



An Emerging Brazilian Rare  
Earth and PGM Developer  
Set For Rapid Growth

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## Competent person statement

The information in this report that relates to exploration results is based on information compiled by Mr. Antonio de Castro, BSc (Hons), MAusIMM, CREA, who acts as BCM's Senior Consulting Geologist through the consultancy firm, ADC Geologia Ltda. Mr. de Castro has sufficient experience which is relevant to the type of deposit under consideration and to the reporting of exploration results and analytical and metallurgical test work to qualify as a competent person as defined in the 2012 Edition of the Joint Ore Reserves Committee (JORC) "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves". Mr. Castro consents to the report being issued in the form and context in which it appears.

The information in this report that relates to the Adelar target Mineral Resource is based on and fairly represents information compiled by Mr. Antonio de Castro and Mr. Leonardo Soares, (employee of GE2 Consultoria Mineral Ltda). Mr. Soares is a member of Australasian Institute of Geoscientists. Both have sufficient experience of relevance to the styles of mineralisation and types of deposits under consideration, and to activities undertaken to qualify as Competent Persons as defined in the 2012 Edition of the Joint Ore Reserve Committee (JORC) Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. Specially, Mr. de Castro is the Competent Person for the database (including all drilling information), the geological and mineralisation model plus completed the site visits with Mr. Soares. Mr. Soares is the Competent Person for the construction of the 3D geology/mineralisation model plus the estimation. Mr. de Castro and Mr. Soares consent to the inclusion in this report of the matters on their information in the form and context in which they appear.

## Exploration results and mineral resources

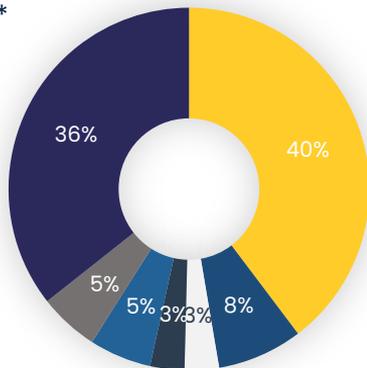
The information in this Presentation that relates to Exploration Results and Mineral Resources is based upon and fairly represents information previously released to the ASX on 26 May 2022, 30 May 2022, 1 June 2022, 9 June 2022, 10 June 2022, 5 July 2022, 7 July 2022, 14 July 2022, 21 July 2022, 27 July 2022, 29 July 2022, 5 August 2022, 19 August 2022, 26 August 2022, 2 September 2022, 9 September 2022, 16 September 2022, 23 September 2022, 4 October 2022, 14 October 2022, and 25 October 2022.

# Corporate Overview

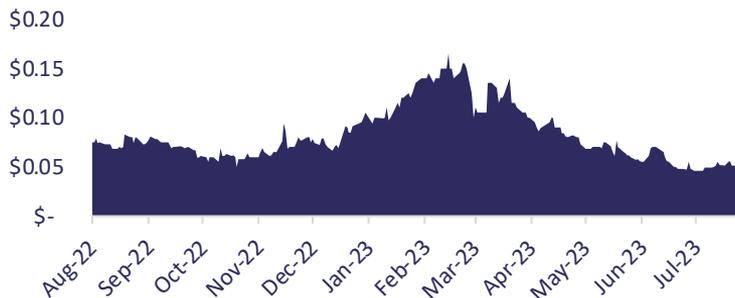
An emerging Brazilian explorer and developer well supported by key shareholders, directors, and management.

## Shareholder distribution\*

- JP Morgan Nominees
- Board and Management
- Citicorp Nominees Pty Ltd
- BNP Paribas Nominees
- Mr. AJ Igo
- HSBC Custody No minees
- Others



## Share price performance



## Capital Structure

Australian Securities Exchange Code Frankfurt Stock Exchange Symbol**	BCM FZ7
Shares on issue	460,021,475
Listed options (\$0.12, 31 Dec 2025)	10,700,000
Performance Rights (various terms)	49,195,000
Market Cap (18 <sup>th</sup> Aug)	\$37.8M
Cash (30 June 2023)	\$0.35M

\*\*Frankfurt Stock Exchange listing is an over-the-counter listing. WKN: A0DNPY | Symbol: FZ7

## Shareholder Distribution\*

Top 20 Shareholders

71.1%

Top 100 Shareholders

87.8%

\*Shareholder distribution as at 27 July 2023

## Board & Management

### BOARD

Ken Kluksdahl  
Non-Executive Chairman

Jeremy Robinson  
Non-Executive Director

Greg Van Staveren  
Non-Executive Director

Abby Smith  
Non-Executive Director

### MANAGEMENT

Andre Douchane  
Chief Executive Officer

Antonio De Castro  
Exploration Manager – Geologist

Edmar Medeiros  
Technical Manager

Mike Schmulian  
Geological Consultant

## Investment Opportunity



### Strong demand for REEs & PGMS

- Strong demand driven by clean energy technologies.
- REE demand continues to grow for EV and wind energy markets. EV sales expected to increase to 80m units per annum by 2050.
- PGMS highly important to hydrogen technologies.



