
- Year on year production down 10.9% to 1.29 Mt

PRODUCTION FY2019



CHROME PRODUCTION (Mt)



# EXPLORATION PROJECTS

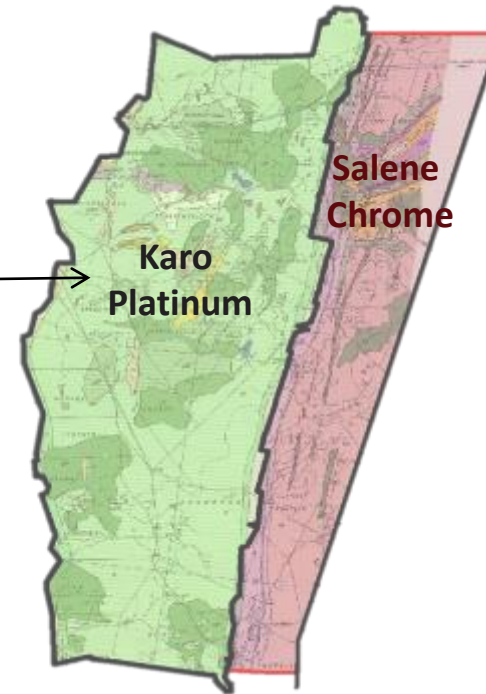
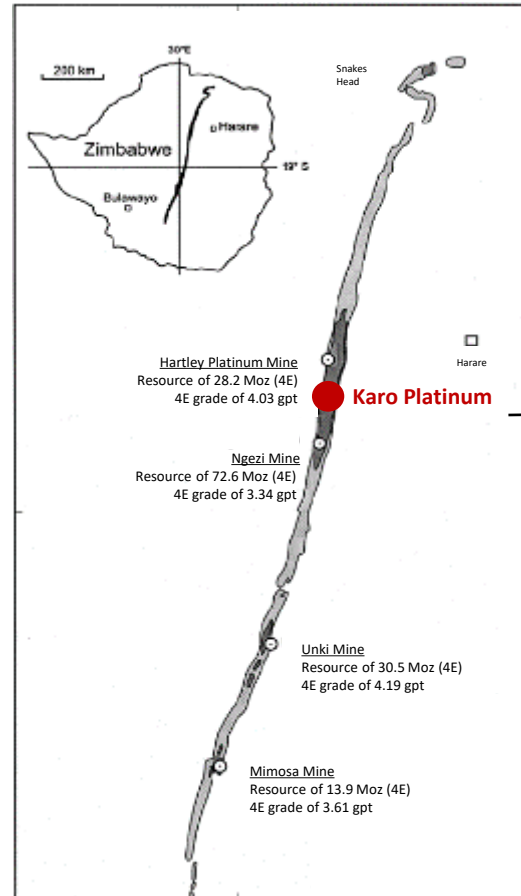
DEVELOP

**DIVERSIFICATION**  
FROM SINGLE ASSET

HIGHLY  
**PROSPECTIVE**  
AREA

**MINERAL RICH**  
GEOGRAPHY

**LARGE SCALE**



PRODUCT  
**EXPANSION**

FURTHER  
**GROWTH**  
OPPORTUNITIES

STRONG  
**CASH GENERATION**  
POTENTIAL

**LOW COST**  
PRODUCTION

Source: [https://www.researchgate.net/figure/Generalized-geology-of-the-Great-Dyke-and-locations-of-platinum-mines-and-prospects\\_fig1\\_235917128](https://www.researchgate.net/figure/Generalized-geology-of-the-Great-Dyke-and-locations-of-platinum-mines-and-prospects_fig1_235917128) and Company Data

# ZIMBABWE DEVELOPMENTS

- Tharisa owns 26.8% of Karo Mining Holdings
- 238 boreholes completed – 32 400 m drilled
- Drilling focused on western boundary of the Great Dyke
  - average depths of 50 m to 150 m below surface targeted
- Special Economic Zone awarded
- Resource and reserve statement due January 2020
  - extended drill program
- Staged development approach
  
- Tharisa has an option over Salene Chrome
- 78 boreholes completed – 3 000 m drilled
- Mining contractor award underway
- Targeting 10 ktpm initial lumpy production
- Local sales but export logistics being explored



