



## Securing supply of critical minerals for the global energy transition

TZMI Congress 2024 | Kuala Lumpur

**ASX:VHM**

### **Acknowledgement of Country**

*VHM acknowledges the Australian Aboriginal and Torres Strait Islander peoples as the first inhabitants of the nation and the traditional custodians of the lands where we live, learn and work. We pay our respects to past, present and emerging Elders.*



# Disclaimer and forward-looking statements

## Important Information

This presentation has been prepared by VHM Limited ACN 601 004 102 (Company). It contains general background information only which is current at the date of this presentation unless otherwise specified. It is not intended to be an investor presentation. It contains selected summary information only and does not purport to be all-inclusive or to contain all the information that may be relevant to a prospective investor or stakeholder.

The Company, its affiliates, officers, directors, employees and agents do not accept responsibility or liability for this Presentation or its contents (except to the extent that such liability cannot be excluded by law). No representation or warranty is made as to the Presentation's accuracy or completeness. Recipients must satisfy themselves as to the accuracy of all such information. The presentation has been prepared based on information available at the time of preparation and is subject to change without notice. In receiving this presentation, each recipient agrees to the terms and conditions stated in this slide, including any modification to them.

This presentation does not constitute investment or financial product advice. It is not intended to be used as the basis for making an investment decision, nor is it intended to constitute legal, tax, accounting or other advice. Any references to or explanations of legislation, regulatory issues, benefits or other legal commentary (if any) are indicative only, do not summarise all relevant issues and are not intended to be a full explanation of a particular matter. The information has been obtained from and based on sources believed by the Company to be reliable. Past performance is not an indication of future performance.

This presentation may contain forward-looking statements, guidance, forecasts, estimates, prospects, projections or statements in relation to future matters that may involve risks or uncertainties and may involve significant items of subjective judgement and assumptions of future events that may or may not eventuate (Forward Statements). Forward Statements can generally be identified by the use of forward-looking words such as "anticipate", "estimates", "will", "should", "could", "may", "expects", "plans", "forecast", "target" or similar expressions. Forward Statements including indications, guidance or outlook on future revenues, distributions or financial position and performance or return or growth in underlying investments are provided as a general guide only and should not be relied upon as an indication or guarantee of future performance. To the extent that certain statements contained in this presentation may constitute 'Forward Statements' or statements about forward-looking matters, then the information reflects the Company's (and no other party's) intent, belief or expectations as at the date of this presentation. No independent third party has reviewed the reasonableness of any such statements or assumptions. None of the Company, its related bodies corporate and its officers, directors, employees, advisers, partners, affiliates and agents (together, the VHM Parties) represent or warrant that such Forward Statements will be achieved or will prove to be correct or gives any warranty, express or implied, as to the accuracy, completeness, likelihood of achievement or reasonableness of any Forward Statement contained in this presentation. Except as required by law or regulation, the Company assumes no obligation to release updates or revisions to Forward.

Such forward-looking statements involve known and unknown risks, uncertainties and other important factors beyond VHM Limited's control that could cause actual results, performance or achievements of VHM Limited to be materially different from future results, performance, or achievements expressed or implied by such forward-looking statements.

Statements to reflect any changes. Recipients should form their own views as to these matters and any assumptions on which any of the Forward Statements are based and not place reliance on such statements.

Forward-looking statements are based on numerous assumptions regarding VHM Limited's present and future business strategies and the environment in which VHM Limited will operate in the future. Among the important factors that could cause VHM Limited actual results, performance or achievements to differ materially from those in the forward-looking statements in this Presentation (without limitation) a significant change in VHM's performance (financial or otherwise) or operating environment, a material change to law or regulation (including changes to the regulatory policy or interpretation), and risks and uncertainties associated with the ongoing impacts of the COVID-19 pandemic, the conflict between Russia and Ukraine, and the Australian and global economic environment and capital market conditions.

These forward-looking statements speak only as at the date of this Presentation. Save as required by applicable law or regulation the Company expressly disclaims any obligation or undertaking to disseminate any updates or revisions to any forward-looking statements contained herein to reflect any change in the Company's expectations with regard thereto or any change in events, conditions or circumstances on which any such statements are based. As a result of these factors, the events described in the forward-looking statements in this Presentation may not occur.

No party other than the Company has authorised, permitted or caused the issue, submission, dispatch or provision of this presentation, or takes any responsibility for, or makes or purports to make any statement, representation or undertaking in this presentation and there is no statement in this presentation that is based on any statement by any other party. No person, either as a director, partner of or in the employment of the Company has any authority to make, imply, or give any representation or warranty whatsoever in relation to the information contained in this presentation. None of the VHM Parties take any responsibility for any information in this presentation or any action taken by you on the basis of such information.

To the maximum extent permitted by law, the VHM Parties:

- exclude and disclaim all liability, including (without limitation) any liability or negligence, for any expenses, losses, damages or costs incurred either as a result of the information in this presentation being inaccurate or incomplete in any way for any reason, or otherwise arising in connection with this presentation; and
- make no representation or warranty, express or implied, as to the currency, accuracy, reliability or completeness of information in this presentation.

## Compliance Statement

The information in this presentation that relates to the Goschen DFS refresh and the Mineral Resource and Ore Reserve estimates were reported in the ASX announcement dated 28 March 2023. The Cannie Mineral Resource estimate was reported in the ASX announcement dated 16 May 2023 and the Area 4 Ore Reserve estimate was reported in the ASX announcement dated 29 September 2023. The Nowie Mineral Resource estimate was first reported in the ASX announcement dated 24 January 2024. The Area 2 Mineral Resource estimate was reported in the ASX announcement dated 9 April 2024. The Company confirms that it is not aware of any new information or data that materially affects the matters previously reported and that all material assumptions and technical parameters underpinning the Mineral Resources and Ore Reserves estimates and forecast financial information derived from the production target in the relevant market announcements continue to apply and have not materially changed. The Company confirms that the form and context in which the Competent Persons' findings are presented and have not been materially modified.