### Exceptional ionic REE opportunity

- Two key REE projects covering a huge area of over 700km<sup>2</sup>.
- 9 exploration licences.
- Initial positive ammonium sulphate testing confirm presence of ionic rare earths.
- Vastly underexplored region – new rare earth district.



### Fast moving REE exploration

- Aggressive (4 rigs) auger drilling program underway.
- Mineralisation at surface.
- Samples regularly sent to the lab – constant news flow.
- REE MRE expected within Q1 2024.
- Pipeline of potential REE acquisitions.



### World class open PGM development opportunity

- Existing JORC compliant PGM MRE of 725koz.
- Mineralisation at surface.
- Excellent bioleaching results. (~16g/t 5E PGM).
- PGM MRE upgrade expected following completion of bioleaching pilot plant testing.



### Responsible & sustainable mining

- Focused on investment in cleaner technologies and building a sustainable business.
- Assets in cleared farmland.
- Strong and long-term relationship with community leaders.

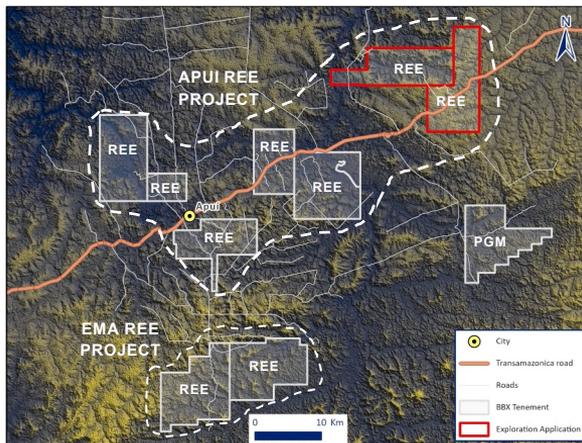
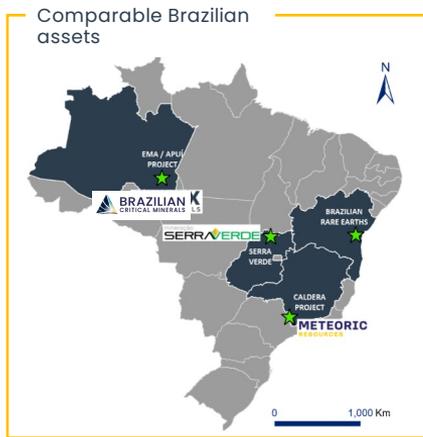


### Experienced board and management

- Highly regarded inhouse technical expertise.
- Broad range of skills including exploration, project development, operations, finance, and governance.
- Track record of discovering, developing, and mining.

# Brazilian REE landscape

BCM is well positioned to benefit from nine large REE focused tenements in a proven mining jurisdiction.



## EMA REE Project

- Two large tenements – 189km<sup>2</sup>
- Significant TREO values from 13 selected drill holes, including 4 metres at 2,631 ppm TREO.
- Rhyolite hosted – very similar to Chinese Ionic REE producers (target 800 – 1,200 PPM) – mineralisation from surface
- A basic 2% ammonium sulphate leach demonstrate excellent REEs recoveries, confirming the presence of IAC REEs.
- Large Area – potential for large or multiple deposits
- Extensive auger drilling program underway
- Maiden MRE expected within Q1 2024

## APUI REE Project

- Newly acquired, seven tenements totally 510km<sup>2</sup>
- Significant results including 4 metres at 930 ppm TREO.
- Similar mineralization and surface proximity to Emma REE Project
- Grades compatible with typical Ionic REE deposits such as Makuutu in Uganda
- Extensive auger drilling programme underway.



