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ANALYST PRESENTATION
JANUARY 2019

Discover Develop Deliver



SAFETY AND SUSTAINABILITY

TWO YEAR WAGE AGREEMENT
CONCLUDED WITH AMCU

BEST IN CLASS AWARD AT
MINESAFE

4 000 FATALITY FREE
PRODUCTION SHIFTS

0.17

LTIFR

LOST TIME INJURY FREQUENCY RATE

31 December 2018

3

YEARS FATALITY FREE

2

SAFETY AWARDS

4

ENGINEERING LEARNERSHIPS

21

INTERNS AND GRADUATES

82

ADULT EDUCATION AND TRAINING LEARNERS



THARISA – AN OVERVIEW

THARISA MINERALS

RESOURCE

860.6 Mt resource
92.9 Mt reserve of which 74.2 Mt open pit

MINING

15 year open pit LOM
40 year underground extension

PROCESSING

400 ktpm nameplate capacity
Genesis Plant (100 ktpm)
Voyager Plant (300 ktpm)

LARGE SCALE

One of the world's largest single chrome resources

MECHANISED

Mechanised open pit mining with a skilled and focused labour force
Owner mining model

DERISKED

In production, major capex complete
FY2019 forecast production of 150 to 160 koz PGMs and 1.4 to 1.5 Mt of chrome concentrates

Open pit PGM and chrome concentrate co-producer with an integrated marketing, sales, and logistics platform

THARISA – ADDING VALUE BEYOND MINING

ARXO METALS

BENEFICIATION

Production of specialty grade chrome concentrates

Operates the Lonmin K3 UG2 chrome plant producing +20 ktpm of chrome concentrate

R&D

New technology assessment
1 MW PGM smelter

ARXO RESOURCES / ARXO LOGISTICS

MARKETING AND SALES

Significant trader of chrome concentrates to China
Third party trading
Global reach for specialty chrome concentrates

LOGISTICS

Road/rail transport, warehouse and port facilities for bulk chrome concentrates
Road transport of PGMs

PROJECTS

ZIMBABWE

26.8% shareholding in Karo Mining Holdings, developing the integrated PGM project in Zimbabwe

Salene Chrome illuvial chrome exploration project

CUSTOMERS

AGREEMENTS

PGM offtake– Impala Platinum and Lonmin
Specialty offtake/agency – Rand York Metallurgical agency – Noble Group
Strategic agreement – Tisco JV
Relationships with stainless steel and ferrochrome producers and global commodity traders

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MINING

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MINING

RESOURCES AND RESERVES

Mining rate of 5.2 Mtpa with an average stripping ratio of 9.5 (m³:m³ basis)