# VHM Limited (ASX:VHM) overview

## Corporate Snapshot

### Market Cap<sup>1</sup>

A\$86.6 million

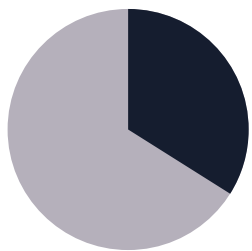
### Share Price

A\$0.40

### Issued Shares

216,460,297

### Top 20 Shareholders



Top 20: 34%

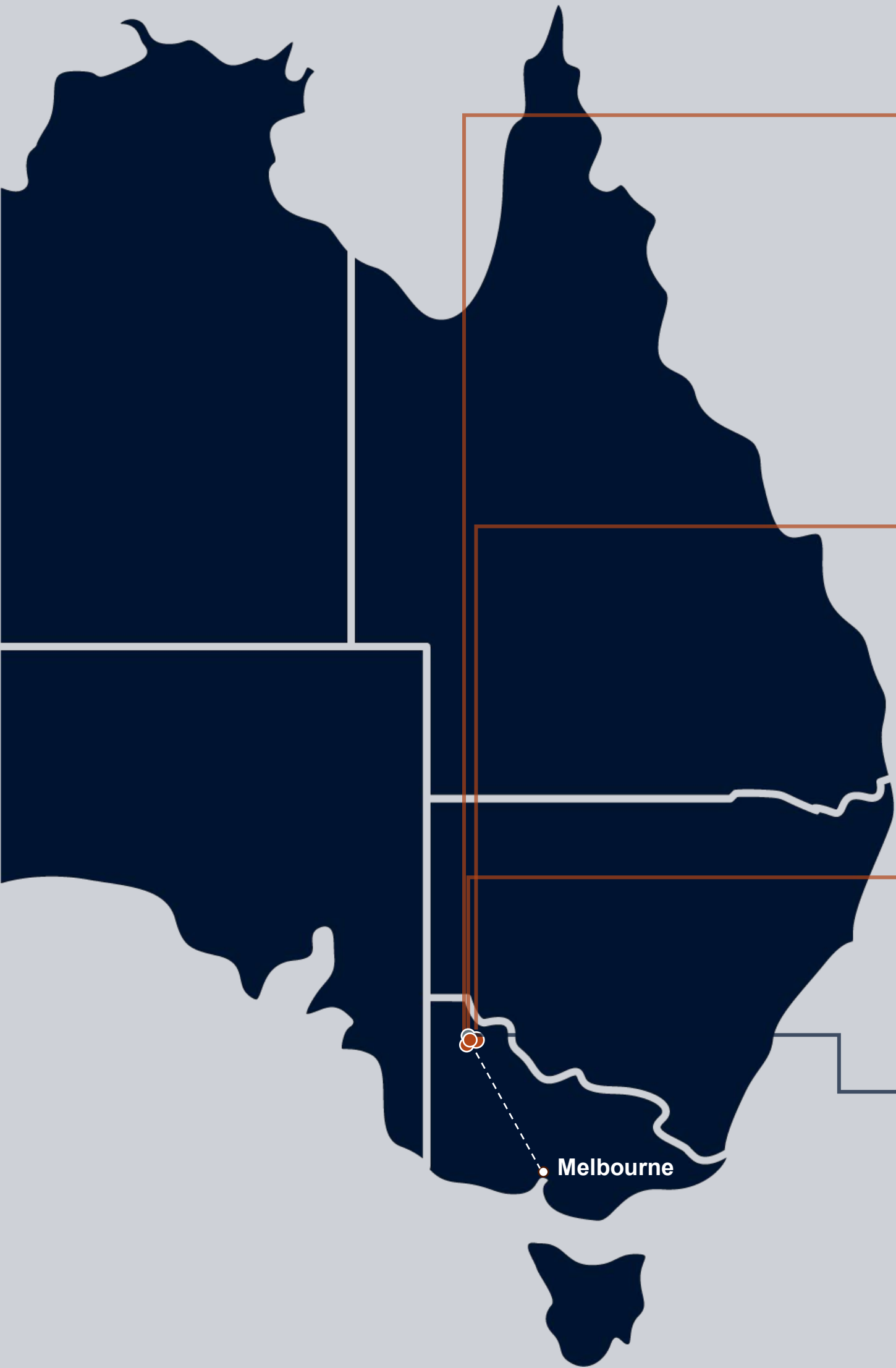
### Cash<sup>2</sup>

A\$5.4 million

### Share Options

8,127,186

Australian owned rare earths and mineral sands  
mine and processing developer



### GOSCHEN PROJECT<sup>3</sup>

98.8Mt ORE @ 4.0% THM  
Zircon 23.6%, Rutile 9.9%,  
Mon 3.7%, Xen 0.7%

### CANNIE PROJECT<sup>4</sup>

192Mt MRE @ 3.1% THM,  
Zircon 24.5%, Rutile 15.5%,  
Mon 4.1%, Xen 0.8%

### AREA 4 ORION PROJECT<sup>5</sup>

11.5Mt ORE @ 5.6% THM,  
Zircon 19.6%, Rutile 12.2%,  
Mon 3.0%, Xen 0.7%

### NOWIE PROJECT<sup>6</sup>

16.4Mt MRE @ 3.8% THM,  
Zircon 16.1%, Rutile 15.6%,  
Mon 2.1%, Xen 0.5%

Notes:  
(1): Market data at 29 October 2024 and sourced from the ASX  
(2): Cash position reported 28 October 2024 to the ASX  
(3): See Company ASX release dated 28 March 2023  
(4): See Company ASX release dated 16 May 2023  
(5): See Company ASX release dated 29 September 2023  
(6): See Company ASX release dated 24 January 2024



# Key highlights

Emerging Tier 1 integrated rare earth and minerals sands project with globally significant mineral assemblage



**Construction ready with pathway to production:** in anticipation of primary approval.

**Simple operating methodologies:** Shallow-pit mined via truck-shovel with conventional processing flowsheet for Phase 1.

**Dual commodity asset:** generates revenue from two independent product streams with rare earths *and* zircon and titanium.

**Compelling mineral assemblage and mineralisation:** a unique orebody with both light (NdPr) *and* heavy (DyTb) rare earths mineralised in sands.

**Advanced Approvals:** All Goschen environmental and social assessments complete | EES public inquiry and evaluation stages complete | Recommendation report prepared for the Minister for Planning to determine an outcome<sup>1</sup>.

**100% land ownership:** VHM has acquired all land required for the Goschen Project footprint<sup>2</sup>.

Notes:

(1) See Company ASX release dated 17 June 2024

(2) See Company ASX release dated 3 October 2023



# Accelerating Goschen towards production

Extensive development works complete

## Definitive Feasibility Study

**Refreshed**

20–25-year Life of Mine  
| NPV A\$1.525B | IRR 44% | Low Capex |  
Payback 2.8 years<sup>1</sup>

## Goschen Environment Approval

**Report with the Minister**

Independent recommendations report  
on the Goschen primary approval  
assessment<sup>3</sup>

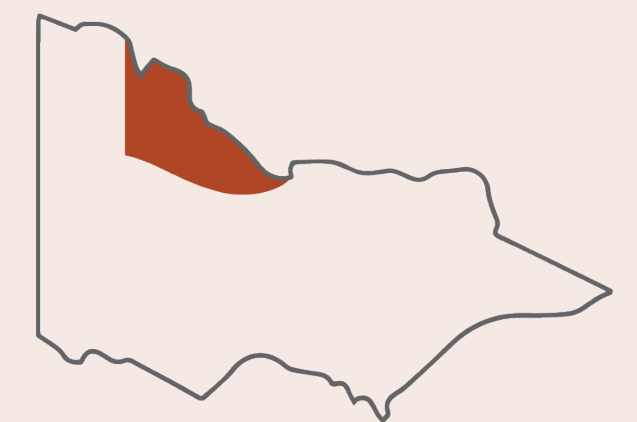
## 30% Capex Reduction for Goschen Base Plant

**Achieved**

With inputs from Base Plant detailed engineering  
design & principal mining services partners.<sup>5</sup>

## Extensive Exploration Drill Program

**Discovered  
a major new Critical  
Minerals Province**



55km stretch of contiguous  
resource confirmed in north  
west Victoria<sup>7</sup>.

**Accelerating Goschen to targeted first production in 2026**

**Goschen is now Australia's  
lowest capital rare earths project**

## Pilot-scale Hydromet Plant

**Produced high-purity rare  
earth carbonate**

Market leading recoveries achieved at ANSTO,  
producing a mixed rare earth carbonate  
product<sup>2</sup>

## First Binding Offtake

**Secured**

For Base Plant products (Phase 1)  
Indicating quality of Goschen Project's  
commercial products<sup>4</sup>

## Mining Services Partner

**Appointed**

Victoria-based Yellow Iron Fleet<sup>6</sup>

**Deposit scale offers  
future upside.**

Notes:

(1) See Company ASX release dated 28 March 2023  
(2) See Company ASX release dated 6 June 2023  
(3) See Company ASX release dated 17 June 2024

(4) See Company ASX release dated 31 January 2024  
(5) See Company ASX release dated 17 June 2024  
(6) See Company ASX release dated 28 May 2024  
(7) See Company ASX release dated 16 May 2023



# Goschen permitting pathway

Approvals milestones achieved

## Primary Approval (EES)

Source: Engage Victoria website

Q4 2023

Victorian Minister for Planning approved public exhibition for Goschen EES<sup>1</sup>

Exhibition stage: Public Submissions<sup>2</sup>

Monday 20 November 2023 – Wednesday 17 January 2024

Q1 2024

Hearing stage: Directions Hearing

Tuesday 13 February 2024

Hearing stage: Public Hearing<sup>3</sup>

25 March 2024 – 30 April 2024

Q2 2024

Report stage: IAC Panel reports back to Planning Minister<sup>4</sup>

27 June 2024

Approval stage: Ministerial recommendation

## Secondary Approvals (Work Plans, Mining Licence)

Statutory advertising for the Goschen **Mining Licence application** executed January 2024<sup>3</sup>

We are here

Work Plan Development (inc. compliance requirements with any conditions determined by the Minister)

