

tharisa



PHASED TRANSITION TO UNDERGROUND MINING

October 2025

Redefining resources. Innovating with purpose. Empowering futures.



ABOUT US

Unlocking multi-generational value through integrated mining

AN INTEGRATED MINING VISION

Tharisa Minerals is a world class open pit mine, transitioning to a mechanised underground mine producing both PGM and chrome concentrates. Located in South Africa's Bushveld Complex, it is a vital source of strategic commodities driving global clean energy and mobility.

DRIVING SUSTAINABLE TRANSFORMATION

As the only co-producer of PGMs and chrome, Tharisa's integrated model from mining through processing to beneficiation, ensures maximum resource efficiency, reduced environmental impact, and long term value creation for all stakeholders.

tharisa

ABOUT US

Empowering futures responsibly

Tharisa's core strategy is to generate value by becoming a globally significant, low cost producer of critical commodities that are required to deliver a sustainable future.

Creating opportunities for people, communities and generations to come.



0.02

LTIFR
THARISA MINERALS

4 879

GROUP
EMPLOYEES

US\$832 m

CAPITAL
INVESTED

ABOUT US

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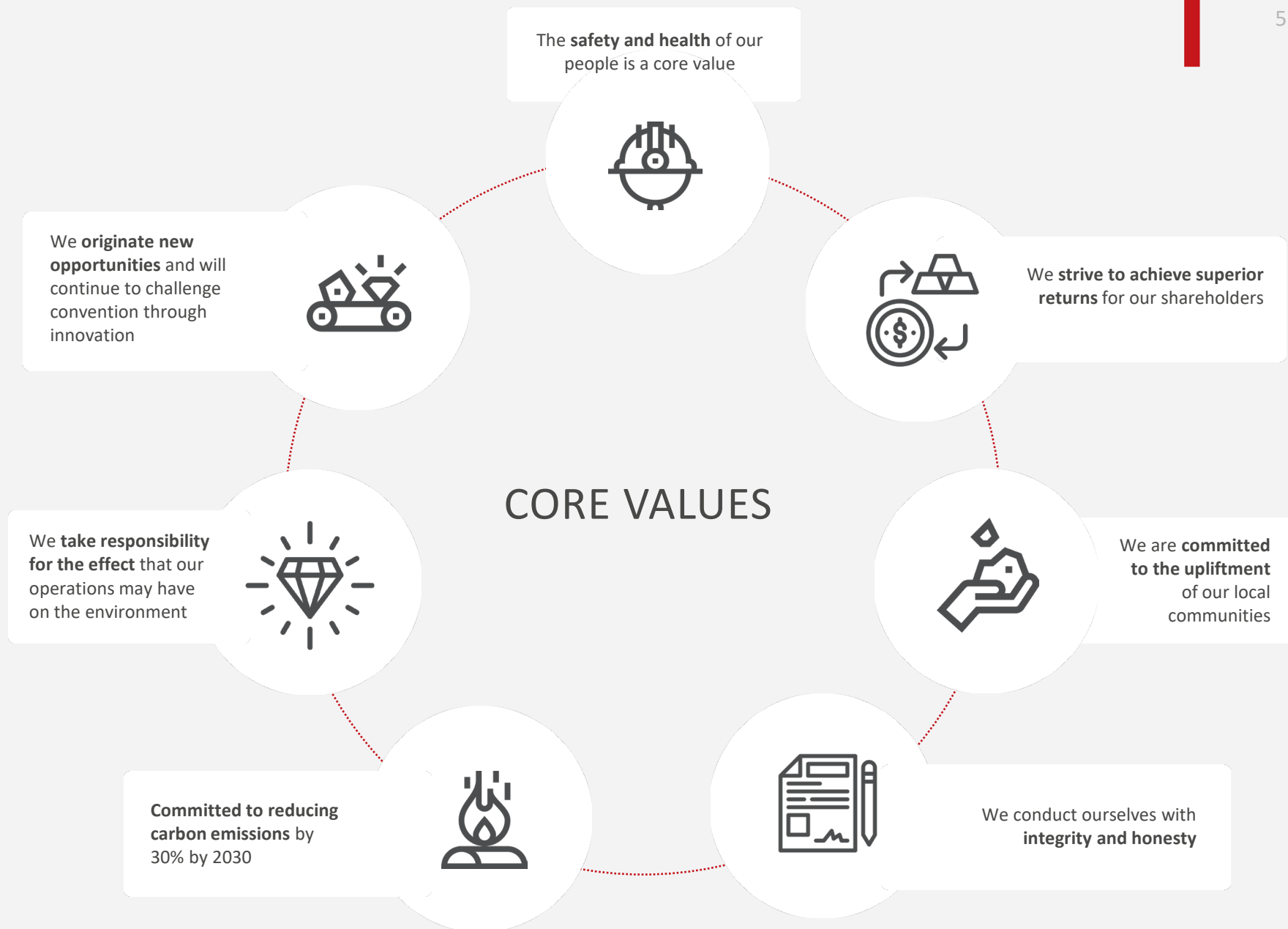
US\$115 m

RETURNED TO
SHAREHOLDERS

ABOUT US

The principles behind our progress

At the heart of our strategic evolution is a commitment to innovation driven, sustainable resource extraction. As we expand into underground mining, our values continue to guide us toward long term environmental and community goals. These evolving principles drive responsible mining, unlock efficiencies, reduce impact, and maximise shared value.



ABOUT US

Our locations

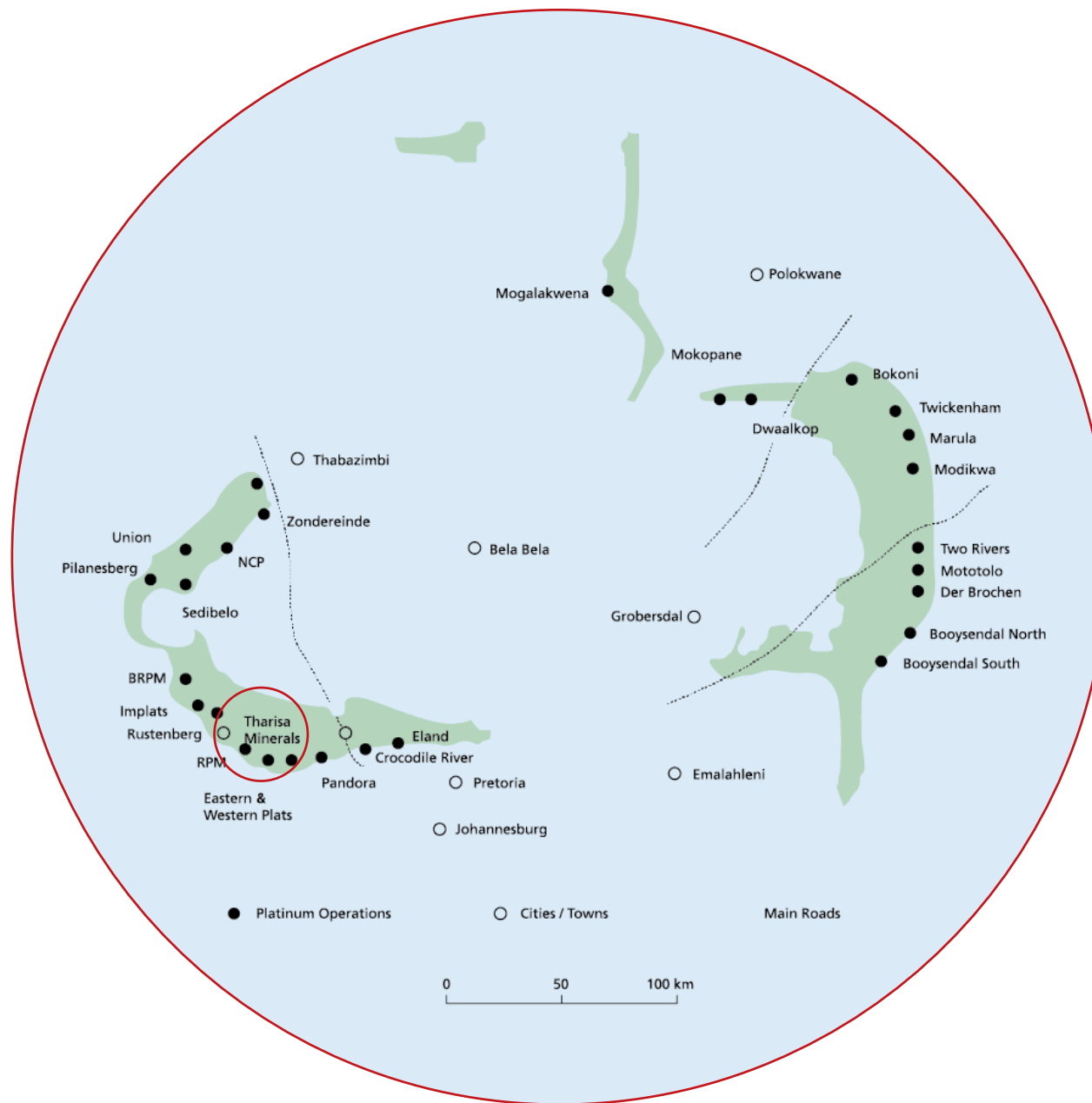
We are strategically located on South Africa's western limb of the Bushveld Complex, home to over 70% of the world's known platinum group metals and chrome resources. The operation is uniquely positioned to extract both PGMs and chrome from the Middle Group Chromitite Layers, driving cost efficient recovery. This key asset supports Tharisa's long term production strategy and enables efficient delivery to international markets via established transport infrastructure.