MINERAL RESOURCE

- 860.7 Mt
- 1.54 g/t 5PGE+Au
- 20.1% Cr₂O₃

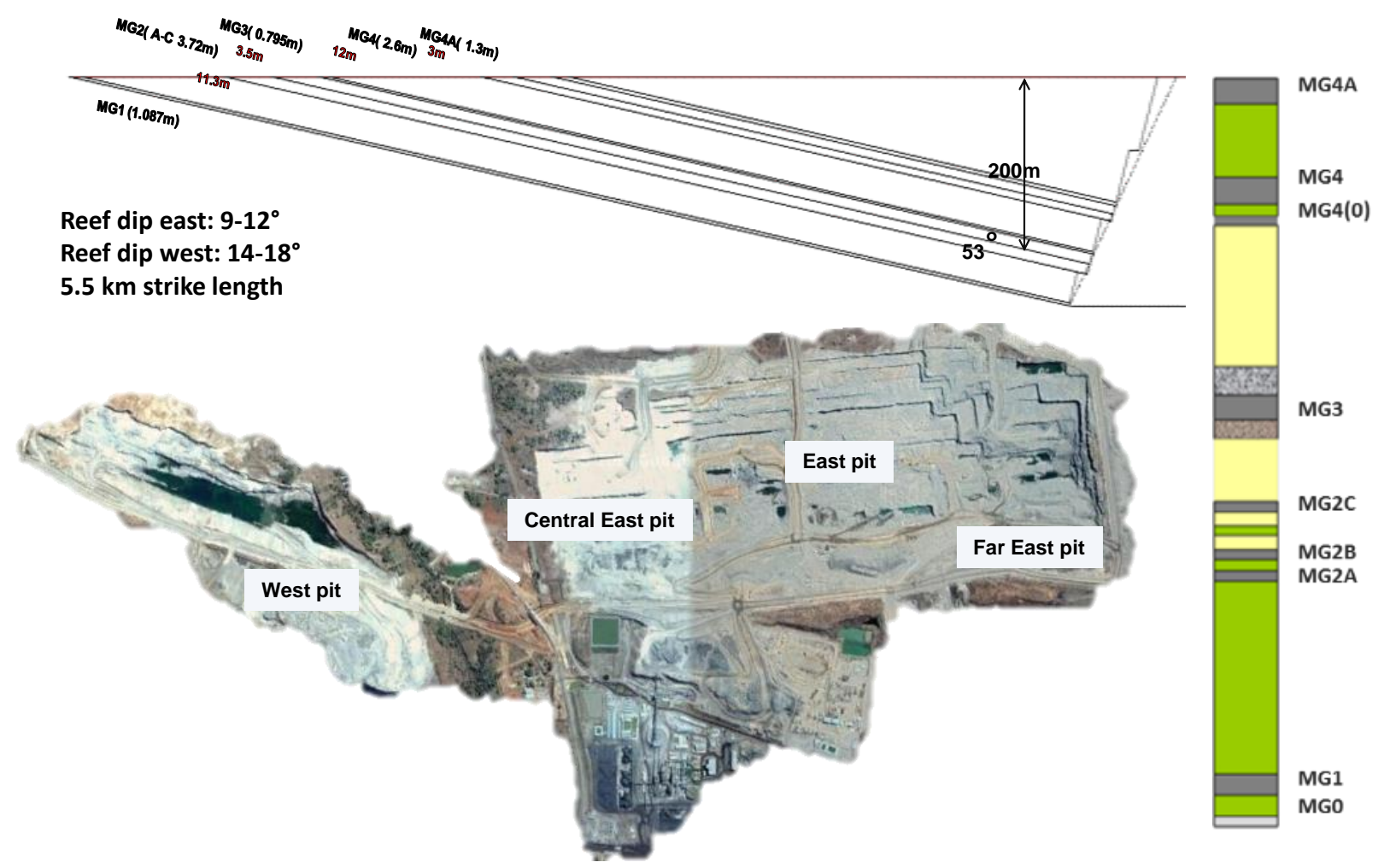
MINERAL RESERVE

- 92.9 Mt
- 1.39 g/t 5PGE+Au
- 18.9% Cr₂O₃

OPEN PIT MINERAL RESERVE

- 74.2 Mt
- 1.39 g/t 5PGE+Au
- 18.9% Cr₂O₃

GENERALISED CROSS SECTION SHOWING MG CHROMITITE LAYERS (AT PLANNED DEPTH)



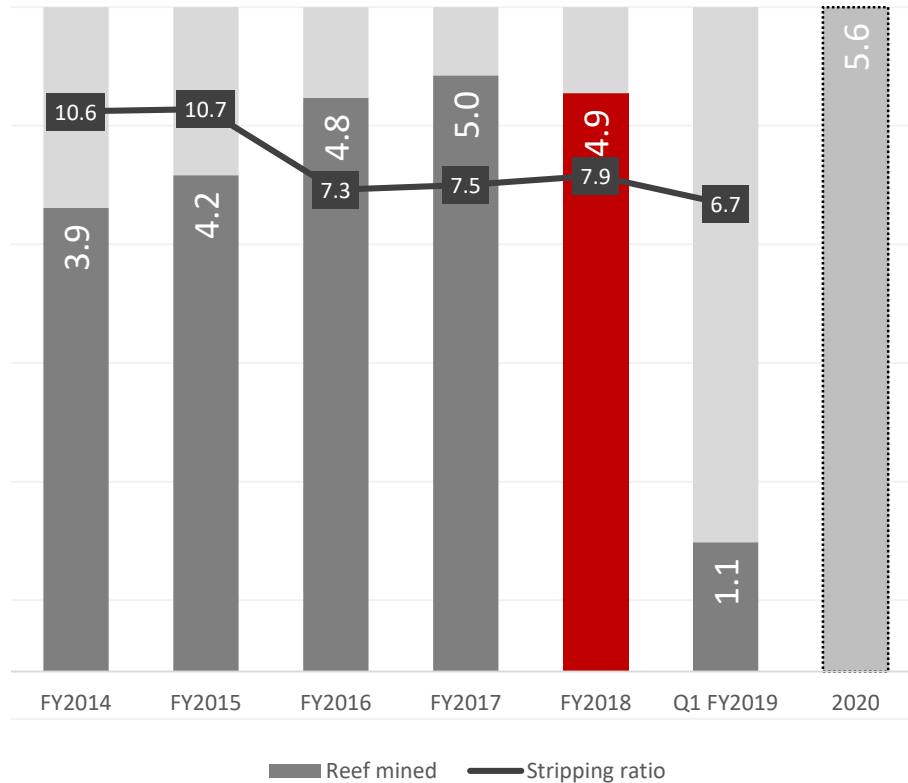
MINE PLAN – CURRENT POSITION





REEF MINED

[Mtpa]



- Reef mined decreased by 7.6% quarter on quarter
- Comprehensive maintenance programme implemented to return fleet to OEM standards, which reduced availability in FY2018 and in Q1 FY2019
- Transitioned to 24 hour, four shift operations, which will increase production capability by approximately 15%
- Grade control initiatives have yielded positive results
- FY2019 will focus on improving efficiencies in drill and blast operations – three additional drill rigs are on site
- New Caterpillar 6050 face shovel commissioned to increase waste removal capacity as part of the planned asset replacement programme

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 1 face shovel
- > Capable of loading +1.8 Mm³ pm



HAUL

- > 55 haul trucks
- > CAT777 for IB/reef
- > CAT785/789 for OB
- > Capable of hauling +1.7 Mm³ 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