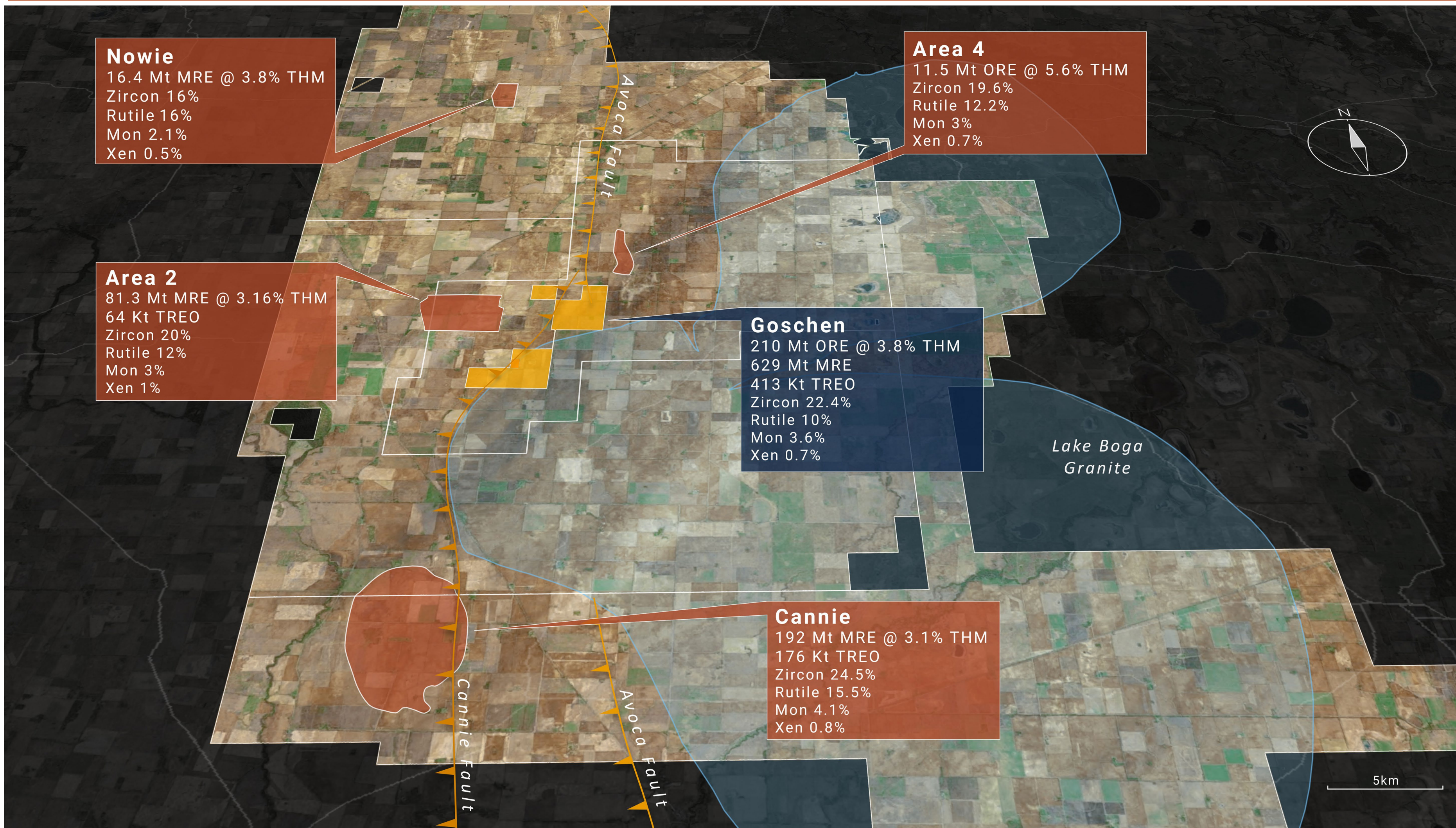
**Mining Licence application assessed by Earth Resources Regulator**

Notes:  
 (1) See ASX release dated 1 November 2023  
 (2) See ASX release dated 14 November 2023  
 (3) See ASX release dated 24 January 2024  
 (4) See ASX release dated 3 July 2024



# Company Mineral Resources & Reserves

VHM's assets in Victoria's critical minerals province at 30 June 2024



**892 Mt<sup>1</sup>**  
Mineral Resource  
estimate

**650 Kt<sup>1</sup>**  
TREO + Y<sub>2</sub>O<sub>3</sub>

**210 Mt<sup>2</sup>**  
Ore Reserve

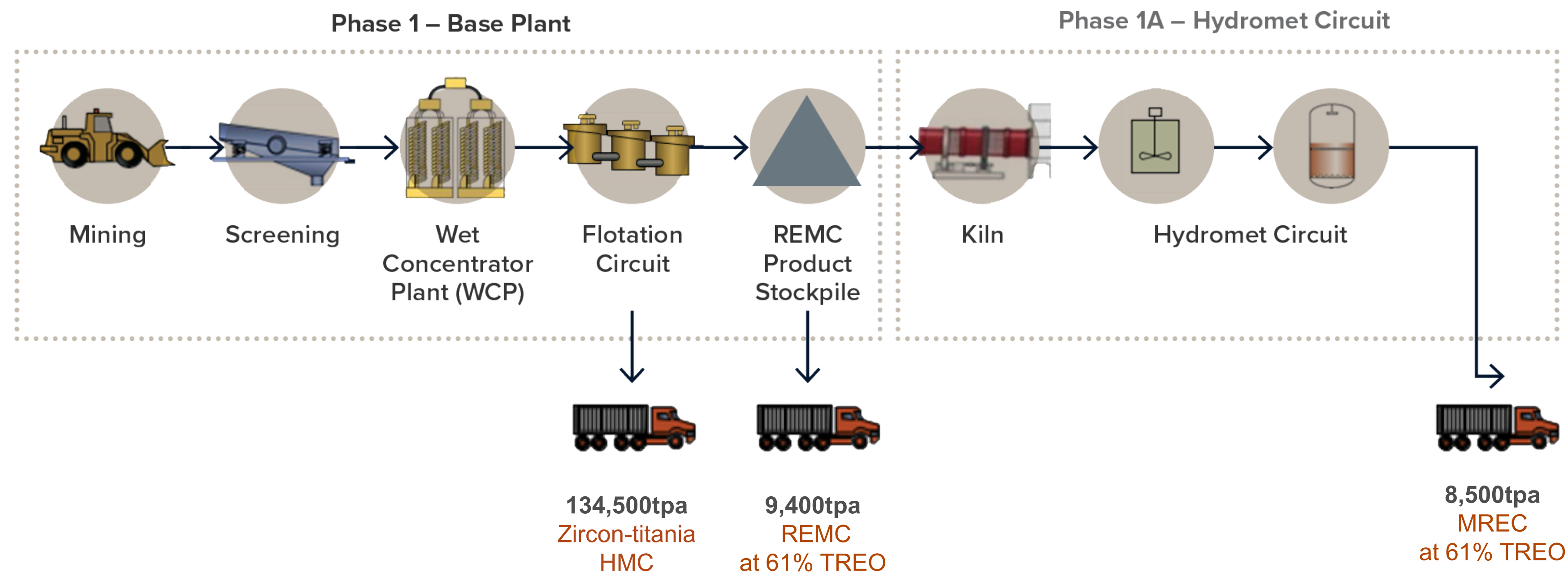
Notes:  
(1): See ASX Announcement dated 9 April 2024  
(2): Company Global Reserves last updated and released 29 September 2023



# Conventional low-cost processing

Simple, low-risk, proven flowsheet: multiple commodity streams with demonstrated high recoveries

**High recoveries:** Continuous improvements achieved through multiple bulk sample drill programs and metallurgical testwork programs has delivered high recoveries of valuable rare earth, zircon and titanium products.



- **Low-cost truck shovel operation:** No drilling or blasting due to minerals being fully liberated in sand.
- **Logistics:** Ultima rail terminal (45km from the processing facility) will provide intermodal rail solution, to reach the shipping export ports. Products can be safely transported via rail and ship.