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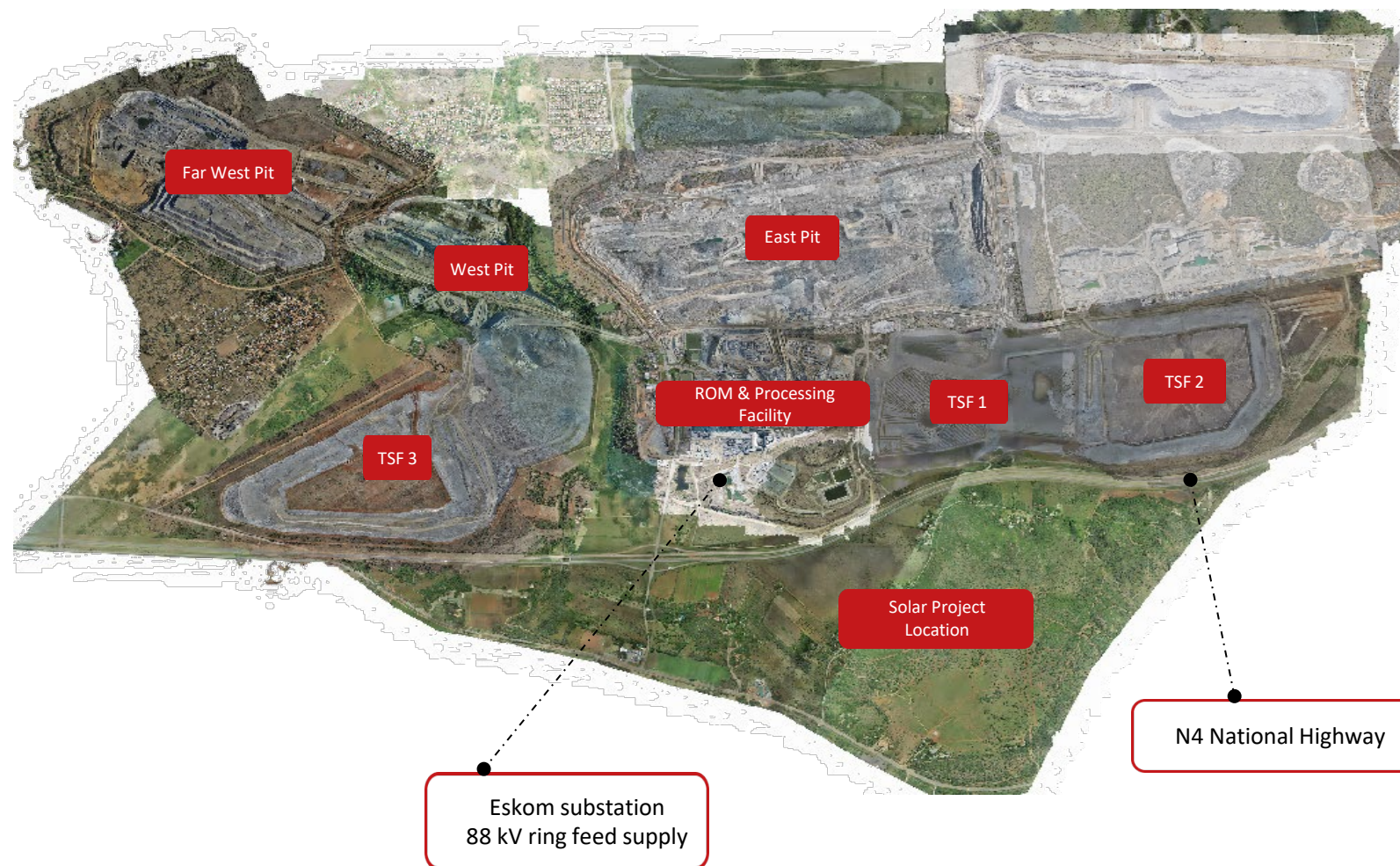
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UNDERGROUND TRANSITION

A smarter way forward for long term mining success

With the depletion of open pit resources expected by 2034, Tharisa Minerals is strategically transitioning to underground mining. This move ensures sustained production at **5.6 Mtpa** while unlocking long term value through a more efficient, flexible, and lower cost underground mining model covering multiple generations. Our shallow ore body enables a more efficient on-reef mechanised development, delivering cleaner ROM and significantly reducing waste, capital intensity, and environmental impact.

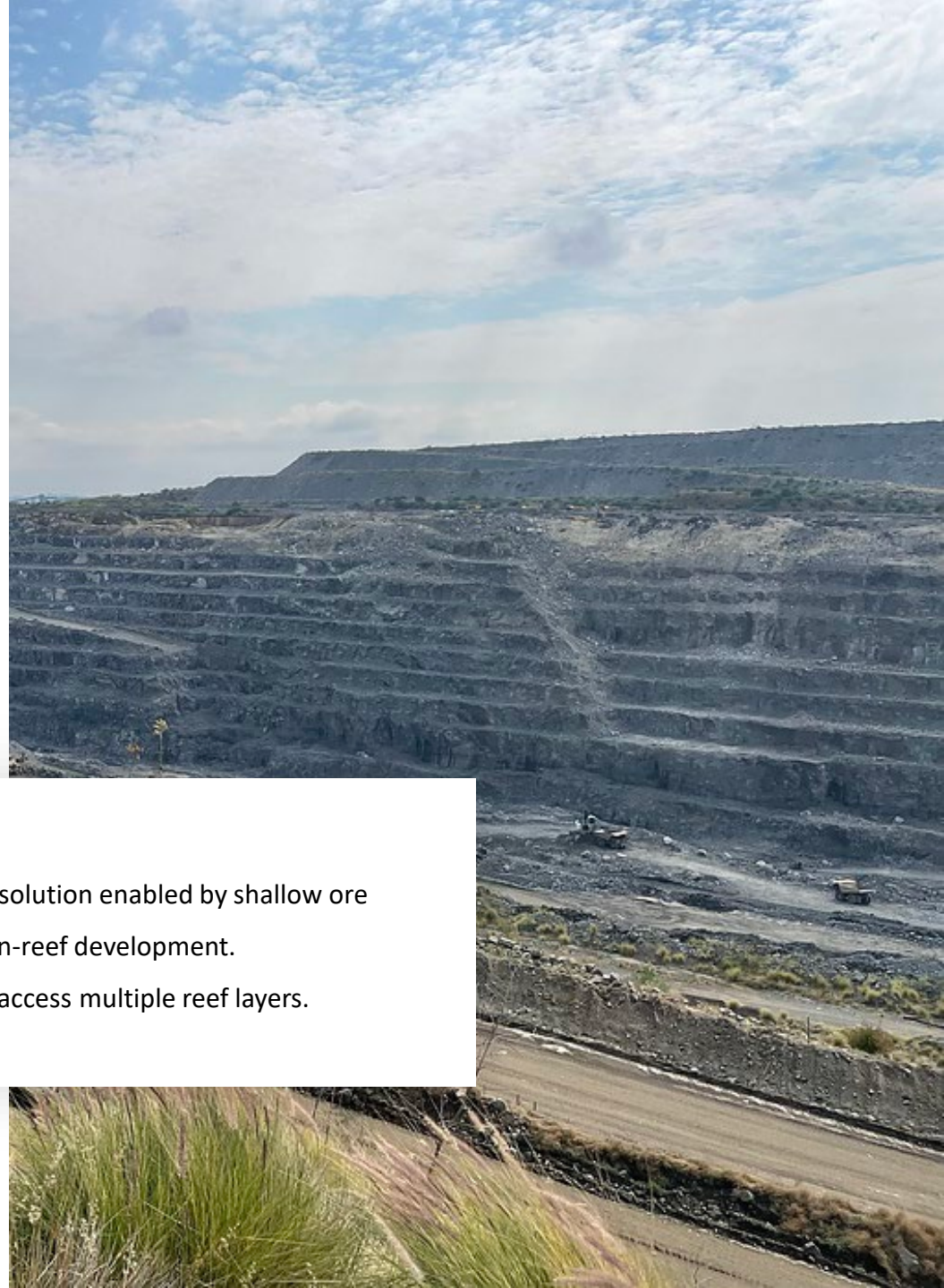
OPEN PIT MINING

Open pit mining has successfully driven production to date, but as we look to the future, evolving costs and ore availability present an opportunity to transition to more sustainable mining methods.

