

## IMARC Presentation

31 October 2022

ASX Markets Announcement Office  
Exchange Centre  
20 Bridge Street  
Sydney NSW 2000

### BY ELECTRONIC LODGEMENT

#### **Xanadu's Presentation to the International Mining and Resources Conference 2-4 November 2022**

Please find attached for release to the market, Xanadu Mines Ltd's Presentation to the *International Mining and Resources Conference (IMARC)* being held in Sydney from Wednesday, 2 to Friday, 4 November 2022.

-ENDS-

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#### **About Xanadu Mines Ltd:**

Xanadu is an ASX and TSX listed Exploration company operating in Mongolia. We give investors exposure to globally significant, large-scale copper-gold discoveries and low-cost inventory growth. Xanadu maintains a portfolio of exploration projects and remains one of the few junior explorers on the ASX or TSX who control a globally significant copper-gold deposit in our flagship Kharmagtai project. For information on Xanadu visit: [www.xanadumines.com](http://www.xanadumines.com).

This Announcement was authorised for release by Xanadu's Executive Chairman and Managing Director.

XANADU MINES

# Discovering and Defining World Class Mineral Deposits in Mongolia

IMARC Sydney  
2-4 November 2022



## Cautionary Statements

The Study has been undertaken to assess viability of developing the Kharmagtai Copper-Gold Project by constructing an open cut mine and processing facility to produce copper concentrate for export. It is a preliminary technical and economic Study of the potential viability of the Kharmagtai Project. It is based on low level technical and economic assessments that are not sufficient to support the estimation of ore reserves. Further exploration and evaluation work and appropriate studies are required before Xanadu will be in a position to estimate any ore reserves or to provide any assurance of an economic development case. The Study is based on the material assumptions in this document. These include assumptions about the availability of funding. While Xanadu considers all of the material assumptions to be based on reasonable grounds, there is no certainty that they will prove to be correct or that the range of outcomes indicated by the Study will be achieved. To achieve the range of outcomes indicated in the Study, funding of in the order of US\$700 million will likely be required. Investors should note that there is no certainty that Xanadu will be able to raise that amount of funding when needed. It is also possible that such funding may only be available on terms that may be dilutive to or otherwise affect the value of Xanadu's existing shares. It is also possible that Xanadu could pursue other 'value realisation' strategies such as a sale, partial sale or joint venture of the project. If it does, this could materially reduce Xanadu proportionate ownership of the project. Given the uncertainties involved, investors should not make any investment decisions based solely on the results of the Study. There is a low level of geological confidence associated with inferred mineral resources and there is no certainty that further exploration work will result in the determination of indicated mineral resources or that the production target itself will be realised. The Study is based on the December 2021 Mineral Resource Estimate, is based on low-level technical and economic assessments, and is insufficient to support estimation of Ore Reserves or to provide assurance of an economic development case at this stage, or to provide certainty that the conclusions of the Study will be realised. The Study has been completed to a level of accuracy of +/-35% in line with industry standard accuracy for this stage of development. The Company has reasonable grounds for disclosing a Production Target, given that in the first seven years of production, 100% of the mill feed is scheduled from the Indicated Resource category, which exceeds the economic payback period for the project by 3 years. Approximately 55% of the Life of Mine Production Target is in the Indicated Mineral Resource category, and 45% is in the Inferred Mineral Resource category. There is a lower level of geological confidence associated with Inferred Mineral Resources, and while the Company considers all the material assumptions in this Study to be based on reasonable grounds, there is no certainty that they will prove to be correct or that the range of outcomes indicated will be achieved. The Mineral Resources underpinning the production target in the Study have been prepared by a Competent Person in accordance with the requirements of Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (JORC Code 2012). The Competent Person's Statement is found in the Geology and Resources section of this Study. For full details of the Mineral Resource Estimate, please refer to Xanadu ASX/TSX Announcement dated 25 February 2022. Xanadu confirms that it is not aware of any new information or data that materially affects the information included in that release. All material assumptions and technical parameters underpinning the estimates in that Announcement continue to apply and have not materially changed. Note that unless otherwise stated, all currency in this Study is US dollars.