# Infrastructure rich area

Optimally positioned to access existing local infrastructure

Rail



Ports



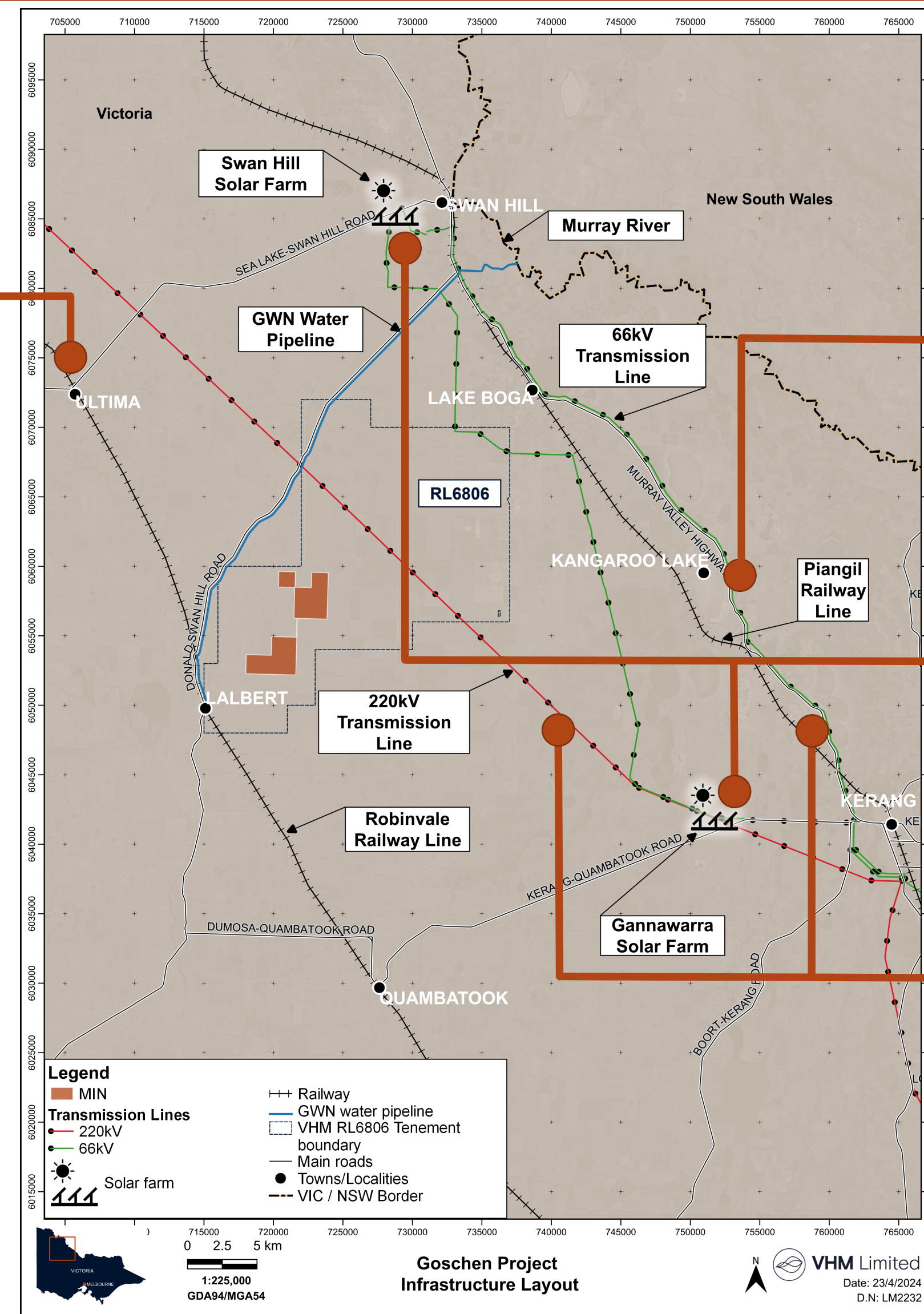
Water



Power  
(Solar farms)



Power  
(Transmission lines)





# Secure Supply of Light and Heavy Rare Earths

Australia's critical minerals are fundamental elements required for decarbonising global economies

87% of Goschen basket value is derived from the critical rare earths crucial for electric vehicles and the green energy transition<sup>1</sup>.

60 <b>Nd</b> Neodymium 144.242	59 <b>Pr</b> Praseodymium 140.90766	66 <b>Dy</b> Dysprosium 162.500
65 <b>Tb</b> Terbium 158.92535	40 <b>Zr</b> Zirconium 91.224	22 <b>Ti</b> Titanium 47.867





# Goschen Project highlights

The DFS Refresh<sup>1</sup> demonstrates the Goschen Project economics to be compelling



**5Mtpa**

**>20 years**

Conventional open cut mining methods excavation, load and haul



**8.5ktpa**

**MREC**

Target annual production rates for mixed rare earth carbonate (MREC)



**9.4ktpa**

**REMC**

Target annual production rates for rare earth mineral concentrate (REMC)



**134.5ktpa**

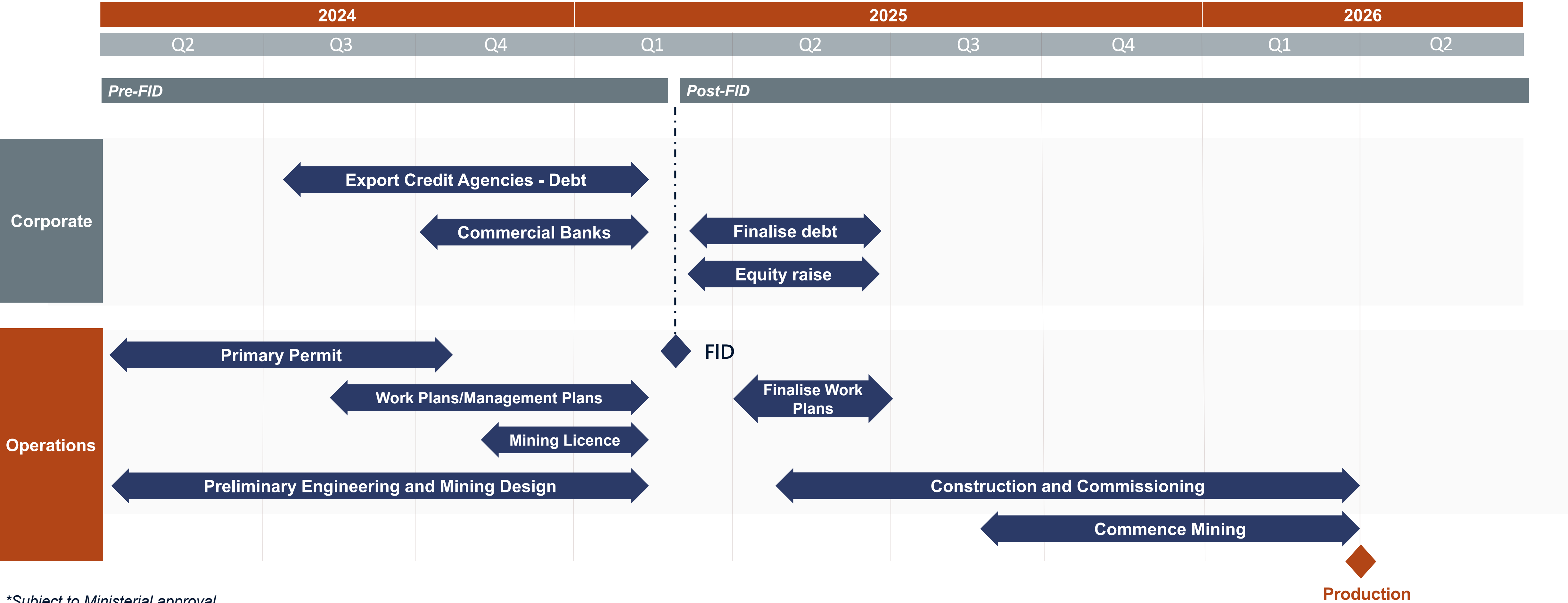
**HMC**

Target annual production rates for zircon/titania heavy mineral concentrate (HMC)

5Mtpa Goschen Project DFS Financial Metrics (Phase 1 and 1A)			
Pre-tax NPV10 (A\$ m)			1,525
Pre-tax IRR			44%
Payback from commencement of production (years)			2.8
Ore Reserve LoM (years)			20.5
Average ore grade (THM)			4.0%
Average strip ration (waste : ore)			2.6 : 1
First 10 Years of Mine	Average Production (tpa)	REMC	9,428
		MREC	8,568
		Zircon-titania HMC	134,500
	Average revenue per annum (A\$ m)		564
	Average opex per annum (A\$ m)		273
	Average EBITDA per annum (A\$ m)		291
	Average unlevered, pre-tax FCF per annum (A\$ m)		270
	Average revenue A\$/t ore		118
	Average operating costs A\$/t ore		57
	Payback period (years)		2.8