UNDERGROUND MINING

A sustainable, lower cost solution enabled by shallow ore access and mechanised on-reef development.

Underground mining will access multiple reef layers.



UNDERGROUND TRANSITION

Underground video



UNDERGROUND TRANSITION

Insuring long term sustainability with underground innovation

Tharisa Minerals is proactively transitioning toward a more resilient, sustainable and multi-generational mining model. The extension of the LOM by several decades will ensure continued delivery of PGM and chrome concentrate into global markets.

01

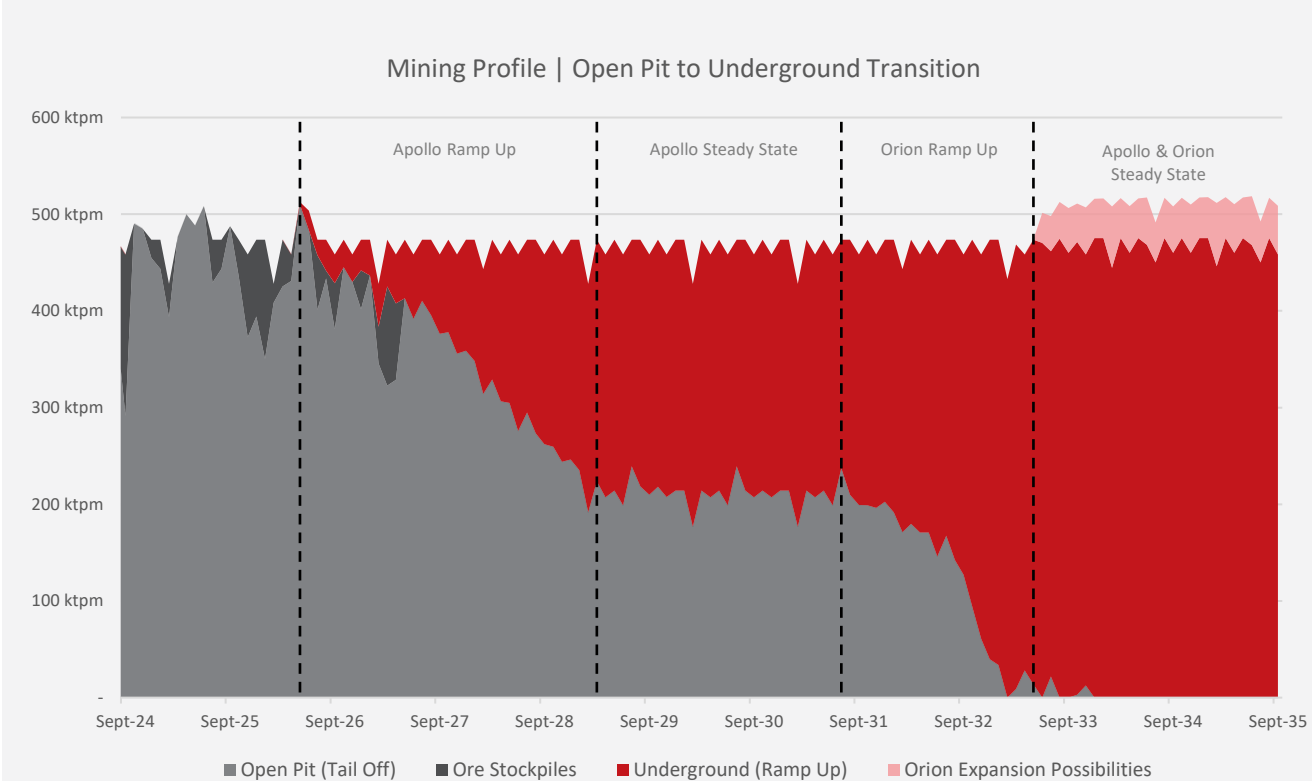
LOWER IMPACT, HIGHER VALUE

With minimal off reef mining required, a smaller fleet, and on-reef development, underground mining offers a lower carbon footprint and established infrastructure.

02

A SHIFT TO LONG TERM STABILITY

Our underground transition enables us to sustain 5.6 Mtpa beyond FY2033, reducing dependency on high cost, third party ore and improving plant efficiency with cleaner ROM.



UNDERGROUND TRANSITION

Built for the future Powered by purpose

01

CLEANER, MORE EFFICIENT PROCESSING

Underground mining will deliver an improved quality ROM to our plants, improving metal recoveries and reducing inefficiencies. On-reef development eliminates the need for high waste handling, while reducing diesel consumption.

02

SMARTER, LEANER OPERATIONS

Mechanised methods allow for smaller, more efficient fleets and streamlined infrastructure. This reduces complexity, lowers operating costs, and leverages readily available skilled labour.

03

LOWER IMPACT, GREATER SUSTAINABILITY

The shallow orebody enables reduced surface disturbance, lower energy use, and enhanced safety. This supports long term ESG goals while maintaining production at lower unit costs.



SCOPE & GEOLOGY

Extending mine life through natural progression

The next step in mine development expands reserves beyond the current pit shell offering stable, low risk production through access to the multi-generational resource base.

DEFINED SCOPE

- DFS targets initial 10 years of underground mining
- Approximate depth: **450 m**
- Focused on **MG2 and MG4 Chromitite Layers**

ROBUST GEOLOGICAL MODELLING

- Structural, geotechnical, and geohydrological studies completed
- DFS model fully integrates refined datasets