Serra Verde mine site

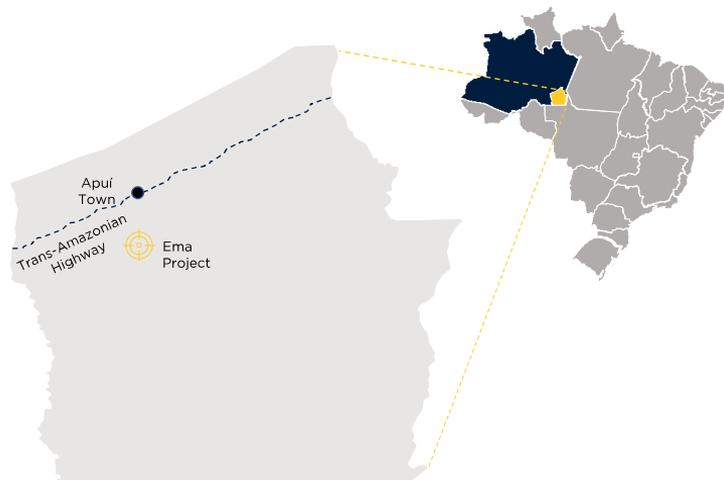


Serra Verde mine pit



Serra Verde plant under construction

# Ema Project



## Location

30km south of Apuí with year-round access by gravel roads;

Covers an area of 189km<sup>2</sup>;

## Significant REE results

- EMRC002: 8 metres at 1,607 ppm TREO from surface including 4m at
- 2,631 from 2m.
  - EMD017: 9 metres at 890 ppm TREO from 10m,
  - EMD022: 7.8 metres at 776 ppm TREO from 4m,
  - Results pending for 26 Auger holes targeting higher grade trend

Results suggest that the Ema deposit is similar to most common iREE deposits in China. These are deposits developed on top of felsic volcanic rocks and account for nearly 38% of the total of such type deposits in South China. These deposits are typified by good quality, a high percentage of iREEs (>65%), and high metallurgical recoveries.

## Ammonium sulphate testing

Initial ammonium sulphate leach has returned excellent recoveries, confirming the presence of Ionic Adsorbed REE mineralisation at Ema and Ema East.

## Drilling

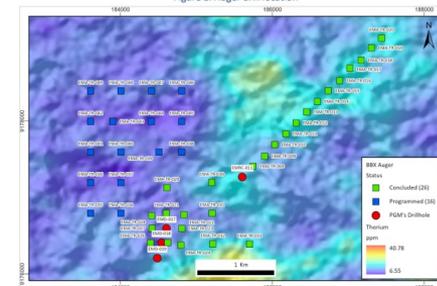
- BCM has drilled a total of 2,246 meters at the Ema Project.
- Additional REE focused auger drilling commenced, with 26 holes completed.

## Trial mining licence

Trial mining license granted in 2019. It allows BCM to mine 50,000 tonnes of mineralised rock per annum. The license is renewed annually. BCM has applied for renewal.



Figure 1: Auger drill location



# Apui REE Project

## Location

Seven tenements surrounding the Apui town, covering an area of 510km<sup>2</sup>.

## Significant REE potential

Close proximity to the Ema project

Significant results include:

- APTR 001: 12 meters at 606 ppm TREO from surface
- APTR 002: 12 meters at 714 ppm TREO from surface
- APTR 004: 9 meters at 815 ppm TREO from surface, including 4m at 930 ppm TREO from 5 meters

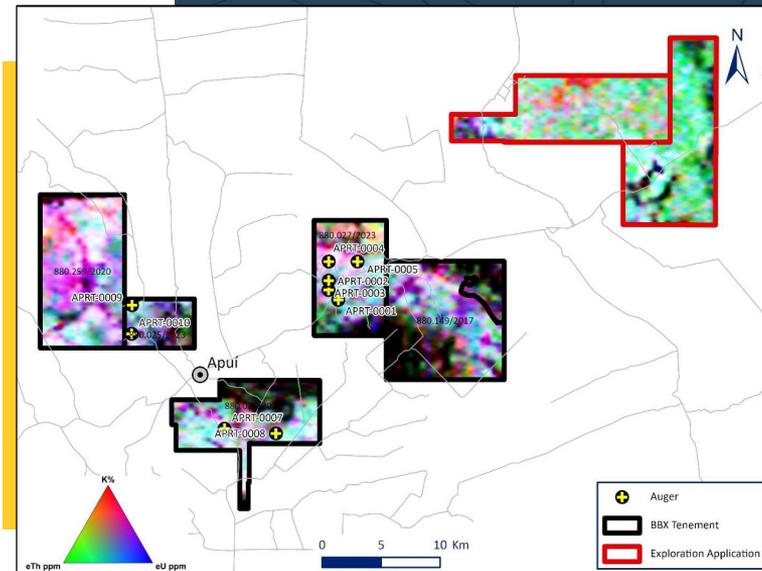
The Company has identified a specific sedimentary unit consisting of siltstones, fine sandstones, and claystone which shares the same ternary radiometric signature, and geological, climatic, and topographic characteristics with the Makuutu iREE project in Uganda.