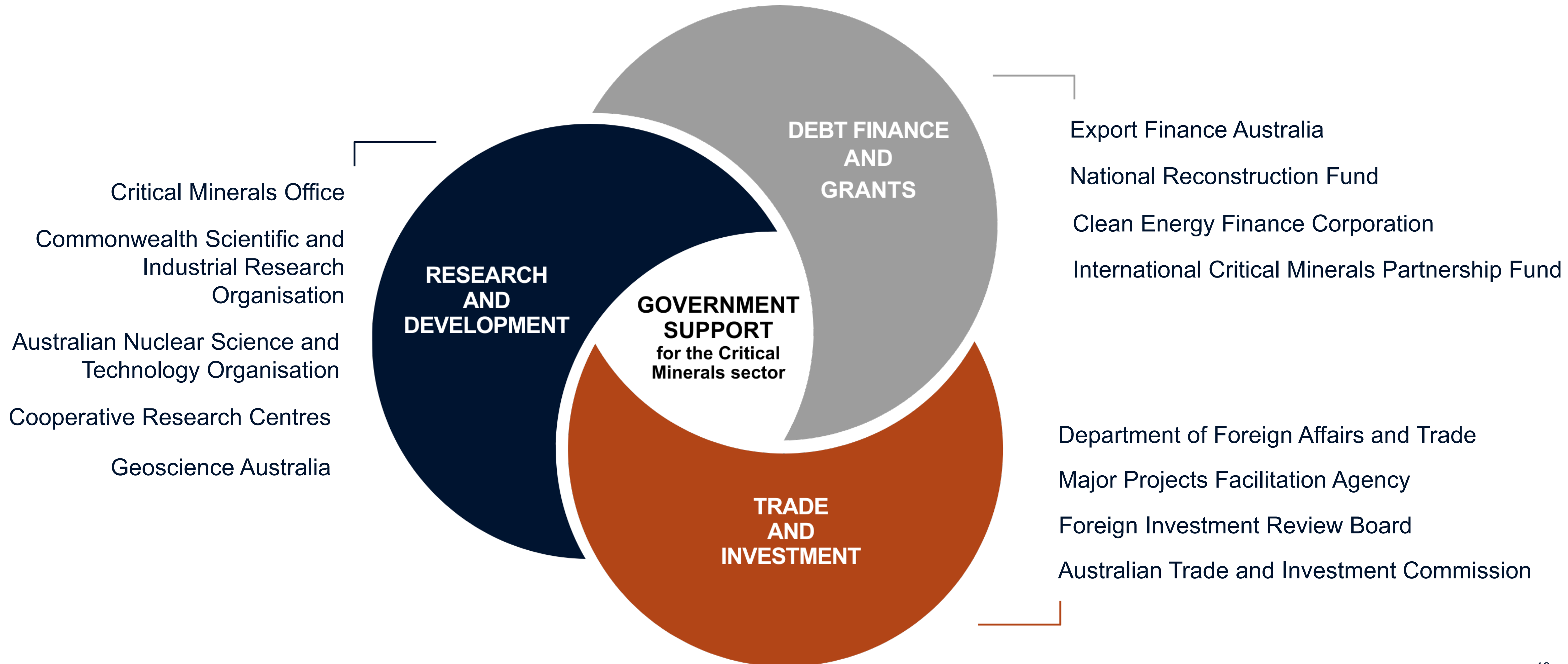
# Goschen timeline to production – derisk Final Investment Decision



*\*Subject to Ministerial approval*



# The Australian Government is backing the critical minerals sector



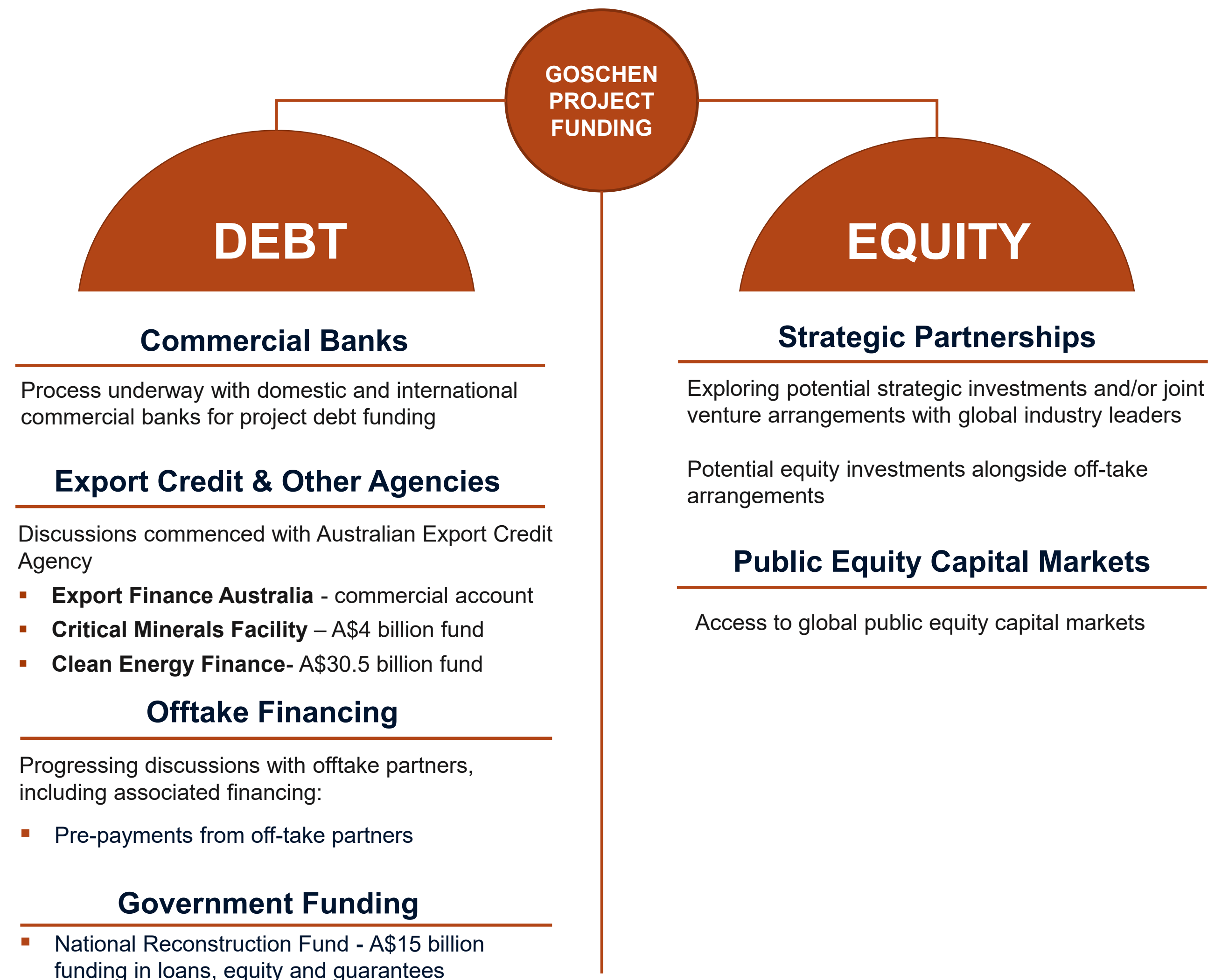


# Funding strategy

Multifaceted funding strategy comprising debt, equity and government funding

VHM is progressing its multifaceted funding strategy for the Goschen Project with a view to finalising the funding pathway ahead of Final Investment Decision.

We anticipate the Project will be funded using a combination of funding options and are well advanced in discussions in all categories.