639

DIAMOND DRILLHOLES

Totalling **80.6 km**

97

DRILLHOLES

Within DFS underground footprint

60.7

Mt

DECLARED AT

1.71 g/t 6E PGMs

19.0% Cr₂O₃

Classified: Measured & Indicated

30.4

Mt

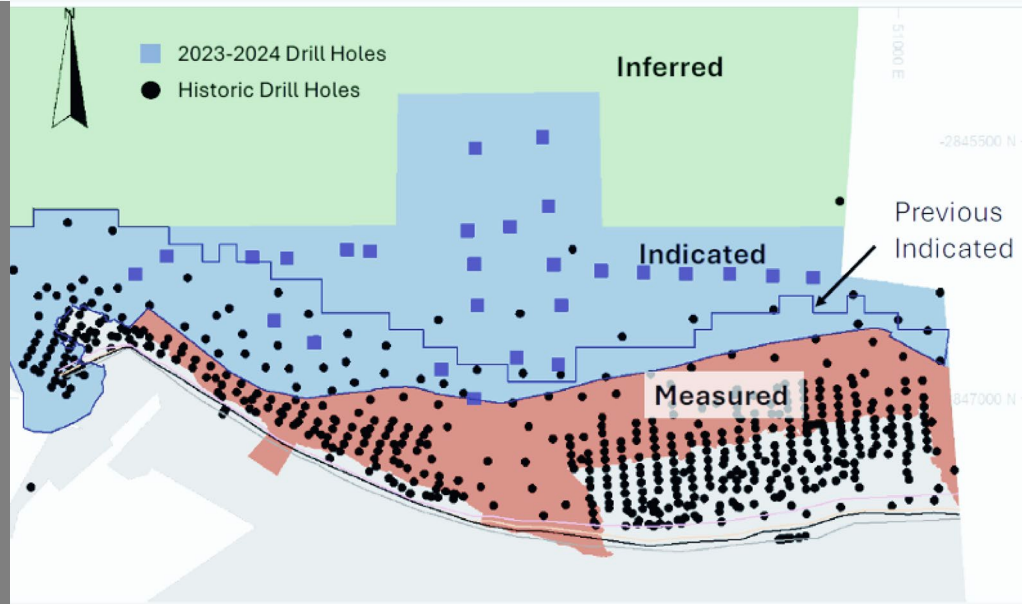
IN RESERVE AT

1.45 g/t 6E PGMs

16.4% Cr₂O₃

Classified: Proved & Probable

Underground Resource Classification and Drilling Zones



SCOPE & GEOLOGY

Strong geological foundation for long term underground development

Surface Map of Drillhole Distribution and Pit Boundaries



FOCUSED DRILLING

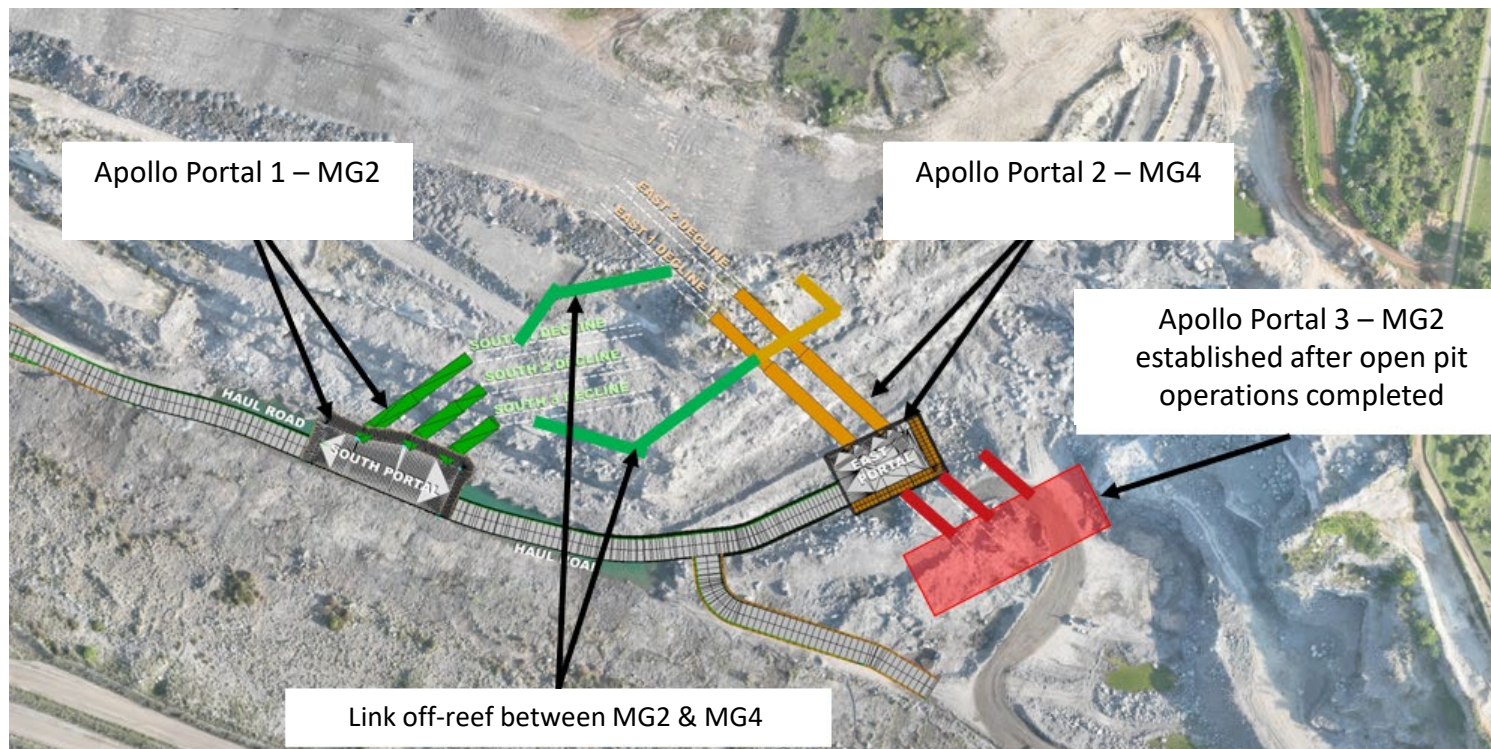
Drilling was designed to ensure ore body grade and thickness is better understood, and geohydrological information was obtained to design optimal mine development for best output and maximum value.

Drilling data confirmed and initial 10 years of reserves and multi-generational resource which optimised planning and engineering with on-reef development ensuring quick access.

OPTIMISED ACCESS STRATEGY

Strategic portals unlock efficient underground entry

Starting with Apollo, a phased approach to portal development enables early access to reef while minimising off-reef development. This design supports safe, cost-effective ramp up and long-term operational efficiency.



STAGED EXECUTION

Apollo Portals 1, 2 and 3 are sequenced to optimise entry into MG2 and MG4, allowing for sustained production while reducing development risk and complexity.



TARGETED DEVELOPMENT

Access design prioritises shallow orebody entry, aligning infrastructure with reef position to minimise waste, improve safety, and enhance ROM efficiency.



STRONGER TOGETHER

Key partnerships

Our partners play a pivotal role in supporting our development while providing specialised services that are critical in the development of the underground project.

PROVEST

ProVest offers a full range of mining services designed to enhance safety and efficiency. Their expertise includes drilling and installation of anchors and roof bolts, shotcrete application, grout plant operations, and grout pack installations.

CEMENTATION AFRICA

Cementation Africa is a leading underground mining contractor with a reputation for delivering mining and project services, safely, on time and to specification while upholding the highest standards of quality.

ENAEX

Enaex Africa produces a wide variety of explosives to execute the entire blasting process. As a supplier to Tharisa, these products are used in blasting for opencast and underground mining operations.

KOMATSU, MACLEAN & SANDVIK

Komatsu is a global leader in the supply of Japanese-engineered mining equipment. MacLean Engineering specialises in underground mobile equipment solutions based on hard rock mining experience. Sandvik is a global, high-tech engineering group providing solutions for the mining industry.

UNDERGROUND TRANSITION

Key technical partners

CONSULTING TEAM

Engineering Services



Geotechnical Studies



Structural Geological & Hydrogeological Design



Geology & Mineral Resource



Mine Design



Ventilation Design



EIA Report



TMM Simulations



Water Balance & Mass Load



Labour Model



Tailings Design



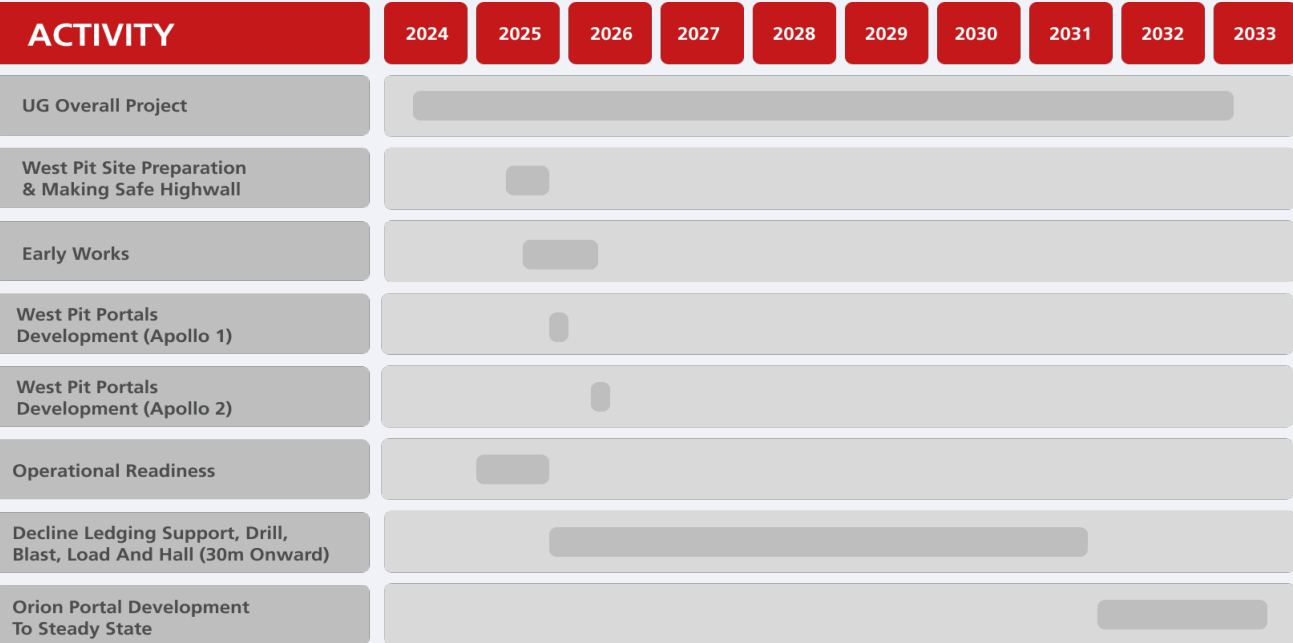
Basis of Estimate



UNDERGROUND TRANSITION

Unlocking the future through regulatory alignment

Tharisa Minerals has initiated early stage activities, including essential infrastructure services, erection of modular facilities, and securing of high wall areas. The operational readiness study has been finalised, and all necessary environmental and specialist studies are complete. Final regulatory approvals are now pending, positioning the project for its next phase of execution.