# SALENE CHROME

---

*DEVELOP*

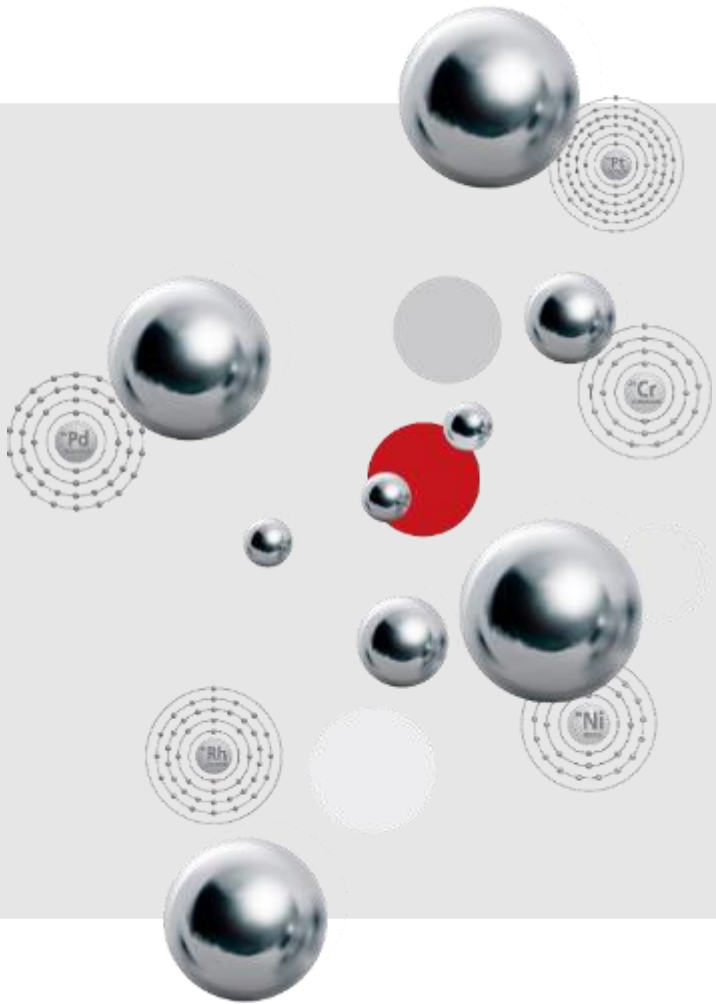
- Tharisa has an option to acquire majority stake
- 78 boreholes completed – 3 000 m drilled
- Simple surface mining and gravity separation
- Lumpy ore production with potential local offtake
- Export options being explored



tharisa



MINING





# FLEET CAPACITY



## DRILL

- 13 OB drill rigs
- 12 IB/reef drill rigs
- Capable of drilling +100 km pm



## BLAST

- Blasting is outsourced



## LOAD

- 10 excavators and 2 face shovels
- Capable of loading +1.8 Mm<sup>3</sup> pm



## HAUL

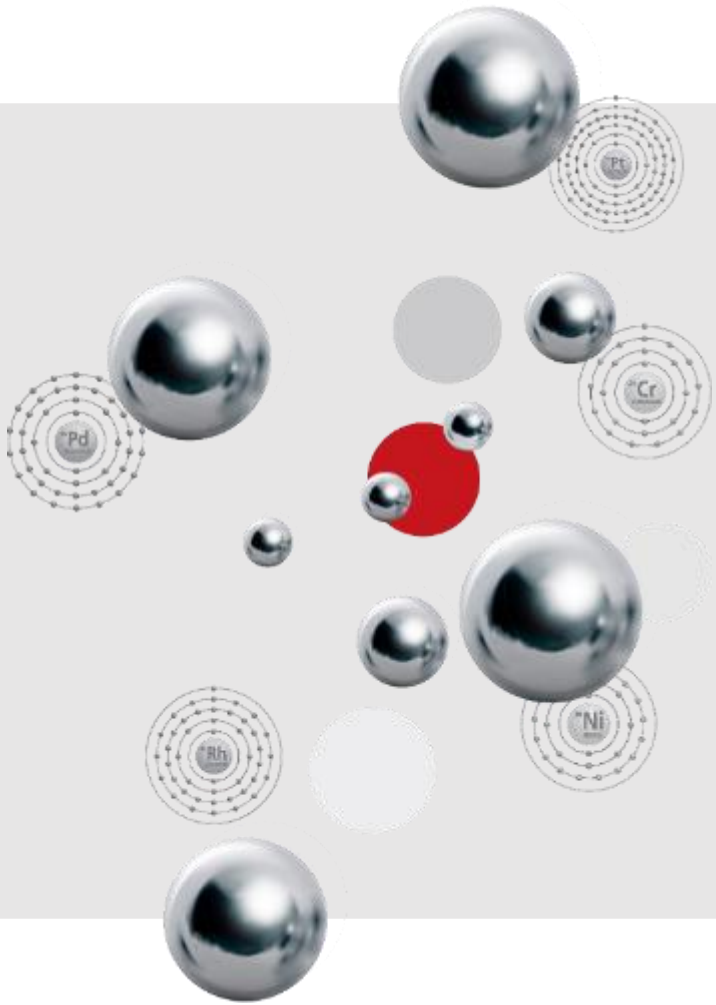
- 54 haul trucks
- CAT777 for IB/reef
- CAT785/789 for OB
- Capable of hauling +1.7 Mm<sup>3</sup> pm

Current fleet capable of mining the 5.6 Mtpa of reef and more than the life of mine average stripping ratio to meet Vision 2020 targets