## Licence

- Five tenements with active exploration licences granted.
- Two new tenements with exploration applications.

## Drilling

Extensive auger drilling programme underway with four drill rigs.



Apui project after acquisitions, over ternary radiometric image.

# Potential for ionic adsorption clay (IAC) REE project

Ammonium sulphate leach returned excellent recoveries, confirming the presence of Ionic Adsorbed REE mineralisation at Ema and Ema East

## Ammonium sulphate leach

- Average recovery of the light magnetic REEs Pr + Nd was 51%.
- Average recovery of heavy magnetic REEs, Tb + Dy was 39%.

REO	12-14m	14-16m	16-17.5m	17.5-19m	AVERAGE
La2O3	39%	46%	52%	35%	43%
CeO2	12%	9%	20%	10%	13%
Pr6O11	45%	56%	59%	40%	50%
Nd2O3	46%	57%	59%	42%	51%
Sm2O3	43%	52%	55%	39%	47%
Eu2O3	18%	23%	22%	16%	20%
Gd2O3	38%	48%	49%	36%	43%
Tb4O7	34%	46%	46%	33%	40%
Dy2O3	32%	44%	42%	29%	37%
Ho2O3	32%	44%	43%	31%	38%
Er2O3	32%	44%	44%	31%	38%
Tm2O3	66%	88%	82%	61%	74%
Yb2O3	34%	45%	48%	33%	40%
Lu2O3	30%	40%	42%	28%	35%
Y2O3	31%	44%	41%	31%	37%

## Ema ree results and elements distributions from specific intersections

- EMRC002: 8.0 m at 1,607 ppm TREO from surface
- EMD013: 10.0 m at 458 ppm TREO from 11 metres
- EMD017: 9.0 m at 890 ppm TREO from 10 metres
- EMD022: 7.8 m at 776 ppm TREO from 4 metres
- EMD025: 10.0 m at 633 TREO ppm from 2 metres

Classification	Element	Element	REE ppm	Factor	Oxide	REO ppm	REO/TREO %
LREE	Lanthanum	La	154.4	1.1728	La2O3	181.1	24.8
	Cerium	Ce	176.9	1.2284	CeO2	217.3	29.7
	Praseodymium	Pr	38.9	1.2082	Pr6O11	47.0	6.4
	Neodymium	Nd	130.7	1.1664	Nd2O3	152.5	20.8
HREE	Samarium	Sm	18.7	1.1596	Sm2O3	21.7	3.0
	Europium	Eu	3.6	1.1579	Eu2O3	4.2	0.6
	Gadolinium	Gd	13.9	1.1526	Gd2O3	16.1	2.2
	Terbium	Tb	1.8	1.1762	Tb4O7	2.1	0.3
	Dysprosium	Dy	10.1	1.1477	Dy2O3	11.6	1.6
	Holmium	Ho	2.0	1.1455	Ho2O3	2.2	0.3
	Erbium	Er	5.2	1.1435	Er2O3	6.0	0.8
	Thulium	Tm	0.8	1.1421	Tm2O3	0.9	0.1
	Ytterbium	Yb	5.0	1.1387	Yb2O3	5.7	0.8
	Lutetium	Lu	0.7	1.1371	Lu2O3	0.8	0.1
	Yttrium	Y	48.9	1.2699	Y2O3	62.1	8.5
Totals			612			731	100



## REE Market

Strong demand driven by energy transition. Geopolitical tensions driving demand for alternative, resilient supply.

### REEs are essential to the global energy transition

- The Global Energy Transition requires \$6 trillion worth of metals, 5 times more than needed today, to meet demand over the next 30 years.
- Demand for rare earths continues to grow for EV and wind energy markets [2]. EV sales expected to increase to 80m units per annum by 2050.
- Each Electric Vehicle (EV) requires approximately 1kg to 2kg of NdPr which is used in rare earth magnets forming part of an EV's electric motors.

**+7kt** NdPr oxide per 10m battery electric vehicles 

**+5kt** NdPr oxide per 10m hybrid electric vehicles 

**3kt** NdPr oxide per 10GW capacity direct drive wind turbine 

### Chinese consolidation and global expansion

**“The Middle East has oil. China has rare earth metals”**  
- Deng Xiaoping (1987)

- China dominates every value accretive step in the conversion of mined REEs to value added products.
- China has approved the merger of three State Owned Enterprises (SOEs) to further consolidate the industry. This group will control 70% of China's rare earths output.