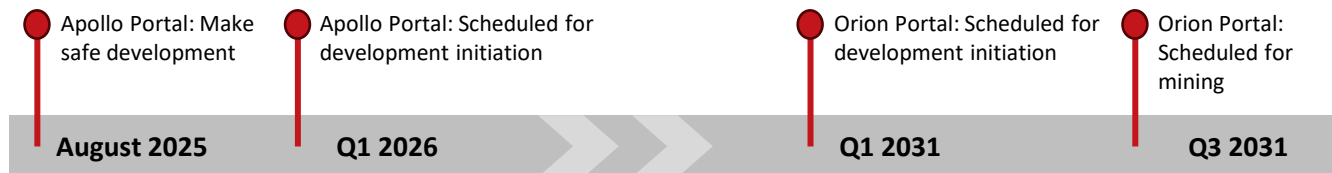


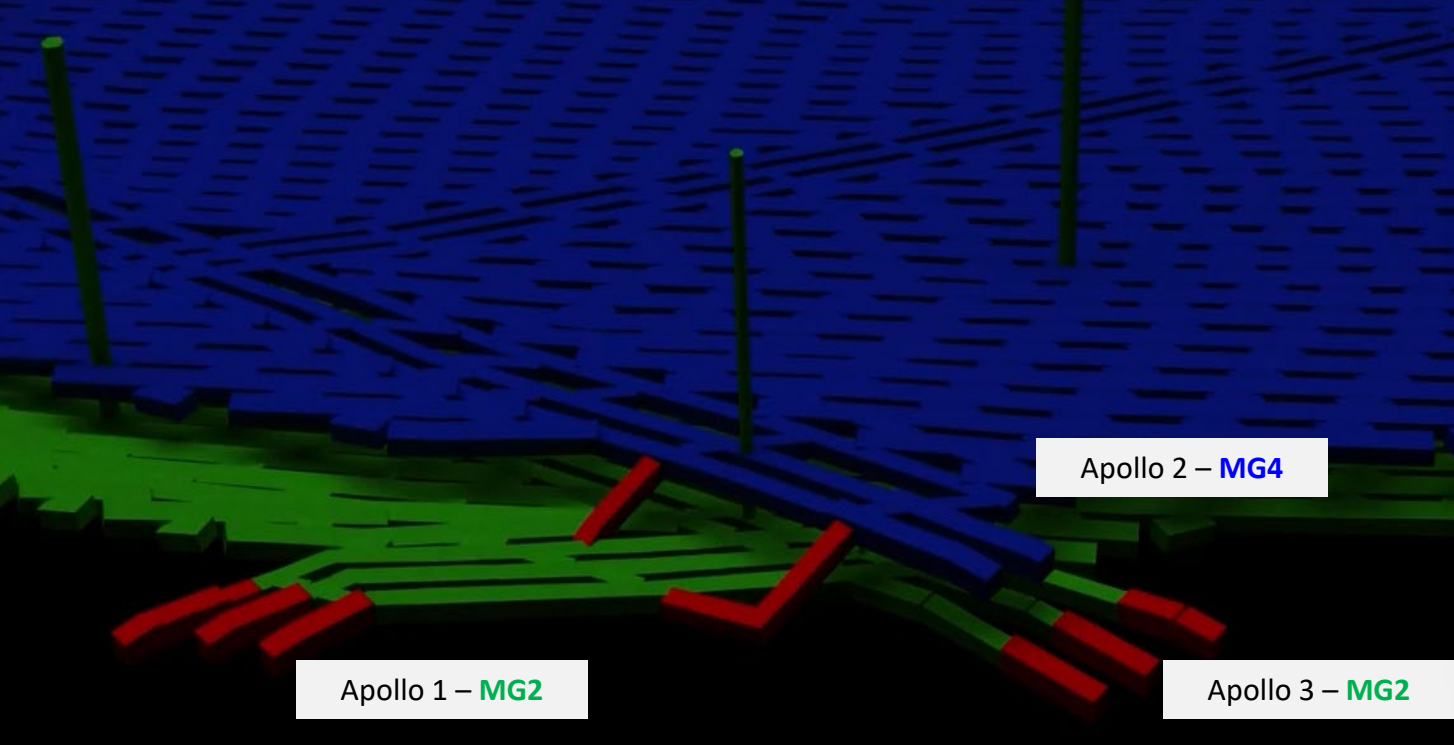
-  Specialist studies
-  EMP
-  Water Use Licence (WUL)
-  Chief Inspector of Explosives (CIE)
-  Public participation completed



UNDERGROUND PORTAL COMPLEXES

Optimised portal rollout for strategic underground access





MINING DEVELOPMENT

Structured development for sustainable extraction

Tharisa's phased underground mining approach is built on precision on-reef access, mechanised bord and pillar methods, and long term partner collaboration. From portal design to workforce planning, each element is engineered to ensure stable production, reduced surface impact, and sustainable value delivery over the life of mine.

PRECISION ENGINEERED PORTAL ACCESS

Apollo portals are strategically sequenced to enable efficient on-reef and off-reef development. This phased access ensures early ore contact, reduced lateral development, and optimised ore flow.

MECHANISED MINING METHODOLOGY

Using a mechanised bord and pillar method, operations are tailored to maximise ore body recovery while improving safety, consistency, and productivity across mining cycles.

BORD AND PILLAR STABILITY

Bord and pillar designed is engineered on optimal pillar geotechnical engineering, providing maximum stability and flexibility with increasing size as development deepens.

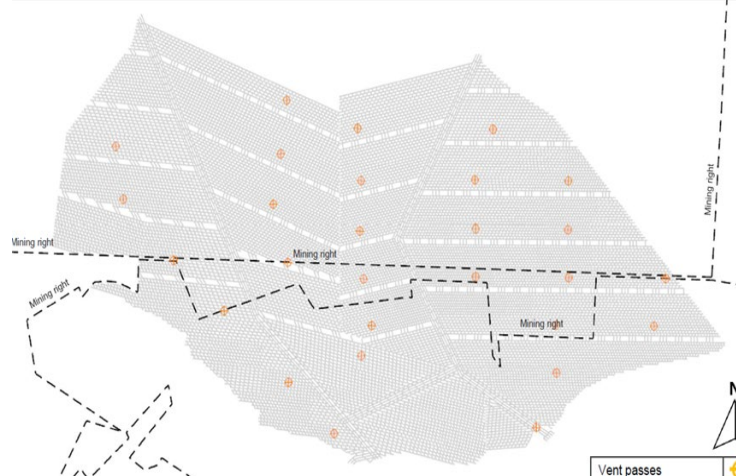
PARTNER DRIVEN WORKFORCE STRATEGY

A phased labour ramp up and business partner model enable skill development and workforce stability, transitioning open pit staff into underground roles through structured transformation plans.

EQUIPMENT, VENTILATION & ELECTRICAL

Infrastructure built for safety, efficiency & performance

Tharisa's underground operations are supported by robust, purpose built infrastructure designed to ensure safety, reliability and seamless scalability. From a carefully selected trackless mobile machinery ('TMM') fleet using a contractor mining model to precision ventilation systems and engineered electrical capacity, each element has been optimised to meet the demands of sustained, high efficiency production.



TMM FLEET

A fit-for-purpose fleet selected through motion study and competitive tendering.

- Apollo Complex: 140 units, including 14 t LHDs, 30 t trucks, drill rigs, bolters, scissor lifts, sprayers, and graders.
- Orion Complex: Mirrors Apollo to maintain operational consistency.

VENTILATION

Ventilation infrastructure is strategically designed to ensure optimal airflow and safety.

- Supports mechanised mining layouts
- Enables high air quality standards
- Scalable for phased underground expansion

ELECTRICAL LOAD

Electrical systems are engineered for reliability, scalability and safety.

- Power capacity aligned with staged ramp up
- Redundant systems ensure operational uptime
- Supports ventilation, dewatering, and charging infrastructure

SUSTAINABILITY

Championing sustainability across operations

Aligned with Tharisa's 2030 vision, the underground transition integrates key sustainability pillars, from clean energy and water conservation to local upliftment and environmental stewardship, reducing impact and delivering lasting value to stakeholders and communities.