OPENING OF THE WESTERN CORNER OF THE EAST PIT



CHANGING OF IN PIT HAUL ROADS

July 2018



January 2019



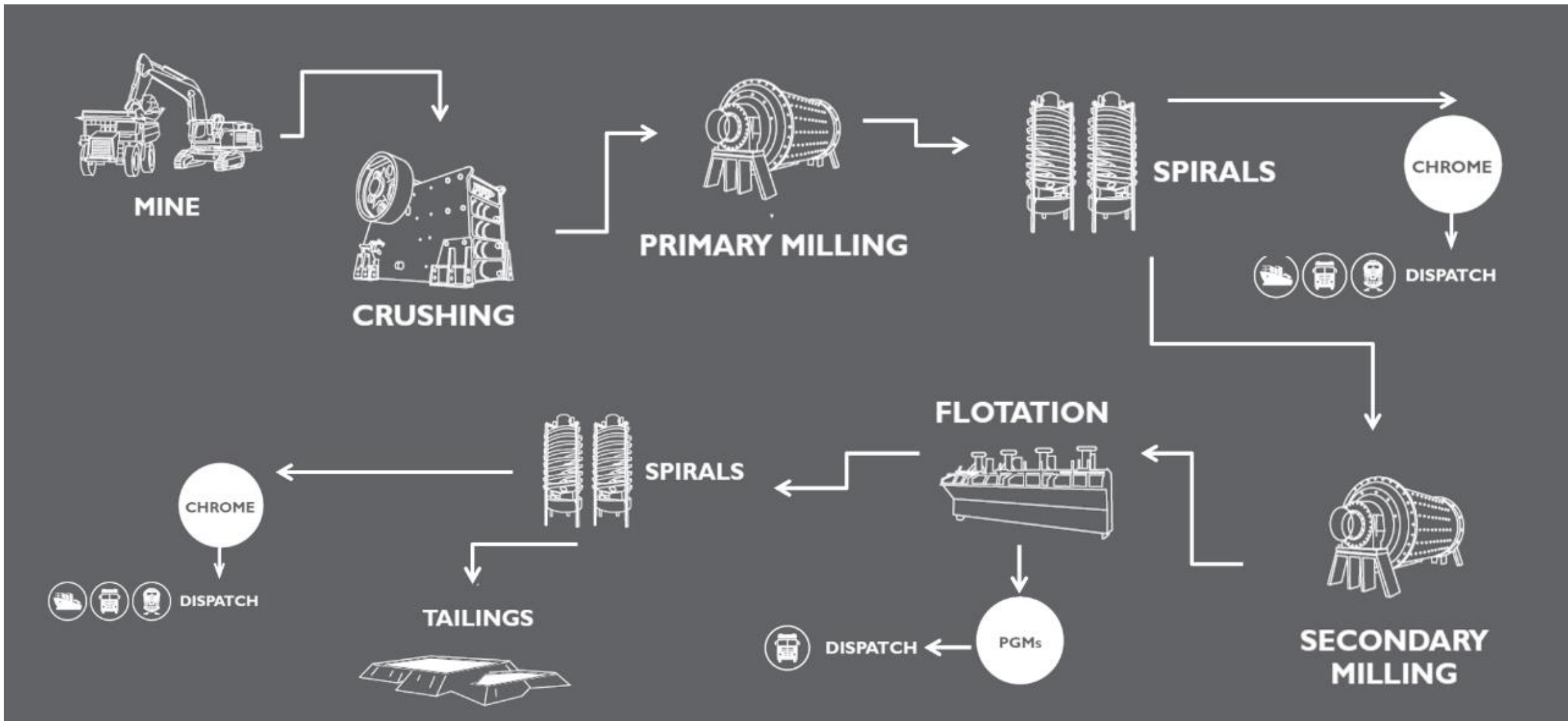
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PROCESSING

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INNOVATIVE APPROACH



GENESIS PLANT

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



VOYAGER PLANT

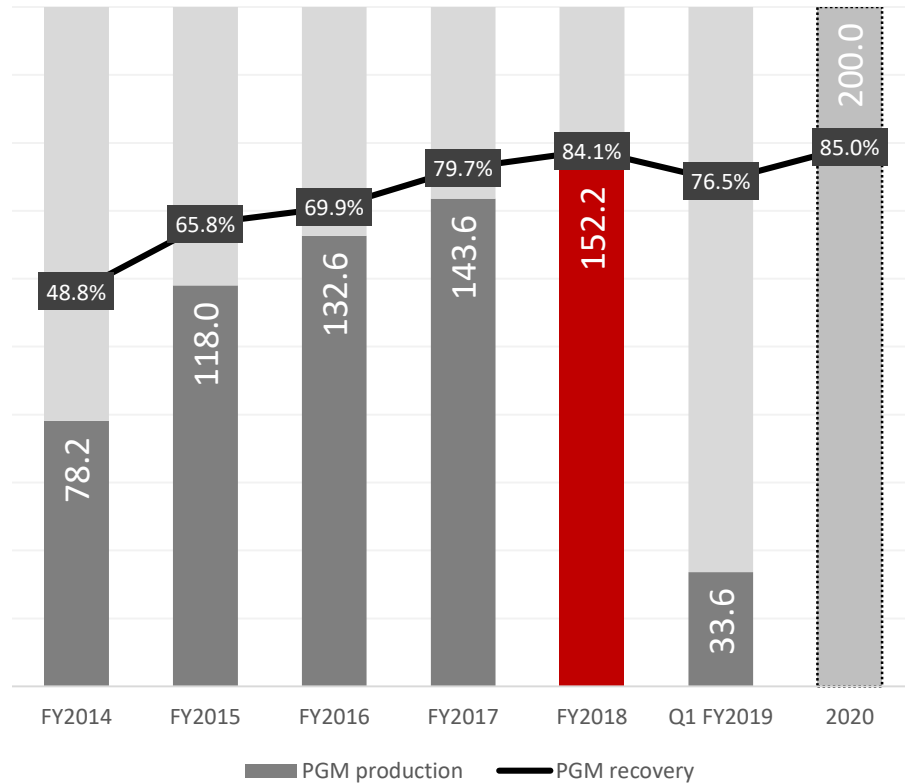
- > Nameplate capacity: 300 ktpm ROM
- > Processes reefs with higher PGM and lower chromite grades
- > Produces both metallurgical and chemical grade products