### High supply risk

- China is reportedly considering an export ban on rare earth magnet technology. This move would counter the US's advantage in the high-tech arena.
- Global desire to develop alternative rare earths supply chains to protect manufacturing and defence.

## The scramble for rare earths carries big geopolitical risks

But without these metals there are limited solutions to our planetary problems

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A worker blasts the ground with water at a rare earth metals mine in Nancheng county, Jiangxi province. China dominates the production and supply of rare earth metals © Reuters

*"DOE, DOD, and the Department of State signed a memorandum of agreement (MOA) to better coordinate stockpiling activities to support the U.S. transition to clean energy and national security needs."*

White House Briefing, 22 February 2022

DEFENSE

## Pentagon suspends F-35 deliveries after discovering materials from China

The issue does not affect flight operations of F-35s already in service.



*"It's a question of supply-chain security"*

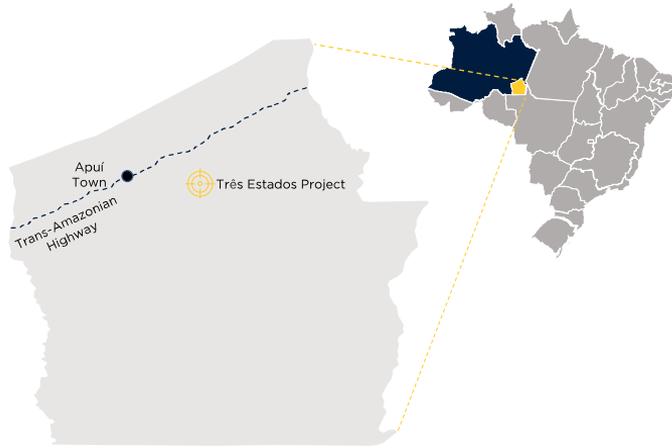
*"Lithium and rare earths will soon be more important than oil and gas. Our demand for rare earths alone will increase fivefold by 2030. [...] We must avoid becoming dependent again, as we did with oil and gas. [...] We will identify strategic projects all along the supply chain, from extraction to refining, from processing to recycling. And we will build up strategic reserves where supply is at risk. This is why today I am announcing a European Critical Raw Materials Act."*

*"We have to build a more resilient supply chain supporting projects and attracting more private investment from mining to refining, processing and recycling."*

European Commission President von der Leyen recalled some hard facts: **without secure and sustainable access to the necessary raw materials, our ambition to become the first climate neutral continent is at risk.**



14 September 2022



## Location

60km southeast of Apuí;  
Covers an area of 8,172.25 hectares.

## Geology and mineralisation

- Tenement located over a series of gabbroic intrusions defined by prominent E-W and NE-SW magnetic anomalies, local gold-in-soil geochemical anomalies and shallow artisanal gold workings;
- The principal NE-SW magnetic feature and geochemical anomaly is about 1 km wide and 4km long;

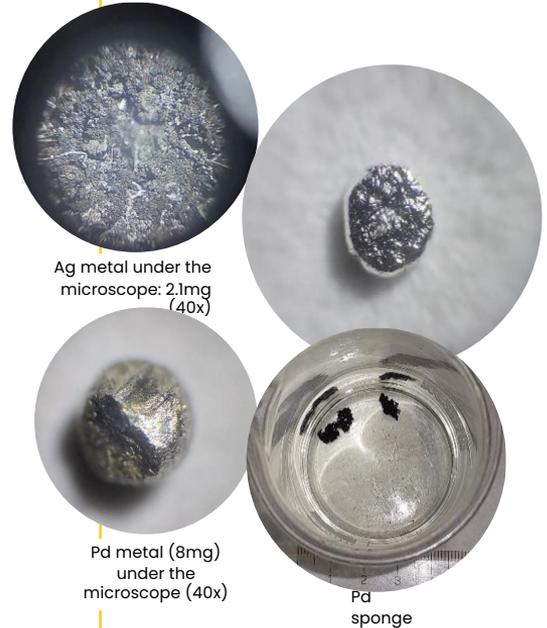
## JORC resource

- MRE containing 725,230 ounces of combined platinum, palladium, iridium, rhodium and gold.
- The MRE covers only 9% of the known gabbroic bodies at Tres Estados;
- The Mineral Resource is located at or near surface and is very amenable to surface mining techniques.

## Bioleach test work

- Highly positive bioleach recoveries (16.2 g/t PGM) following 8-day leach.
- In-country (Brazil) lab scale pilot plant operating
- Significant MRE upgrade following bioleach assays.
- Metal recovered following bioleaching process

## Metal recovery – TED 020



# Open pit JORC resource -Três Estados Project

725,300 ounces of 5e pgm<sup>1</sup> at 1.152g/t

## Mineral resource estimate<sup>2</sup>

Inferred JORC Mineral Resource Estimate for Três Estados contains a total of 725,300 ounces of combined platinum, palladium, iridium, rhodium and gold.