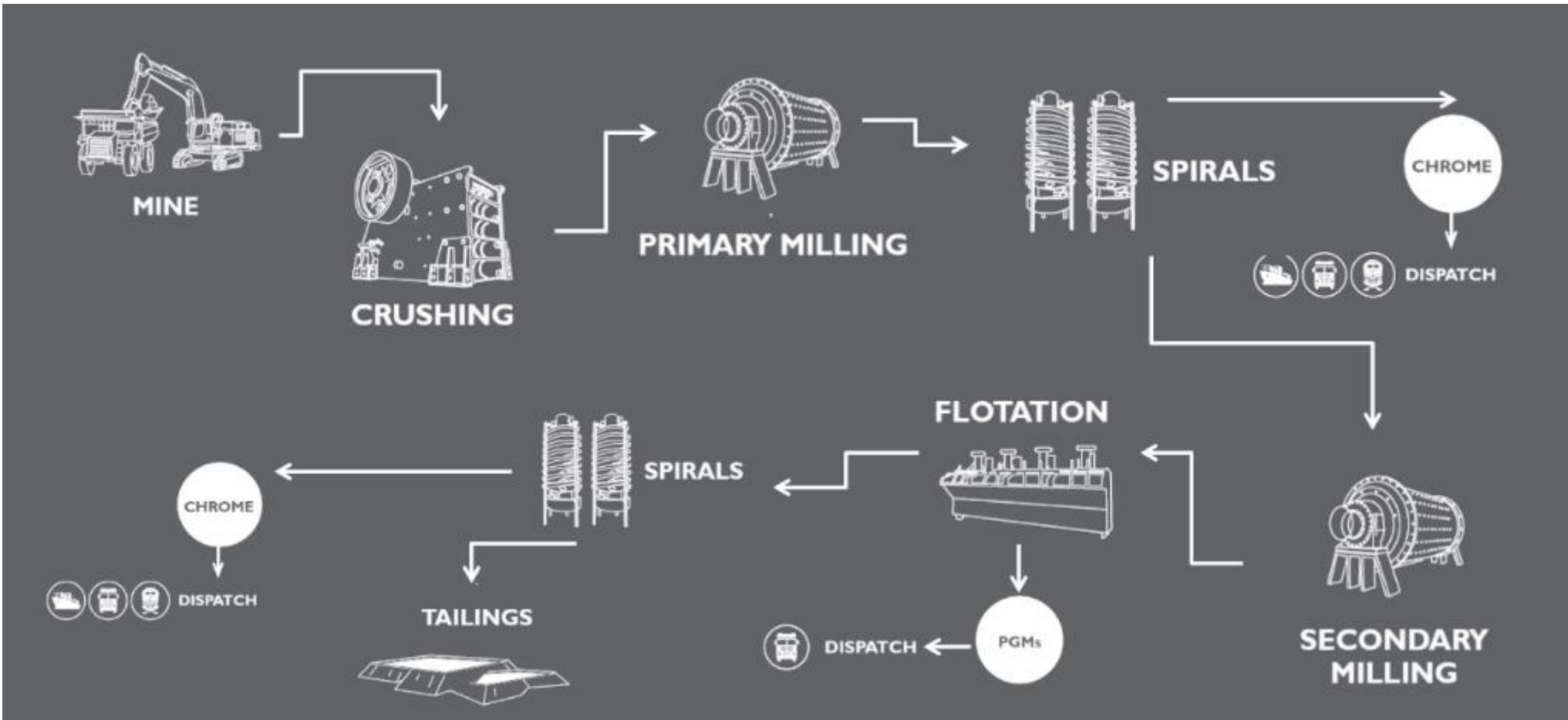
tharisa



PROCESSING



# INNOVATIVE APPROACH





# PROCESSING

## GENESIS PLANT

- Nameplate capacity: 100 ktpm ROM
- Processes reef layers with lower PGM and higher chromite grades
- MG1 and MG4a horizons
- Challenger Plant recovers high value foundry grade and chemical grade chrome concentrates



## VOYAGER PLANT

- Nameplate capacity: 300 ktpm ROM
- Processes reefs with higher PGM and lower chromite grades
- MG2 MG3 MG4 horizons
- Produces both metallurgical and chemical grade products



## VULCAN PLANT

- Under construction
- Nameplate capacity: 340 ktpm ROM
- Proprietary ground-breaking use of existing technologies in fine chrome recovery
- Targeting improved chrome recovery from 65% to 82%



# DISCLAIMER

---

*These Presentation Materials are for information purposes only and must not be used or relied upon for the purpose of making any investment decision or engaging in any investment activity. Whilst the information contained herein has been prepared in good faith, neither Tharisa plc (the 'Company') and its subsidiaries (together, the 'Group') nor any of the Group's directors, officers, employees, agents or advisers make any representation or warranty in respect of the fairness, accuracy or completeness of the information or opinions contained in this presentation and no responsibility or liability will be accepted in connection with the same. The information contained herein is provided as at the date of this presentation and is subject to updating, completion, revision, verification and further amendment without notice.*

*These Presentation Materials contain forward-looking statements and information in relation to the Group. By its very nature, such forward-looking statements and information require the Company to make assumptions that may not materialise or that may not be accurate. Such forward-looking information and statements involve known and unknown risks, uncertainties and other important factors beyond the control of the Company that could cause the actual performance or achievements of the Company to be materially different from any future results, performance or achievements expressed or implied by such forward-looking information and statements. Nothing in this presentation should be construed as a profit forecast. Past share performance cannot be relied on as a guide to future performance.*