PRODUCTION - PGM

PGM PRODUCTION

[kozpa]



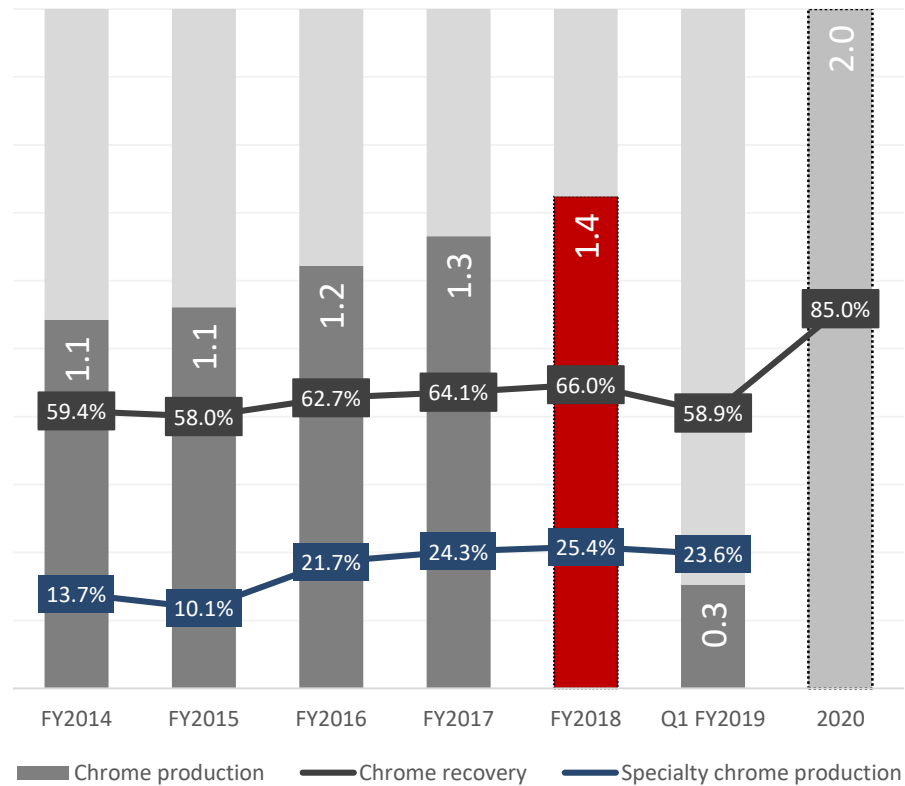
- PGM production decreased by 5.9% quarter on quarter to 33.6 koz
- PGM rougher feed grade of 1.59 g/t (Q4 FY2018: 1.48 g/t)
- Reduced recoveries by 9.0% to 76.5%, due to processing of commissioning tailings in the quarter



PRODUCTION - CHROME

CHROME PRODUCTION

[Mtpa]



- Chrome concentrate production decreased by 10.0% quarter on quarter to 305.4 kt
- Cr_2O_3 ROM grade of 18.5% (Q4 FY2018: 18.3%)
- Chrome recoveries reduced by 8.7% quarter on quarter to 58.9%, due to the processing of commissioning tailings in the quarter
- Specialty grade chrome concentrate production of 72.0 kt