## Adelar target

Zone	Class	Tonnes Mt	Pt g/t	Rh g/t	Pd g/t	Au g/t	Ir g/t	5E PGM g/t	5E PGM koz
Oxide	Inferred	4.98	0.874	0.015	0.015	0.016	0.126	1.047	167.6
Fresh		13.16	0.919	0.017	0.010	0.040	0.158	1.144	484.2
Total		18.14	0.907	0.016	0.012	0.033	0.149	1.117	651.7

## Tabocal target

Zone	Class	Tonnes Mt	Pt g/t	Rh g/t	Pd g/t	Au g/t	Ir g/t	5E PGM g/t	5E PGM koz
Oxide	Inferred	0.65	1.73	-	-	-	0.001	1.731	36.2
Fresh		0.86	1.21	-	-	-	0.147	1.357	37.4
Total		1.51	1.43	-	-	-	0.083	1.513	73.5

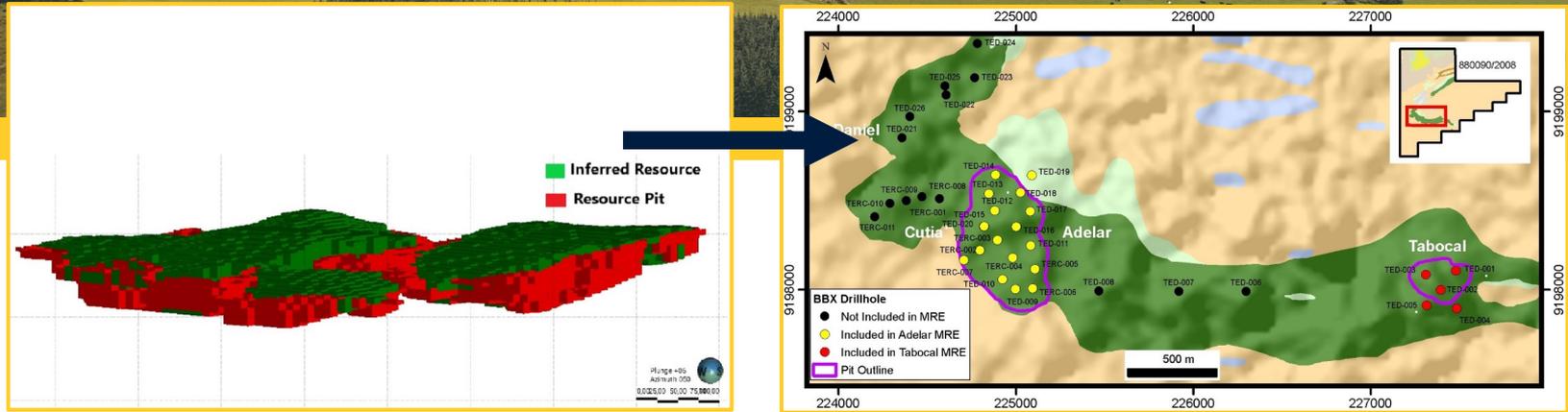
Summed amounts may not add due to rounding.

1. 5E PGM refers to the sum of platinum (Pt), palladium (Pd), iridium (Ir), rhodium (Rh) and gold (Au) expressed in units of g/t

2. Refer to ASX Announcement dated 25 January 2023



# Pit-shell over Adelar target area



The Inferred Mineral Resource covers an area of 31 Ha which represents only 9% of the known gabbroic bodies at Tres Estados.