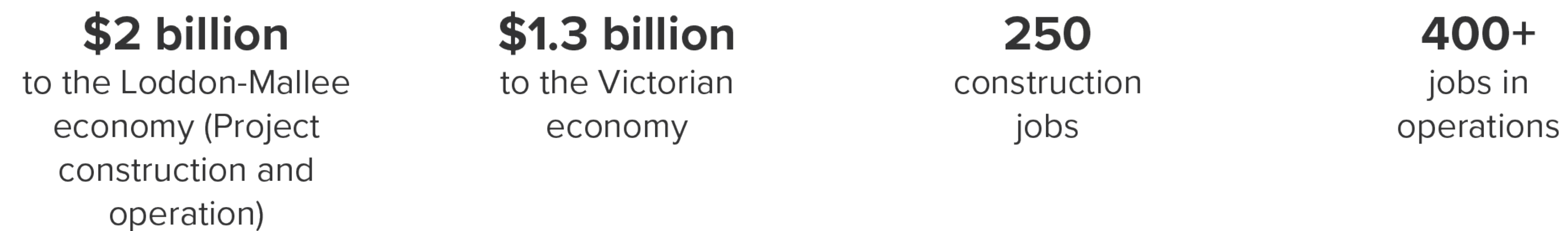


# Development benefits Stakeholders



## Local & State Benefits

The Project will bring significant benefits to the local community:



Source Deloitte Access Economics Report 2022, in Australian dollars





# Exploration Delivering

## Area 4 Orion Strandline - Maiden Probable Ore Reserve

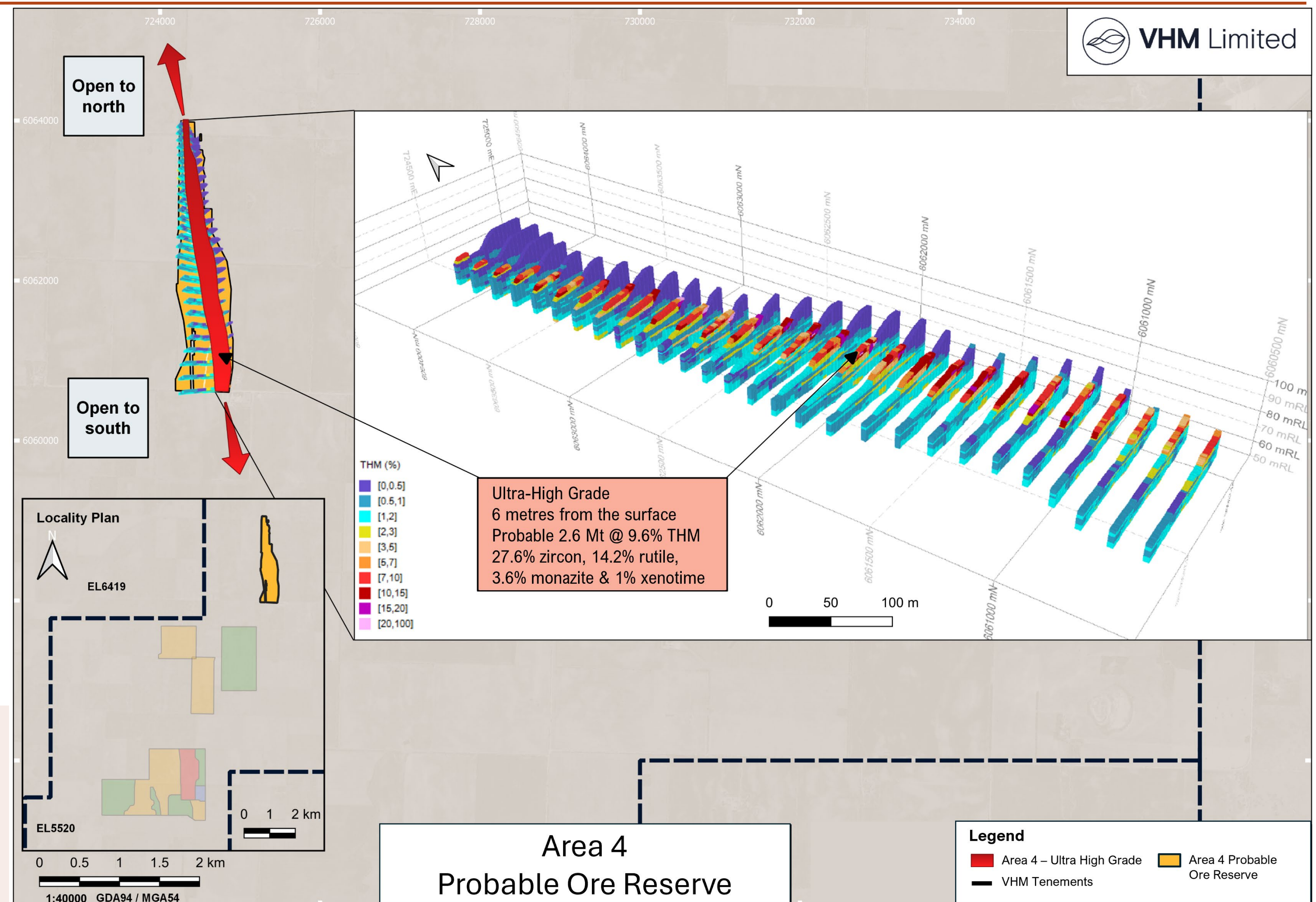
Added **11.5 Mt @ 5.6% THM** to Company Probable Ore Reserve<sup>1</sup>.

Within this Ore Reserve a high-grade mineable horizon of 2.6 Mt @ 9.6% THM exists at the top of the ore body 6m from surface, including:

- 245,500 tonnes of mineable THM
- Average in-situ grade of TREO 2300ppm
- 67,700 tonnes of zircon at an in-situ grade of 2.6%

Area 4 is situated 8km to the north of the proposed Goschen Rare Earths and Mineral Sands process plant.