STAKEHOLDER

Tharisa Community Trust is a shareholder in Tharisa plc, receiving dividends from all group activities, with US\$2.3 million invested in skills development training.

GOVERNANCE AND TAXES

The Tharisa Community Trust holds shares in Tharisa plc, earning dividends from all group activities. The Board is majority independent, compliant with Cyprus, South African, and UK governance standards. Currency inflows to South Africa reached US\$451.6 million, with global taxes and royalties totalling US\$64.2 million.

WATER MANAGEMENT

As part of our water conservation strategy, we built a reverse osmosis plant in FY2022 to supply mining changing facilities, reducing municipal water use. Flow meter installation to track and report water usage and reuse began in FY2022 and is ongoing.

EXTRACTION AND LAND MANAGEMENT

Alien invasive plant management is conducted through chemical and mechanical methods by a locally employing independent service provider. This promotes natural vegetation restoration and supports local job creation.

CLIMATE CHANGE

Investment in solar power and Redox One battery technology will boost operational sustainability. A proposed 30 MW PV solar plant will supply mine energy, targeting a 30% emissions cut by 2030.

SUSTAINABILITY

Employing locally, developing our people



EMPLOYEES

43% of employees and contractors come directly from the host communities in which we operate

26% of employees are female



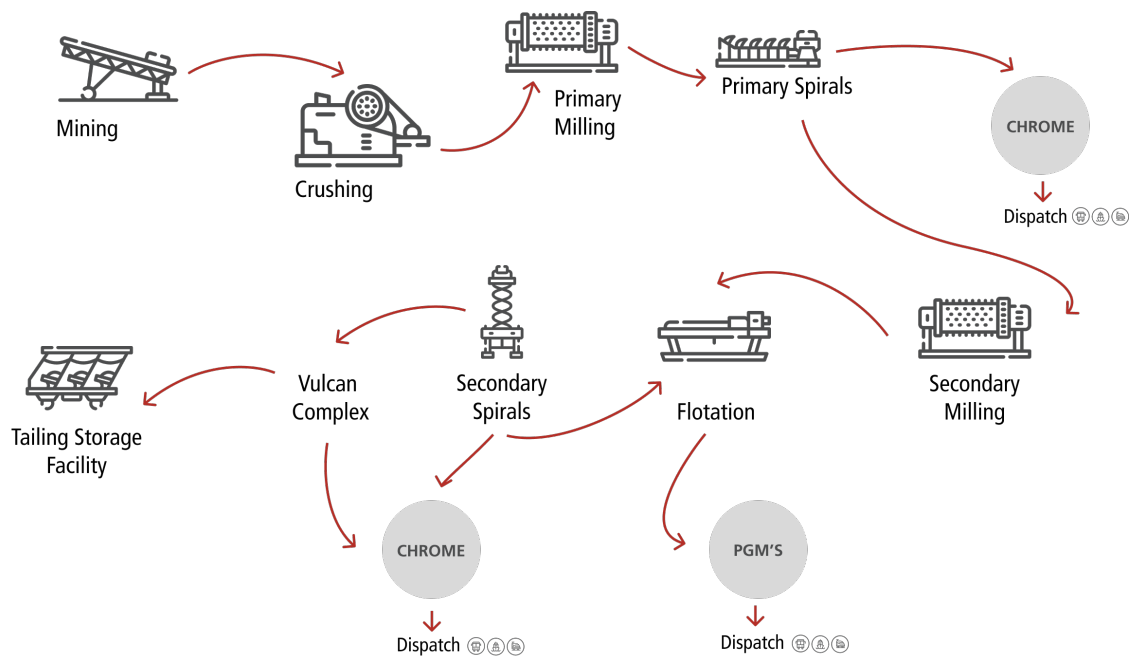
EDUCATION AND TRAINING

Virginia Motaung – A rising star in engineering, Virginia earned second place as Best Engineering Learner under the Association of Mine Resident Engineers. Her dedication, supported by Tharisa Minerals, was recognised at this prestigious Rustenburg event, highlighting her as one of the brightest young talents in the field.



UPLIFTING COMMUNITIES

The portable skills programme successfully trained 30 community members from Mmaditlhokwa, Lapologang and Bokamoso Villages. This esteemed skills development will enable the community members to be self-sufficient.



PROCESSING OVERVIEW

Championing sustainability across operations

Tharisa's integrated processing infrastructure consists of four strategically designed plants, each engineered to optimise both PGM and chrome recovery. Operating in parallel, these facilities deliver a combined ROM throughput of 5.6 Mtpa, ensuring production scalability, operational flexibility, and the ability to process multiple reef horizons. This robust setup supports sustained output while maximising the value of every tonne mined.



GENESIS PLANT

- Commissioned in 2011
- Nameplate capacity of 100 ktpm ROM
- MG1 and MG4a reef horizons are processed



VOYAGER PLANT

- Commissioned in 2012
- Nameplate capacity of 300 ktpm ROM
- MG2, MG3, MG4 reef horizons are processed



CHALLENGER PLANT

- Commissioned in 2013
- Integrated into Genesis Plant
- Produces specialty grade chrome concentrates



VULCAN COMPLEX

- Commissioned in 2020
- Nameplate capacity of 340 ktpm tailings
- Recovers ultra fine chrome



RETURNS FOR SHAREHOLDERS

Delivering on expansion and growth opportunities, commercialising technology solutions

CO PRODUCTION MODEL

Prill split focused on the key PGM elements in a widening deficit

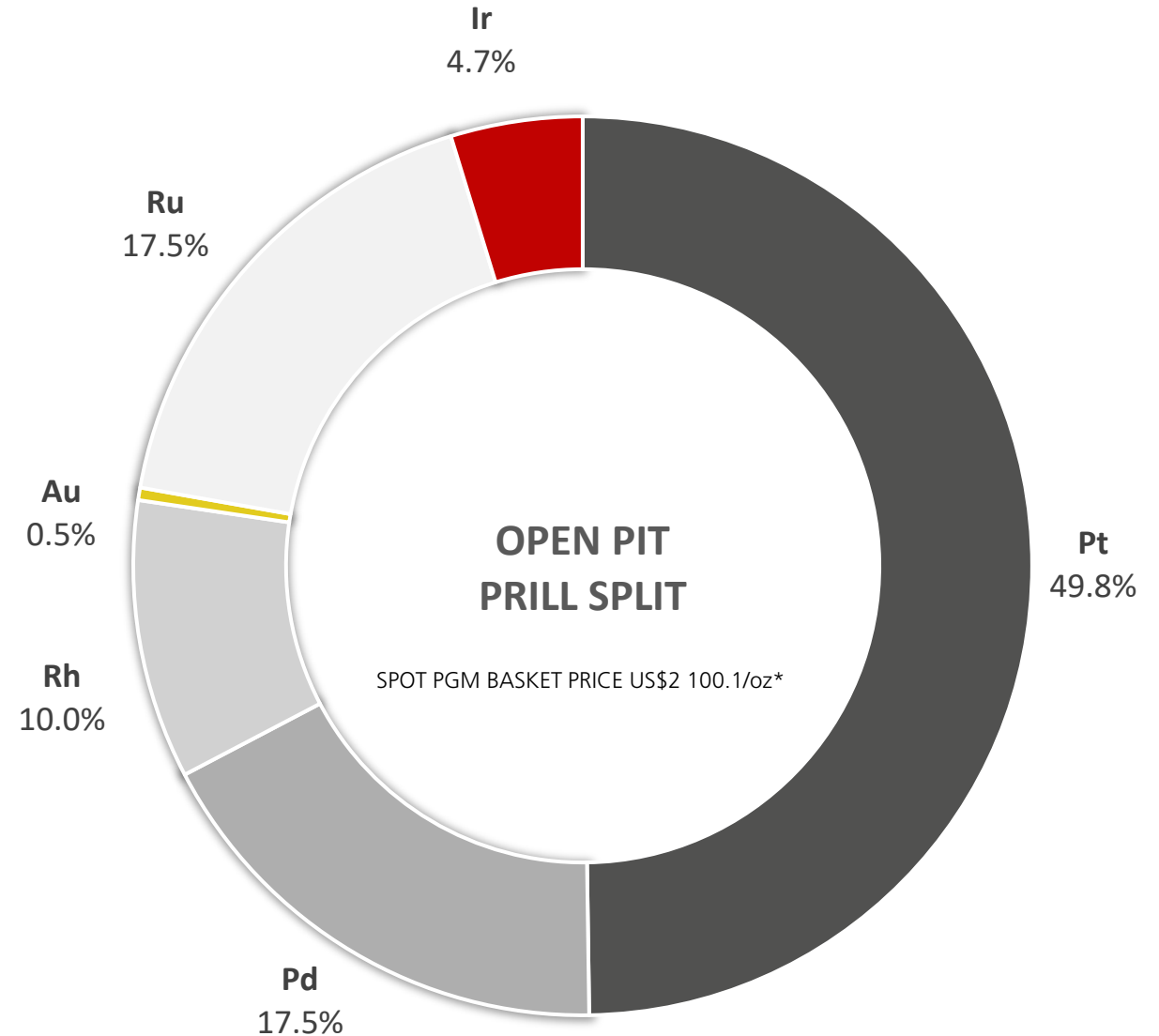
INITIAL 10 YEAR UNDERGROUND PLAN DRIVEN BY RESERVES

Resource declared of 60.7 Mt for the initial 10 year underground mining footprint, at an average of 19.0% Cr₂O₃ – classified as Measured and Indicated. (1.71 g/t 6E PGMs).