# Bioleaching test work

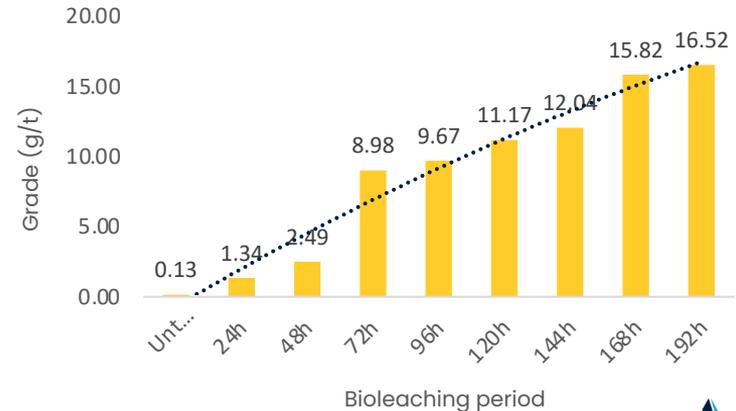
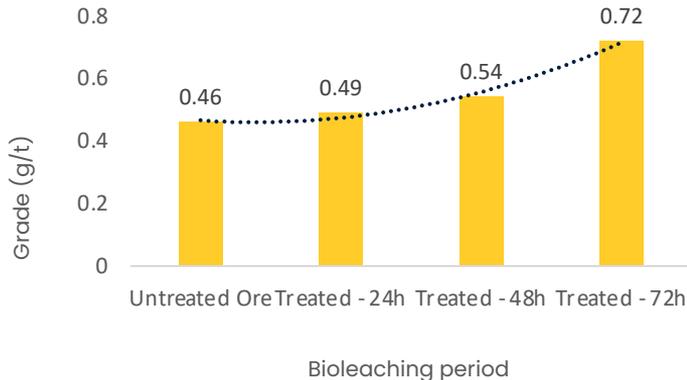
- Dedicated pilot plant designed and commissioned by EcoBiome at its facility in The Woodlands, Texas, USA.
- Test results show a significant increase in reported precious metals following bioleaching process.
- Positive results from pilot plant tests demonstrate the suitability of this bioleaching process.
- Bioleaching is a simple and effective technology for metal extraction from low-grade ores and mineral concentrates.
- Metal produced following bioleaching process.

## Initial pilot plant test

	Au g/t	Pd g/t	Pt g/t	Rh g/t	Ir g/t
Assay Ni fusion	0.01	-	0.01	0.02	0.01
EcoBiome treated ore (72h)	0.04	3.32	-	n/a	n/a

## Second pilot plant test

	Au g/t	Pd g/t	Pt g/t	Total g/t
EcoBiome - untreated	0.04	0.09	-	0.13
EcoBiome - treated (192h)	0.62	15.90	-	16.52



# Investment summary

## Rare earths

- Emerging REE explorer/developer
- 9 tenements totalling 700KM2
- Aggressive auger drilling program underway
- Constant newsflow
- Positive initial ammonium sulphate results
- REE MRE Q1 2024

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## PGMs

- Tres Estados project – PGM open pit resource
- Bioleach optimisation has produced significant results
- Physical metal recovery following bioleaching process
- Bioleaching pilot plant underway
- MRE upgrade – based on bioleach re-assay.



# Thank You

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The background of the slide is a dark blue color with a white topographic map pattern. The map features various contour lines of different thicknesses, creating a complex, organic shape that resembles a stylized landscape or a series of interconnected paths.

# Appendices

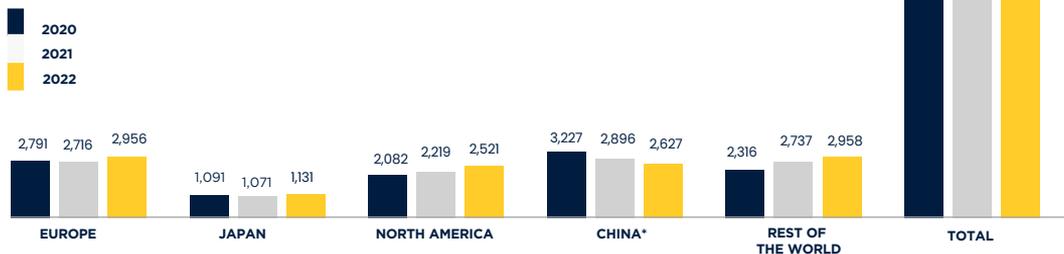
# PGM Market

## Strong demand driven by green energy technologies

- During early 2021, all the PGM except platinum traded significantly above historical levels, as constrained supplies and an improvement in demand created acute liquidity squeezes.
- War in Ukraine has created significant risks to supply given Russia's position as a main producer.
- From July 2021, all Chinese heavy duty diesel trucks were fitted with PGM catalysts.
- PGMs are critically needed for green hydrogen technologies.
- Palladium markets expecting shortages from 2023.