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MARKET REVIEW

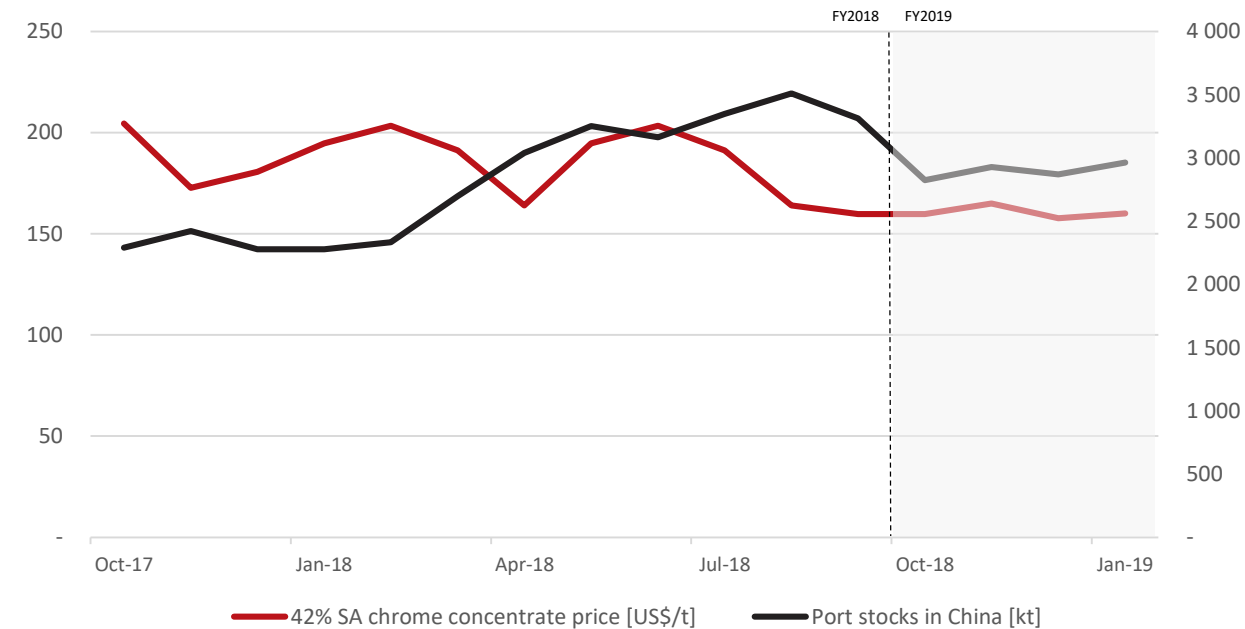
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CHROME MARKET

DEMAND AND SUPPLY

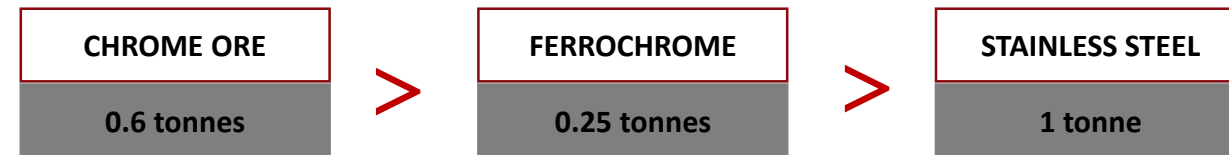
- Demand for metallurgical grade chrome concentrate is mainly driven by its use in the manufacture of stainless steel
- China is wholly dependent on imports of chrome ores
- Spot chrome prices traded between US\$156/t and US\$240/t, current market pricing is US\$160/t
- Chrome stocks at Chinese ports remain below the 3.0 Mt mark at 2.8 Mt – almost two and half months' supply
- Indonesian installed annual stainless steel melt capacity of 2.0 Mt, with a further 1.0 Mt being brought online

MARKET PRICES AVERAGE MONTHLY



CHEMICAL GRADE
 Cr_2O_3 – 45% to 47%
 SiO_2 <1.2%
 Used to produce sodium dichromate used in leather tanning, pigments and plating

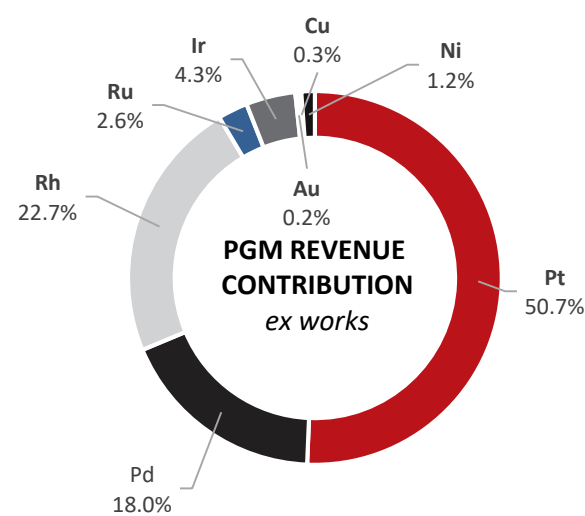
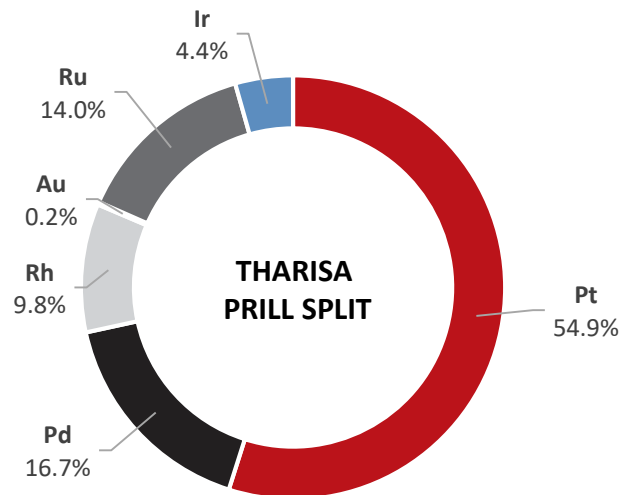
FOUNDRY GRADE
 Cr_2O_3 >46%
 SiO_2 <1.0%
 Used in moulds for metal castings and nozzle sands