Reserve declared of 30.4 Mt at an average grade of 16.4% Cr₂O₃ – classified as Proved and Probable (1.45 g/t 6E PGMs).

Prill split changes are driven by reef selection and not blending.

Chrome output to increase due to grade control and less dilution due to focused on reef mining.



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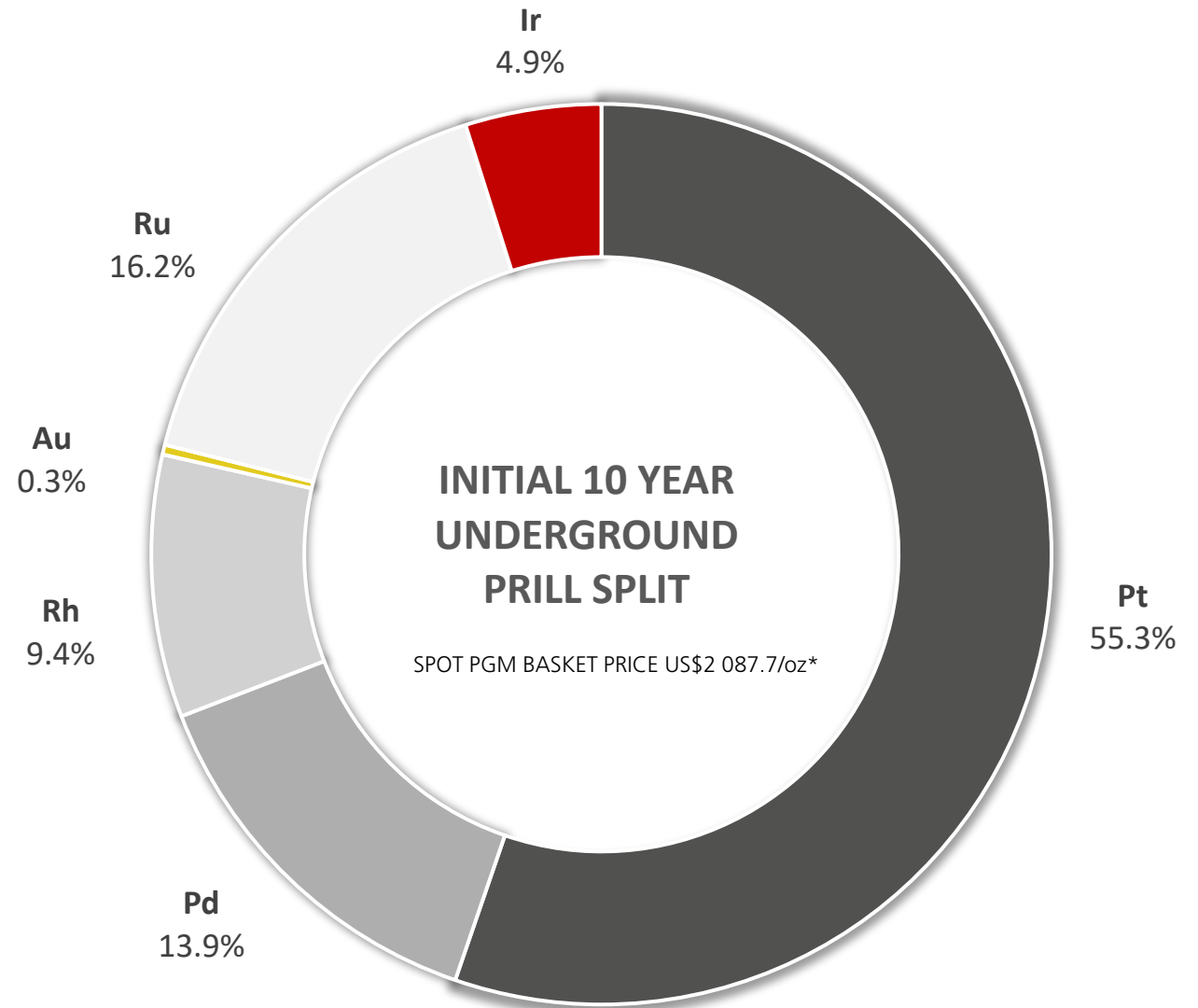
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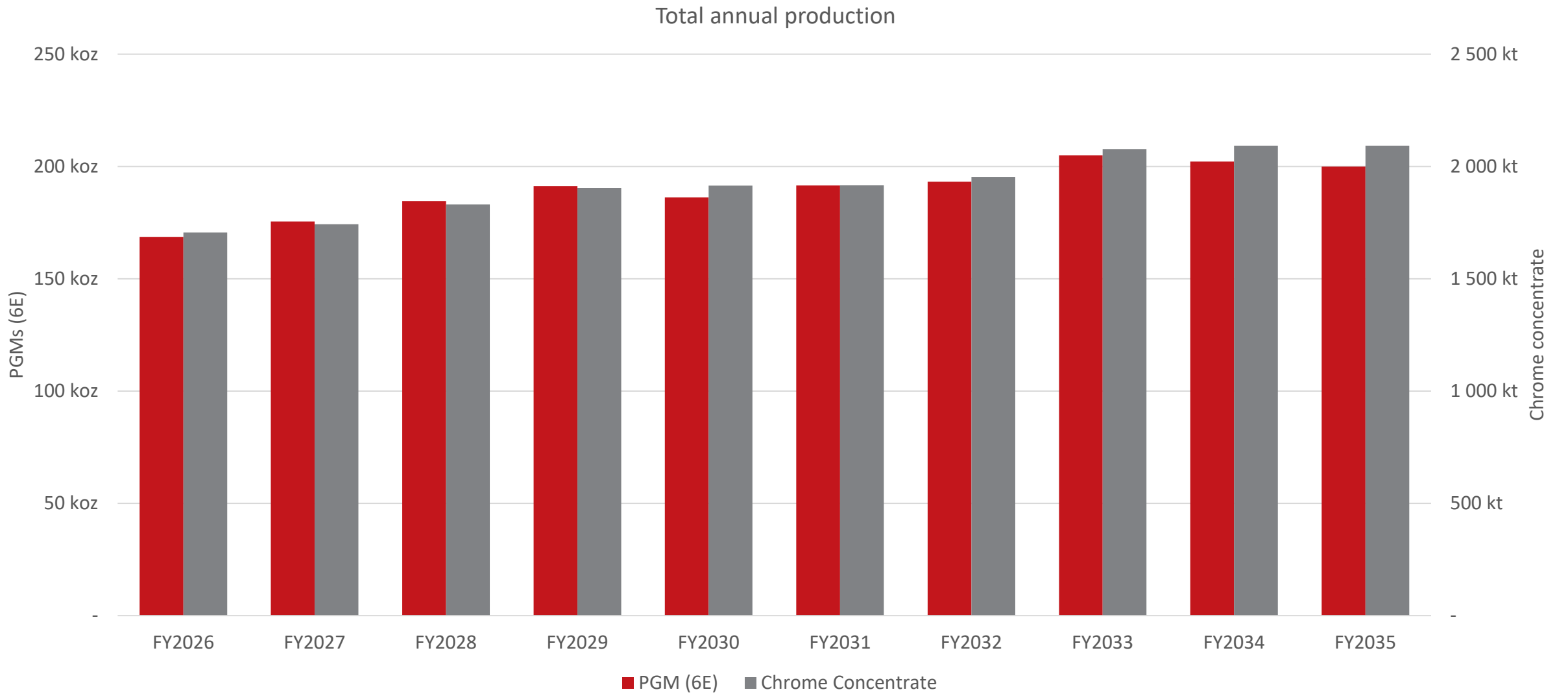
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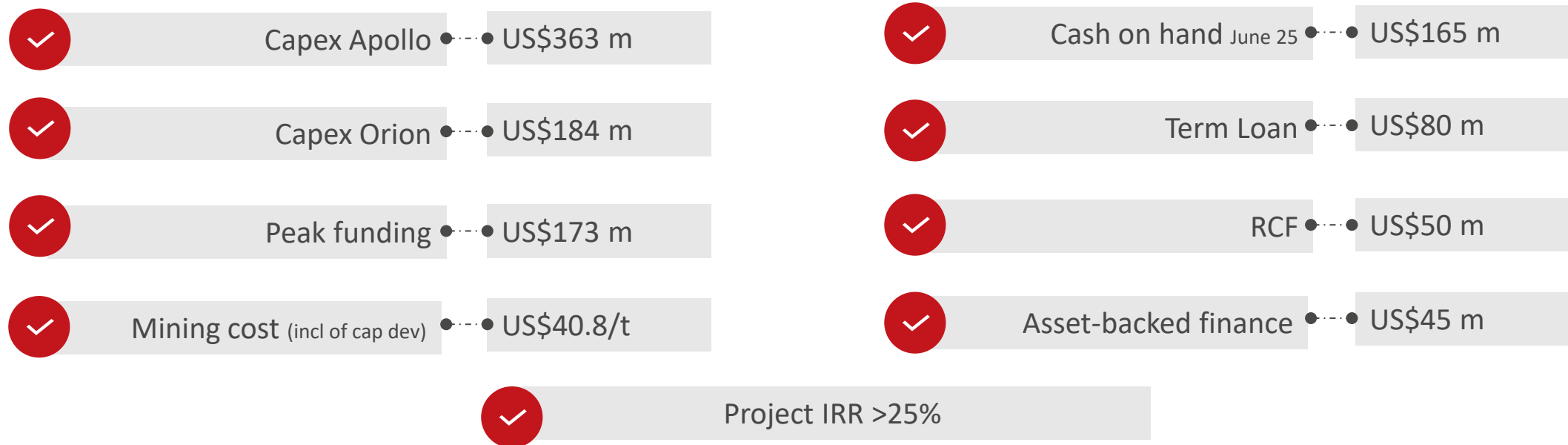