## Combined PT, PD, RH automotive demand

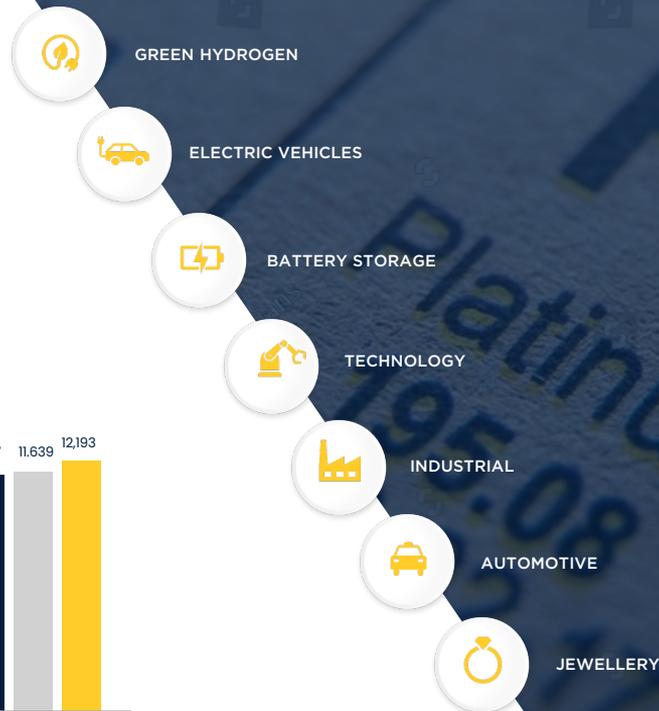
### Gross demand \*000 oz



Source: Johnson Matthey, PGM market report, May 2022.

\*Covid lockdowns in China have hit supply chains and cut vehicle output

Other uses are:



# Bioleaching – Next steps

## Pilot plant testing

- Additional pilot plant testing and optimisation.
- 200kg of material from four drill holes sent to EcoBiome.
- Enhancements identified in initial tests to be implemented prior to further testing.
- Positive results from initial pilot plant test work demonstrate the suitability of this bioleaching process.
- Full optimisation expected to be completed by no later than Q4 2023.

## Pilot plant in Brazil

- Pilot plant to be built in Brazil, near BCM's existing laboratory in Catalão.
- Regulatory process to import microbes into Brazil has commenced.
- The plant will contribute to the continuous improvement of the process recoveries, operating efficiency, and cost profile.
- Its main purpose will be to produce metal that can be analysed, determining the best markets for BCM to sell products into.
- Setup expected to commence in Q4 2023.

## Static bioleaching testing

- Company to commence bioleaching testing of drill holes in a controlled environment.
- Testing will include initially drill holes from the Três Estados MRE, and subsequently drill holes from the Ema project.
- Work expected to be completed within Q1 2024.
- The intention is to biologically assess each drill hole as to how they compare with the nickel assays.

BCM is developing an environment compatible and sustainable beneficiation process that extracts precious metals using a unique bio leach process. This leading-edge process, that extracts precious metals naturally, is being developed initially for the primary purpose of economically extracting Platinum Group metals from the Três Estados mineral deposit. It is expected that such technology will be transferable and relevant to many other PGM projects.

BCM believes that this processing technology is critical in the environmentally timely PGM space and supports a societal need to move toward a carbon neutral hydrogen fuel economy.

# Our sustainability strategy

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Protect Health and Safety



Manage Environmental Impacts



Respect Human Rights



Create Economic Benefits

# Environmental, Social and Corporate Governance

BCM is committed to becoming a leading example. We abide by all government regulations and adhere to international best practice in sustainability, community relations and corporate governance.



## Local Partnerships

- Establish and maintain solid relationships with communities and governments.
- Community acceptance of BCM's projects.
- Utilise local labour and spend locally where possible.
- Contribute to community programmes including health and education.



## Environmental Impact And Improvements

- Proactively mitigate environmental impact. Key assets in clear farmland.
- Place high priority on environmental impact studies.
- Strive for the least possible impact on the environment.
- Improve standards by implementing international best practice.



## Creating Positive Social Changes

- Develop skills locally and target local employment.
- Aim to procure goods and services locally.
- Building sustainable communities.
- Promoting a safe working environment.
- 11 years operating in Brazil without a single lost-time accident.

# Why Brazil

- Brazil is the 9th largest global economy<sup>1</sup>
- Latin America's largest pro-mining jurisdiction
- Vastly under-explored relative to other major mining jurisdictions
- Skilled workforce. Internationally accredited technology, engineering, manufacturing and construction companies
- Extensive infrastructure to support project development
- Transparent mining code and favourable fiscal regime
- Brazil has issued a list<sup>2</sup> of critical minerals which include REEs and PGMs. These minerals are deemed of special interest to the country<sup>3</sup>

<sup>1</sup> <https://worldpopulationreview.com/countries/by-gdp>

<sup>2</sup> <https://www.in.gov.br/web/dou/-/resolucao-n-2-de-18-de-junho-de-2021-327352416>

<sup>3</sup> <https://www.mining.com/brazil-to-ease-licencing-of-newly-listed-strategic-minerals/>