**Significant high-grade ore body located near surface**



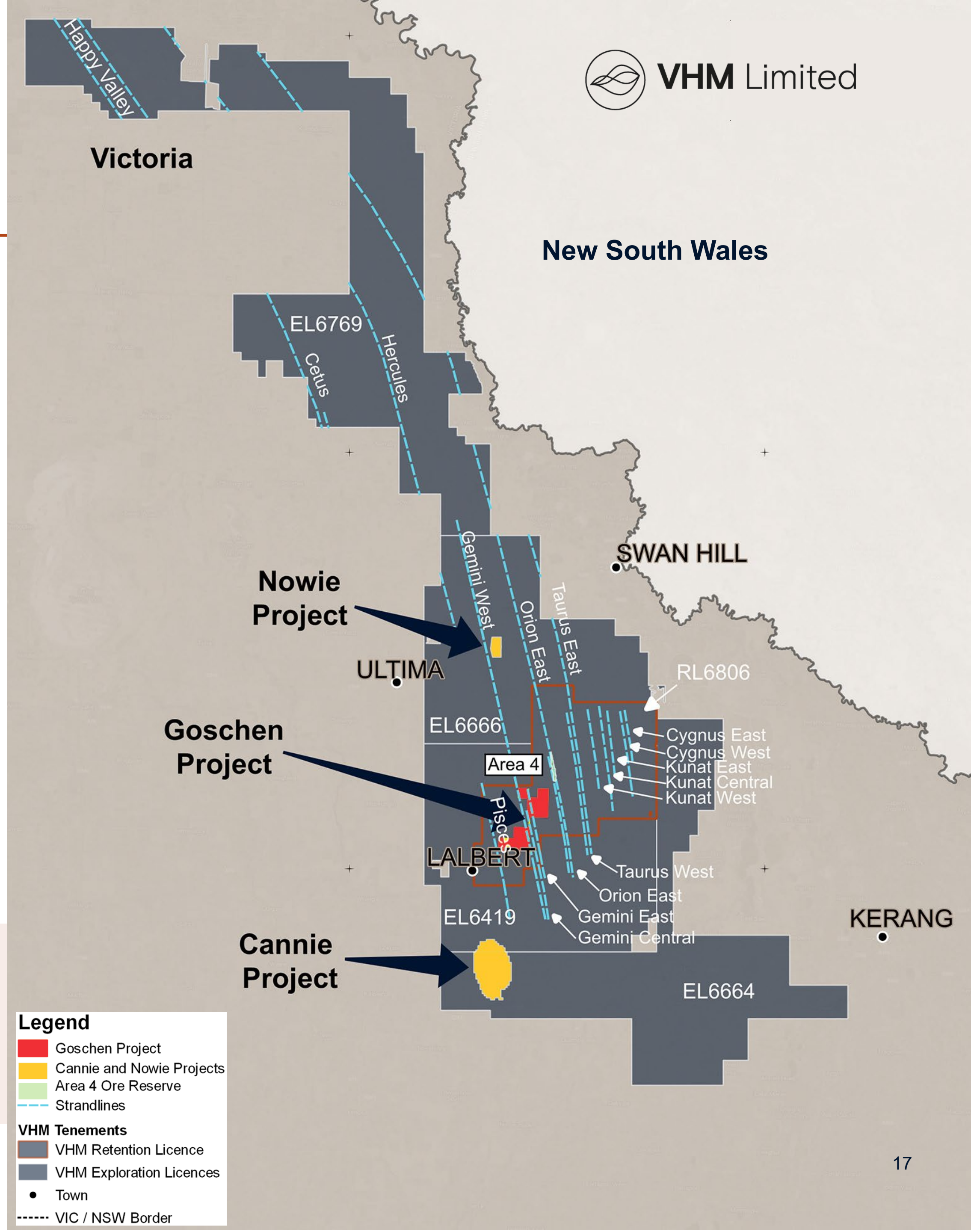


# Future opportunities

## High-grade strandlines

- 21 strandlines identified by processing historic data<sup>1</sup>.
- VHM drilling in targeted strandlines identified high-grade, near-surface THM.
- As part of its future exploration program, VHM will continue to target identified high-grade strandlines.

Several high-grade strandline prospects exist in VHM tenements





# De-risking development

The next six months

Activity	Status
<b>Environmental Approval</b>	Awaiting recommendation from Planning Minister on Environmental Effects Statement (EES)
<b>Mining Licence Approval*</b>	Earth Resources Regulator to assess Mining Licence application submitted (March 2023), with assessment subject to EES approval
<b>Work Plan Approval*</b>	Draft Work Plan exhibited as part of the Environment Effects Statement (EES)
<b>Mining</b>	Develop detailed Mining Plan
<b>Engineering Services</b>	Selection and award of preferred Engineering contractor for the Process Plant
<b>Non-Process Infrastructure</b>	Selection and award of contractors to deliver Non-Process Infrastructure work packages
<b>Finance</b>	Approach export credit agencies and commercial banks for project debt, and develop corporate approach for equity raise

*\*Subject to Ministerial approval*



# Appendix A. JORC Tables



# Company Mineral Resources

## 892.1 Mt Mineral Resource estimate

	Area	Mineral Resource Category	Material	In Situ THM	Bulk Density	Total Heavy Mineral (THM)	Slimes	Oversize material >2mm	THM Assemblage <sup>(4)</sup>						Rare Earth Oxides															
									Zircon	Rutile	Leucoxene	Ilmenite	Monazite	Xenotime	La <sub>2</sub> O <sub>3</sub>	CeO <sub>2</sub>	Pr <sub>6</sub> O <sub>11</sub>	Nd <sub>2</sub> O <sub>3</sub>	Sm <sub>2</sub> O <sub>3</sub>	Eu <sub>2</sub> O <sub>3</sub>	Gd <sub>2</sub> O <sub>3</sub>	Tb <sub>4</sub> O <sub>7</sub>	Dy <sub>2</sub> O <sub>3</sub>	Ho <sub>2</sub> O <sub>3</sub>	Er <sub>2</sub> O <sub>3</sub>	Tm <sub>2</sub> O <sub>3</sub>	Yb <sub>2</sub> O <sub>3</sub>	Lu <sub>2</sub> O <sub>3</sub>	Y <sub>2</sub> O <sub>3</sub>	TREO + Y <sub>2</sub> O <sub>3</sub>
			(Mt)	(Mt)	(gcm3)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	
Goschen	Area 1	Measured	30.7	1.8	1.76	5.7	15	5	29.9	10.8	9.0	24.7	4.3	0.8	0.48	0.96	0.11	0.38	0.07	0.004	0.06	0.01	0.07		0.05	0.01	0.05		0.47	2.72
		Indicated	62.2	1.4	1.72	2.3	18	2	26.6	11.5	9.2	25.0	4.6	0.9	0.53	1.11	0.12	0.46	0.08	0.004	0.07	0.02	0.07		0.05	0.01	0.05		0.48	3.04
		Total <sup>(1)</sup>	92.9	3.2	1.73	3.4	17	3	27.7	11.2	9.1	24.9	4.5	0.8	0.51	1.06	0.12	0.43	0.08	0.004	0.07	0.02	0.07		0.05	0.01	0.05		0.48	2.94
	Area 3	Indicated	204.1	6.9	1.73	3.4	19	3	19.2	9.0	8.0	25.0	3.2	0.6	0.36	0.78	0.09	0.33	0.06	0.003	0.05	0.01	0.05		0.04	0.01	0.04		0.37	2.19
		Inferred	287.7	6.7	1.72	2.3	18	3	17.2	8.7	7.5	22.7	2.9	0.5	0.35	0.76	0.08	0.31	0.06	0.003	0.05	0.01	0.05		0.03	0.01	0.03		0.36	2.10
		Total <sup>(1)</sup>	491.8	13.6	1.73	2.8	18	3	18.2	8.9	7.7	23.9	3.0	0.6	0.36	0.77	0.09	0.32	0.06	0.003	0.05	0.01	0.05		0.03	0.01	0.04		0.36	2.14
	Area 2	Indicated	75.5	2.39	1.73	3.2	21	7	20.51	12.60	9.5	23.1	3.4	0.7	0.41	0.88	0.10	0.37	0.07	0.00	0.06	0.01	0.06	0.01	0.04	0.01	0.05	0.00	0.42	2.48
		Inferred	5.74	0.18	1.73	3.1	21	8	19.32	10.15	7.6	21.7	3.6	0.6	0.45	0.95	0.11	0.39	0.07	0.00	0.06	0.01	0.06	0.01	0.04	0.01	0.04	0.01	0.40	2.62
		Total <sup>(3)</sup>	81.3	2.6	1.7	3.2	21	7	20.4	12.4	9.4	23.0	3.4	0.7	0.4	0.9	0.1	0.4	0.1	0.0	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.4	2.5
	Area 4	Indicated	18.0	0.8	1.74	4.6	20	5	19.0	11.0	10.0	24.0	3.0	1.0	0.32	0.67	0.07	0.28	0.05	0.002	0.05	0.01	0.05		0.03	0.01	0.04		0.33	1.91
		Total <sup>(3)</sup>	18.0	0.8	1.74	4.6	20	5	19.0	11.0	10.0	24.0	3.0	1.0	0.32	0.67	0.07	0.28	0.05	0.002	0.05	0.01	0.05		0.03	0.01	0.04		0.33	1.91
	Cannie	Inferred	192	5.9	1.70	3.1	19	6	24.5	15.5	24.3	2.1	4.1	0.8	0.49	1.06	0.12	0.45	0.08	0.004	0.07	0.01	0.07	0.02	0.05	0.01	0.05	0.01	0.49	3.00
		Total <sup>(2)</sup>	192	5.9	1.70	3.1	19	6	24.5	15.5	24.3	2.1	4.1	0.8	0.49	1.06	0.12	0.45	0.08	0.004	0.07	0.01	0.07	0.02	0.05	0.01	0.05	0.01	0.49	3.00
	Nowie	Inferred	16.4	0.6	1.73	3.8	19	5	16.1	15.5	24.4	5.0	2.1	0.5	0.28	0.61	0.07	0.26	0.05	0.003	0.04	0.01	0.05	0.01	0.04	0.01	0.04	0.01	0.33	1.80
		Total <sup>(3)</sup>	16.4	0.6	1.73	3.8	19	5	16.1	15.5	24.4	5.0	2.1	0.5	0.28	0.61	0.07	0.26	0.05	0.003	0.04	0.01	0.05	0.01	0.04	0.01	0.04	0.01	0.33	1.80
	Grand Total	Measured	30.7	1.8	1.76	5.7	15	5	29.9	10.8	9.0	24.7	4.3	0.8	0.48	0.96	0.11	0.38	0.07	0.004	0.06	0.01	0.07		0.05	0.01	0.05		0.47	2.72
		Indicated	359.8	11.5	1.73	3.2	19	4	20.4	10.2	8.6	24.5	3.4	0.7	0.39	0.83	0.10	0.35	0.06	0.003	0.05	0.01	0.05	0.00	0.04	0.01	0.04	0.00	0.39	2.34
		Inferred	501.6	13.3	1.71	2.7	18	4	20.4	12.0	15.7	12.8	3.4	0.7	0.41	0.89	0.10	0.37	0.07	0.003	0.06	0.01	0.06	0.01	0.04	0.01	0.04	0.00	0.42	2.49
		TOTAL <sup>(6)</sup>	892.1	26.6	1.7	3.0	18	4	21.0	11.2	12.2	18.7	3.4	0.7	0.41	0.87	0.10	0.36	0.07	0.003	0.06	0.01	0.06	0.00	0.04	0.01	0.04	0.00	0.41	2.44

Notes: Any discrepancies in totals are a function of rounding.