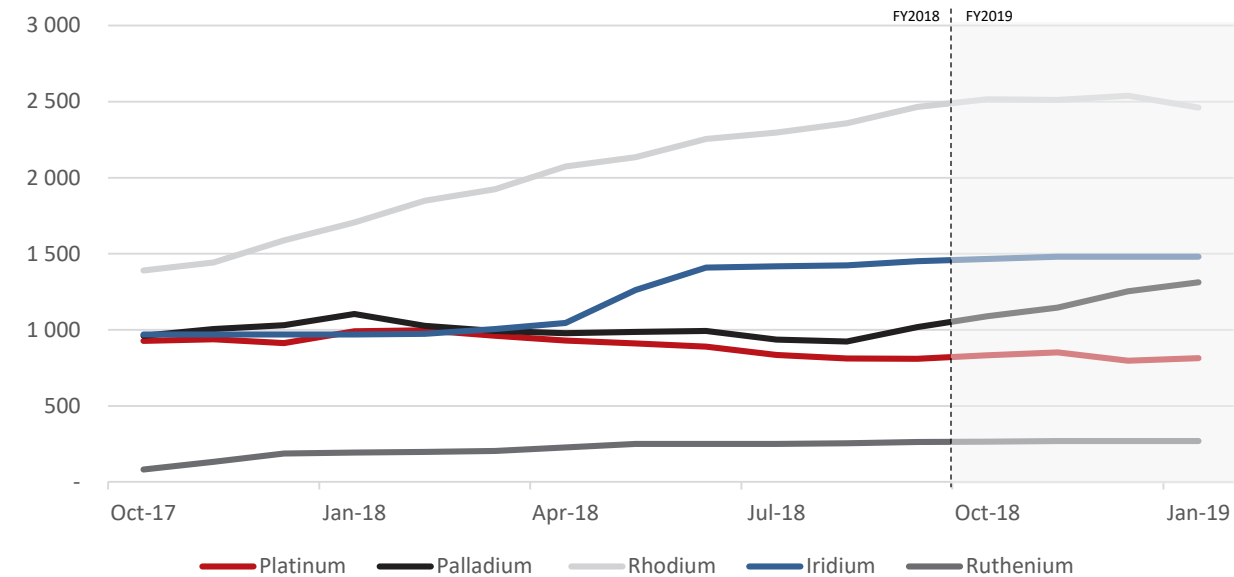
PGM MARKET

PGM DEMAND AND SUPPLY

- Vital industrial metals largely used in automotive catalytic converters, other drivers of demand include jewellery, industrial uses and investment
- Platinum demand is expected to marginally weaken in 2018, while forecast demand for palladium and ruthenium is set to increase
- Further advances in the deployment of fuel cell technologies are likely to see a rise in platinum demand
- Increased promotion of platinum jewellery in China