COMBINED OUTPUT



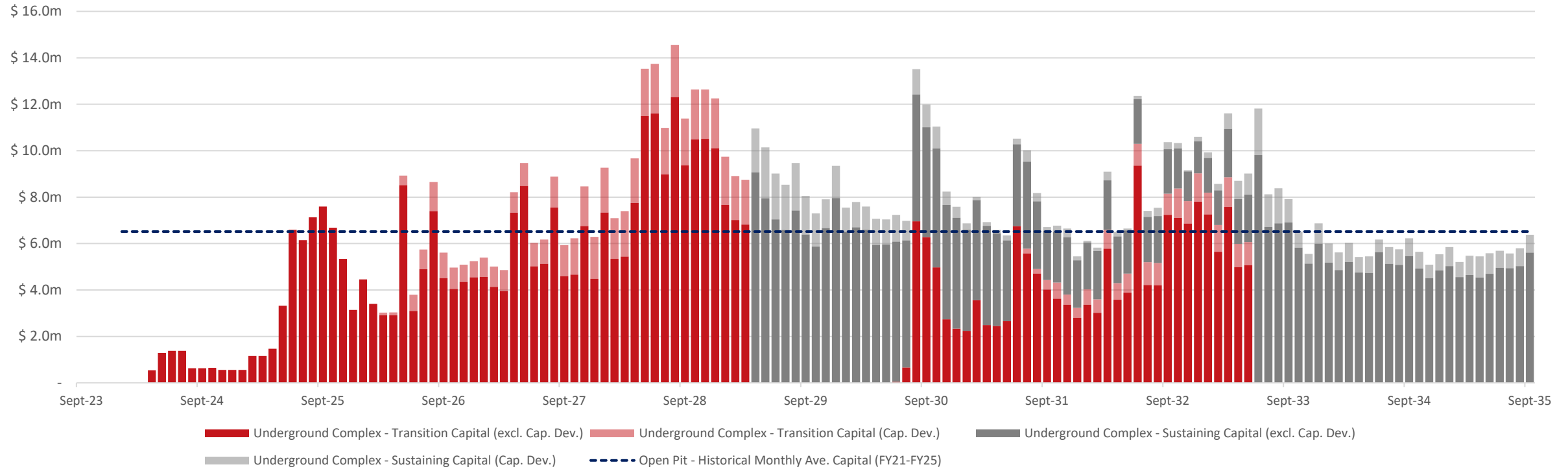
UNDERGROUND TRANSITION

Strategic capital investment driving long term value



- Apollo transition capital is incurred until steady state production of 255 ktpm in Q3 FY2029
- Orion transition capital commences in Q4 FY2030
- DFS PGM basket price assumption: US\$1 633/oz

Underground capital profile | Monthly capital vs historical average



CAPITAL EXPENDITURE

10 year phased dual project approach

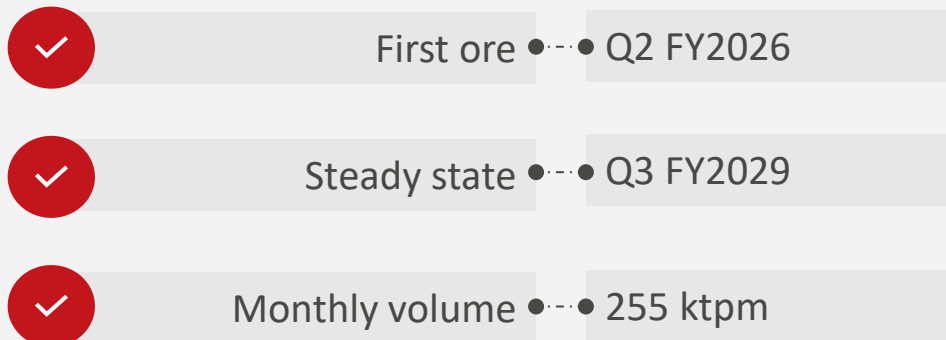
- The underground project forms part of the continued development of Tharisa Minerals' existing mining operations that builds upon established infrastructure, operations, and financial frameworks.
- Tharisa Minerals PPE cost over the last decade c. US\$625 m

UNDERGROUND TRANSITION

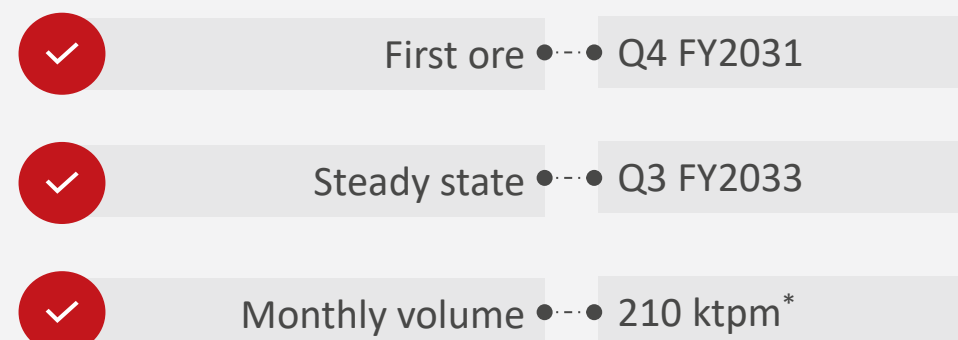
Key milestones for Apollo and Orion shaft development

The Apollo and Orion shafts represent the core of Tharisa's underground transition strategy, with defined timelines for first ore, steady-state production, and capital allocation. Apollo is scheduled to deliver first ore by Q2 FY2026, reaching steady state by Q3 FY2029, supported by a monthly volume of 255 ktpm. Orion will follow with first ore in Q4 FY2031 and steady state by Q3 FY2033, producing 210 ktpm but designed to reach a capacity of 255 ktpm. Together, these developments underpin sustained production growth and operational scalability.

APOLLO SHAFT



ORION SHAFT



*design capacity 255 ktpm

UNDERGROUND TRANSITION

Built for generations Powered by purpose

01

NATURAL TRANSITION

Natural transition in the life of mine development plan which will sustain us in the lowest cost quartile

02

CONTINUED INVESTMENT THROUGHOUT THE CYCLE

This development will unlock generational value with historical capex and transition capital ensuring a sustainable future

03

CORNERSTONE OF MULTIBILLION DOLLAR PLATFORM

Tharisa Mine NPV_{10%} of US\$985 million
Spot basket price of ~US\$2 100/oz and US\$285/t



CLOSING

Questions?

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