1. Mineral resources reported at a cut-off grade of 1.0% THM.

2. Mineral resources reported at a cut-off grade of 1.75% THM.

3. Mineral resources reported at a cut-off grade of 1.0% TVHM (THM \* VHM)

4. Mineral assemblage, via QEMScan Particle Analysis, is reported as a percentage of in situ THM content.

5. In-Situ TREO Grade is calculated by THM Grade (2.95%) multiplied by TREO Grade (2.43%).

6. Combined mineral resource at a cut-off grade of 1% THM for Area1 and Area 3 and 1% TVHM for Nowie, Area 2 and Area 4.

The Mineral Resource estimate was updated and disclosed in the ASX release published 9 April 2024

	Material	In-Situ TREO + Y <sub>2</sub> O <sub>3</sub> Grade <sup>(5)</sup>	In-Situ TREO + Y <sub>2</sub> O <sub>3</sub>
	(t)	(%)	(t)
Area 1, Area 2, Area 3, Area 4, Cannie, Nowie	892,000,000	0.07	650,000



# Company Ore Reserves

## 210.2Mt Ore Reserve

Area	Classification	Ore	In-situ THM	THM	THM Assemblage <sup>1</sup>					
					Zircon	Rutile	Leucoxene	Ilmenite	Monazite	Xenotime
		(Mt)	(Mt)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
Area 1	Proved	24.5	1.3	5.4	29.9	10.8	9.0	24.7	4.3	0.8
Area 1	Probable	14.6	0.5	3.2	29.2	11.7	9.2	25.5	4.5	0.9
Area 3	Probable	159.6	5.6	3.5	20.3	9.4	8.1	25.8	3.4	0.6
Area 4	Probable	11.5	0.6	5.6	19.6	12.2	10.1	24.6	3.0	0.7
Total	Proved	24.5	1.3	5.4	29.9	10.8	9.0	24.7	4.3	0.8
	Probable	185.7	6.7	3.6	20.9	9.8	8.4	25.7	3.4	0.6
Grand Total		210.2	8.0	3.8	22.4	10.0	8.5	25.5	3.6	0.7

Area	Classification	Rare Earth Oxides <sup>1</sup>													
		CeO <sub>2</sub>	Dy <sub>2</sub> O <sub>3</sub>	Er <sub>2</sub> O <sub>3</sub>	Eu <sub>2</sub> O <sub>3</sub>	Gd <sub>2</sub> O <sub>3</sub>	La <sub>2</sub> O <sub>3</sub>	Nd <sub>2</sub> O <sub>3</sub>	Pr <sub>6</sub> O <sub>11</sub>	Sm <sub>2</sub> O <sub>3</sub>	Tb <sub>4</sub> O <sub>7</sub>	Tm <sub>2</sub> O <sub>3</sub>	Y <sub>2</sub> O <sub>3</sub>	Yb <sub>2</sub> O <sub>3</sub>	TREO
		(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
Area 1	Proved	0.960	0.070	0.050	0.004	0.060	0.480	0.380	0.110	0.070	0.012	0.008	0.470	0.050	2.720
Area 1	Probable	0.971	0.067	0.047	0.004	0.060	0.468	0.400	0.108	0.072	0.011	0.007	0.458	0.050	2.721
Area 3	Probable	0.805	0.057	0.039	0.003	0.056	0.378	0.339	0.093	0.064	0.009	0.006	0.386	0.040	2.297
Area 4	Probable	0.655	0.049	0.035	0.002	0.046	0.310	0.277	0.073	0.050	0.008	0.006	0.335	0.037	1.884
Total	Proved	0.960	0.070	0.050	0.004	0.060	0.480	0.380	0.110	0.070	0.012	0.008	0.470	0.050	2.720
	Probable	0.802	0.057	0.039	0.003	0.055	0.378	0.338	0.092	0.064	0.009	0.006	0.386	0.041	2.287
Grand Total		0.828	0.059	0.041	0.003	0.056	0.395	0.345	0.095	0.065	0.010	0.006	0.400	0.042	2.359

Note: (1) Any discrepancies in totals are a function of rounding. THM Assemblage and Rare Earth Oxides are reported as a percentage of in-situ THM content. The Ore Reserve was updated and disclosed under the JORC Code (2012) in the ASX release published 29 September 2023.



# Goschen DFS Ore Reserve

98.8Mt Ore Reserve – Subset of global Company Ore Reserves

Area	Date	Classification	Ore	THM	Zircon	Rutile	Leucoxene	Ilmenite	Monazite	Xenotime
			(Mt)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
Area 1	Mar-21	Proved	25.5	5.6	29.6	10.8	9.1	24.7	4.3	0.8
Area 1	Mar-21	Probable	7.6	2.2	27.6	12.7	10.5	25.9	4.3	0.9
Area 3	Feb-21	Probable	65.7	3.6	19.7	9.1	7.9	25.3	3.3	0.6
Total		Proved	25.5	5.6	29.6	10.8	9.1	24.7	4.3	0.8
		Probable	73.3	3.4	20.2	9.3	8.1	25.4	3.4	0.6
Grand Total			98.8	4.0	23.6	9.9	8.5	25.1	3.7	0.7

Area	Date	Classification	CeO <sub>2</sub>	Dy <sub>2</sub> O <sub>3</sub>	Er <sub>2</sub> O <sub>3</sub>	Eu <sub>2</sub> O <sub>3</sub>	Gd <sub>2</sub> O <sub>3</sub>	La <sub>2</sub> O <sub>3</sub>	Nd <sub>2</sub> O <sub>3</sub>	Pr <sub>6</sub> O <sub>11</sub>	Sm <sub>2</sub> O <sub>3</sub>	Tb <sub>4</sub> O <sub>7</sub>	Tm <sub>2</sub> O <sub>3</sub>	Y <sub>2</sub> O <sub>3</sub>	Yb <sub>2</sub> O <sub>3</sub>	TREO
			(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
Area 1	Mar-21	Proved	0.960	0.070	0.050	0.004	0.060	0.480	0.380	0.110	0.070	0.012	0.008	0.470	0.050	2.720
Area 1	Mar-21	Probable	0.957	0.065	0.045	0.003	0.059	0.454	0.398	0.104	0.071	0.012	0.007	0.456	0.050	2.682
Area 3	Feb-21	Probable	0.795	0.056	0.038	0.003	0.055	0.373	0.335	0.091	0.063	0.009	0.006	0.383	0.039	2.271
Total			Proved	0.960	0.070	0.050	0.004	0.060	0.380	0.110	0.070	0.012	0.008	0.470	0.050	2.720
			Probable	0.806	0.056	0.039	0.003	0.055	0.339	0.092	0.064	0.009	0.006	0.388	0.040	2.298
Grand Total			0.862	0.061	0.043	0.003	0.057	0.415	0.354	0.099	0.066	0.010	0.007	0.417	0.044	2.451

Note: (1) Any discrepancies in totals are a function of rounding. THM Assemblage and Rare Earth Oxides are reported as a percentage of in-situ THM content. The Ore Reserve was disclosed under the JORC Code (2012) in the Company Prospectus 5 January 2023.





Level 11, 330 Collins Street, Victoria 3000  
[vhmltd.com.au](http://vhmltd.com.au)

---

### For further information contact:

Ron Douglas  
Chief Executive Officer  
[Ron.Douglas@vhmltd.com.au](mailto:Ron.Douglas@vhmltd.com.au)