MARKET PRICES



CHANGE IN AVERAGE MARKET PRICE FROM FY2017 TO FY2018

Platinum	↓5.2%
Palladium	↑24.9%
Rhodium	↑111.2%
Iridium	↑40.9%
Ruthenium	↑297.2%

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STRATEGY IMPLEMENTATION

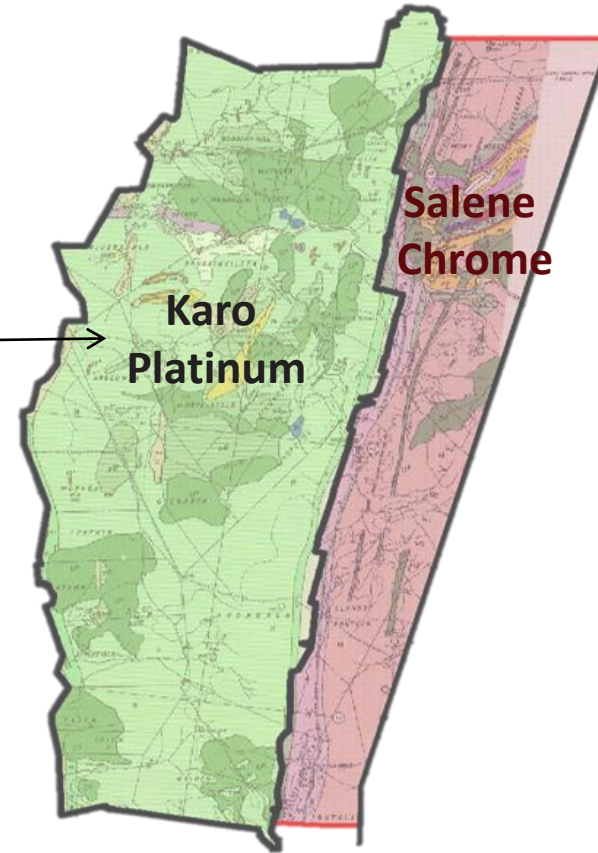
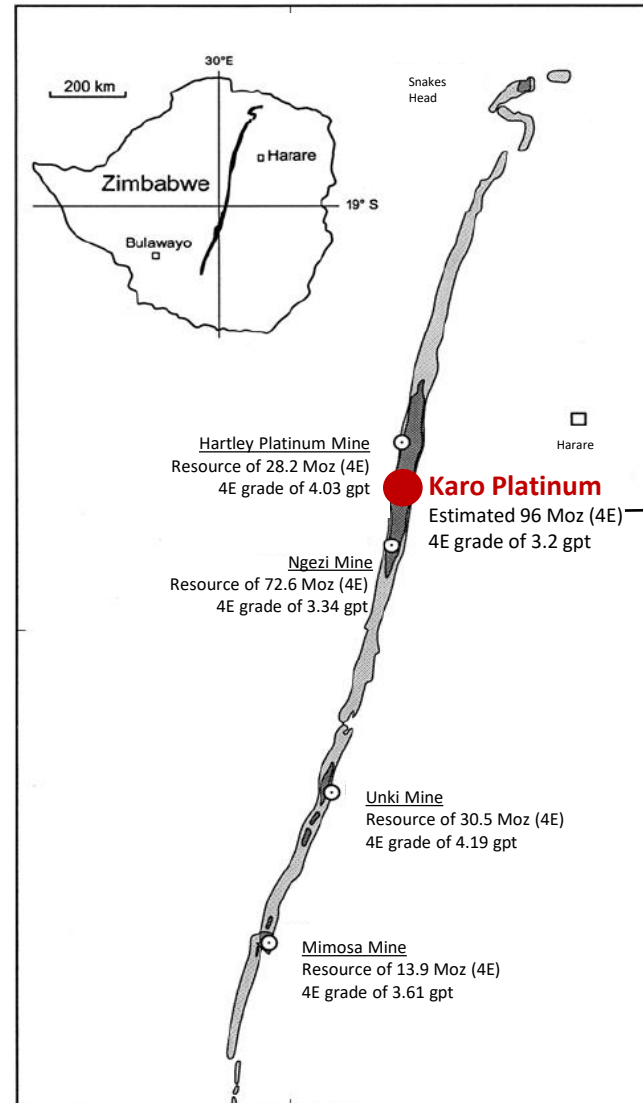
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DIVERSIFICATION
FROM SINGLE ASSET

HIGHLY
PROSPECTIVE
AREA

MINERAL RICH
GEOGRAPHY

LARGE SCALE



PRODUCT
EXPANSION

FURTHER
GROWTH
OPPORTUNITIES

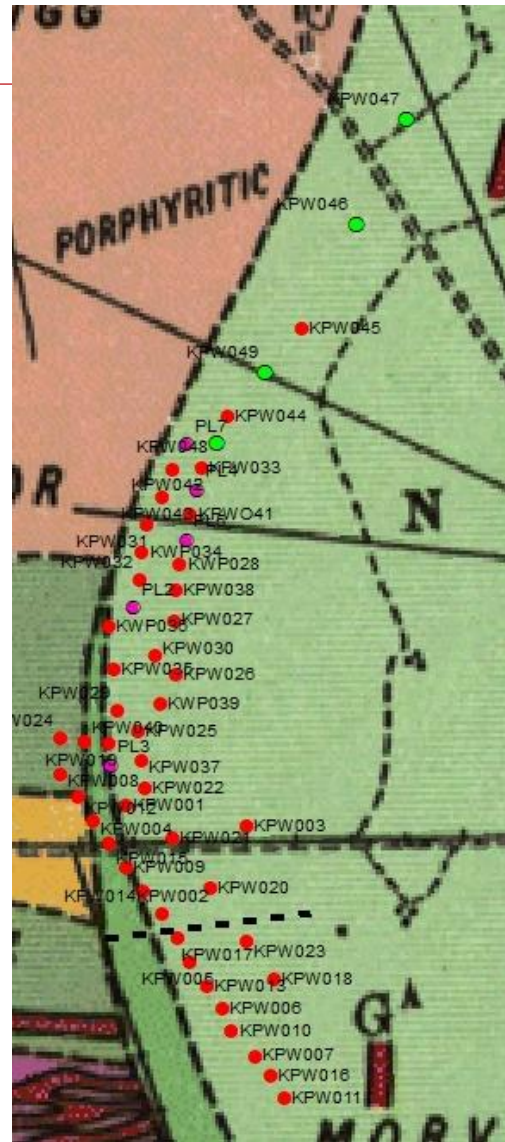
STRONG
CASH GENERATION
POTENTIAL

LOW COST
PRODUCTION

Source: https://www.researchgate.net/figure/Generalized-geology-of-the-Great-Dyke-and-locations-of-platinum-mines-and-prospects_fig1_235917128 and Company Data

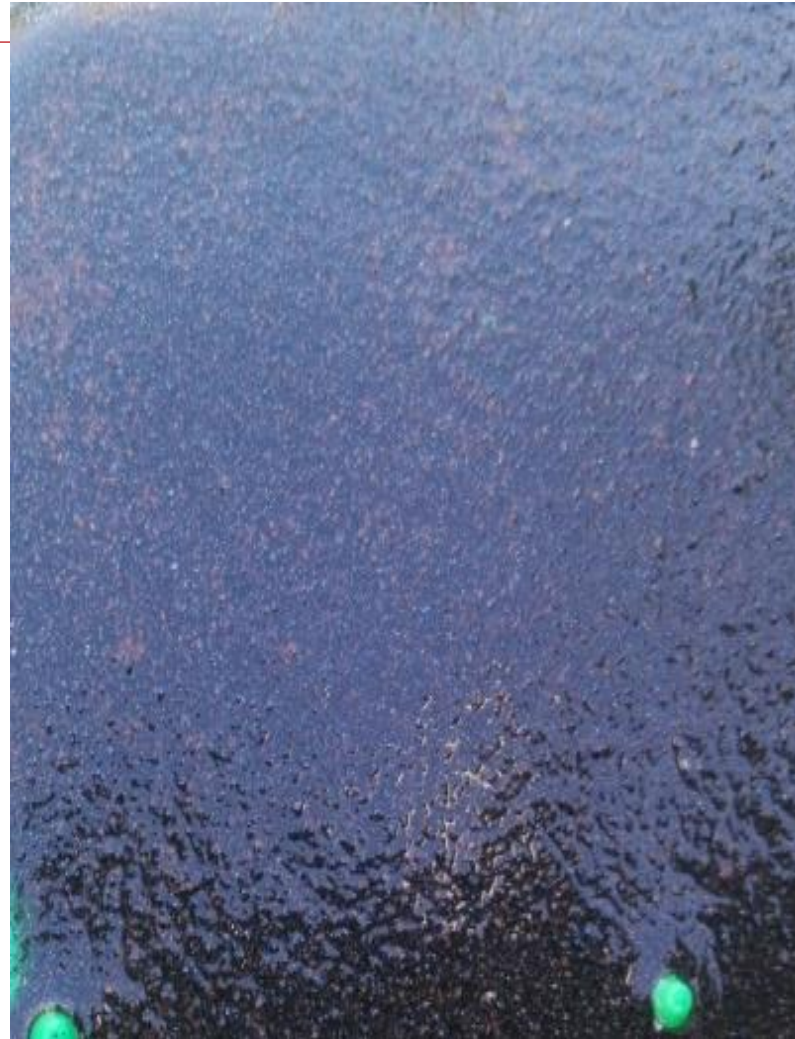
PROJECT PROGRESS

- Development permit awarded
- DTM and geophysics completed
- First 50 boreholes have been drilled, totaling over 7 600 m
- Almost all holes have intersected the Main Sulphide Zone
- Samples to be independently assayed
- Competent person appointed



PROJECT PROGRESS

- Development permit awarded
- DTM and geophysics completed
- First 10 trenches have been completed, totaling 3 000 m
- Sampling has commenced
- Samples to be independently assayed
- Competent person appointed
- Pitting targets identified and mobilising



RESEARCH AND DEVELOPMENT

- Successfully increasing the metal recoveries at the Genesis and Voyager Plants through continuous improvement
- The development of the Challenger Plant to recover specialty grade chrome concentrates
- Commissioning of 1 MW PGM DC smelter and first production of PGM rich alloy
- Development of the Vulcan fine chrome recovery process and commissioning of a demonstration plant
- Collaboration with North West University on various R&D projects

Development of our **beneficiation** capabilities

Development of **niche products** from our minerals

Development of **new markets** and uses



SMELTING PLANT

- Demonstration scale plant to prove downstream beneficiation process
- Currently operating at 100 tpm
- Producing PGM alloy
- Developing converting process and PGM refining process



FY2018
ACTUAL

ROM of 4.9 Mtpa
PGMs of 152.2 kozpa
Chrome concentrates of 1.4 Mtpa

FY2019
GUIDANCE

ROM of 5.2 Mtpa
PGMs of 150 to 160 kozpa
Chrome concentrates of 1.4 to 1.5 Mtpa

2020
TARGET

ROM of 5.6 Mtpa
PGMs of 200 kozpa
Chrome concentrates of 2.0 Mtpa

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
- > Phase 1 completed
- > Phase 2 commissioning FY2019
- > Increased production of ~14 kozpa PGMs

FOURTH STAGE CRUSHING

- > Additional crushing circuit at Genesis Plant to increase plant throughput
- > Commissioned post FY2018
- > 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
- > FEED has commenced
- > Potential to produce additional ~420 ktpa of chrome concentrates

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

LEADING NATURAL RESOURCES GROUP

Globally significant, diversified low cost operations

INNOVATION

Innovative research and development feeding organic growth

OPTIMISATION INITIATIVES

Maximise value extraction through process engineering

LEVERAGING EXISTING PLATFORMS

Marketing, sales and logistics platform
Expansion into multi-commodities
Geographic diversity

CAPITAL DISCIPLINE

Annual dividend policy of minimum 15% NPAT
Capital allocation to low risk projects



Production guidance of 150 to 160 koz of PGM concentrate and 1.4 to 1.5 Mt of chrome concentrates for FY2019

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