## Forward Looking Statements

Certain statements contained in this Study, including information as to the future financial or operating performance of Xanadu and its projects may also include statements which are 'forward-looking statements' that may include, amongst other things, statements regarding targets, estimates and assumptions in respect of mineral reserves and mineral resources and anticipated grades and recovery rates, production and prices, recovery costs and results, capital expenditures and are or may be based on assumptions and estimates related to future technical, economic, market, political, social and other conditions. These 'forward-looking statements' are necessarily based upon a number of estimates and assumptions that, while considered reasonable by Xanadu, are inherently subject to significant technical, business, economic, competitive, political and social uncertainties and contingencies and involve known and unknown risks and uncertainties that could cause actual events or results to differ materially from estimated or anticipated events or results reflected in such forward-looking statements. Xanadu disclaims any intent or obligation to update publicly or release any revisions to any forward-looking statements, whether as a result of new information, future events, circumstances or results or otherwise after the date of this Study or to reflect the occurrence of unanticipated events, other than required by the Corporations Act 2001 (Cth) and the Listing Rules of the Australian Securities Exchange (ASX) and Toronto Stock Exchange (TSX). The words 'believe', 'expect', 'anticipate', 'indicate', 'contemplate', 'target', 'plan', 'intends', 'continue', 'budget', 'estimate', 'may', 'will', 'schedule' and similar expressions identify forward-looking statements. All 'forward-looking statements' made in this Study are qualified by the foregoing cautionary statements. Investors are cautioned that 'forward-looking statements' are not a guarantee of future performance and accordingly investors are cautioned not to put undue reliance on 'forward-looking statements' due to the inherent uncertainty therein. Xanadu has concluded that it has a reasonable basis for providing these forward-looking statements and the forecast financial information included in this Study. To achieve the range of Kharmagtai Copper-Gold Project outcomes indicated in the 2022 Study, funding of in the order of an approximately US\$700 million will likely be required by the Company. Based on current market conditions and the results of studies undertaken, there are reasonable grounds to believe the Project can be financed via a combination of equity and debt, as has been done for numerous comparable projects in Mongolia and other jurisdictions in Asia in recent years. Debt may be secured from several sources including Australian banks, international banks, the high yield bond market, resource credit funds, and in conjunction with product sales of offtake agreements. It is also possible the Company may pursue alternative funding options, including undertaking a corporate transaction, seeking a joint venture partner or partial asset sale. There is, however, no certainty that Xanadu will be able to source funding as and when required. Whilst no formal funding discussions have concluded, the Company has engaged with several potential financiers of the Kharmagtai Copper-Gold Project and these financial institutions and corporations have expressed an interest in being involved in funding of the Project. This ASX Study has been prepared in compliance with the current JORC Code (2012) and the ASX Listing Rules. All material assumptions, including sufficient progression of all JORC modifying factors, on which the production target and forecast financial information are based have been included in this ASX Study.

# Strategy Overview

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Discover, Define, and Realise Value in World Class Mineral Deposits



**Active Search  
for New Projects**

**Red Mountain (100%)**

- Trenching underway to define drill targets<sup>5</sup>

**Kharmagtai (76.5%)<sup>4</sup>**

- Globally significant Mineral Resource Estimate<sup>1</sup>
- PEA and Scoping Study delivers strong project economics<sup>2</sup>
- Fully funded PFS and Exploration post Zijin strategic partnership<sup>3</sup>

<sup>1</sup> ASX/TSX Announcement 8 December 2021 – Kharmagtai Resource Grows to 1.1Bt containing 3Mt Cu and 8Moz Au

<sup>2</sup> ASX/TSX Announcement 6 April 2022 – Scoping Study Kharmagtai Copper-Gold Project

<sup>3</sup> ASX/TSX Announcement 19 April 2022 – Strategic Partnership with Zijin Mining

<sup>4</sup> Will become 38.25% upon completion of 50-50 Joint Venture with Zijin Mining Group

<sup>5</sup> ASX/TSX announcement 24 August 2022 – Exploration Ramps up at Red Mountain



# Mongolian Exploration Portfolio

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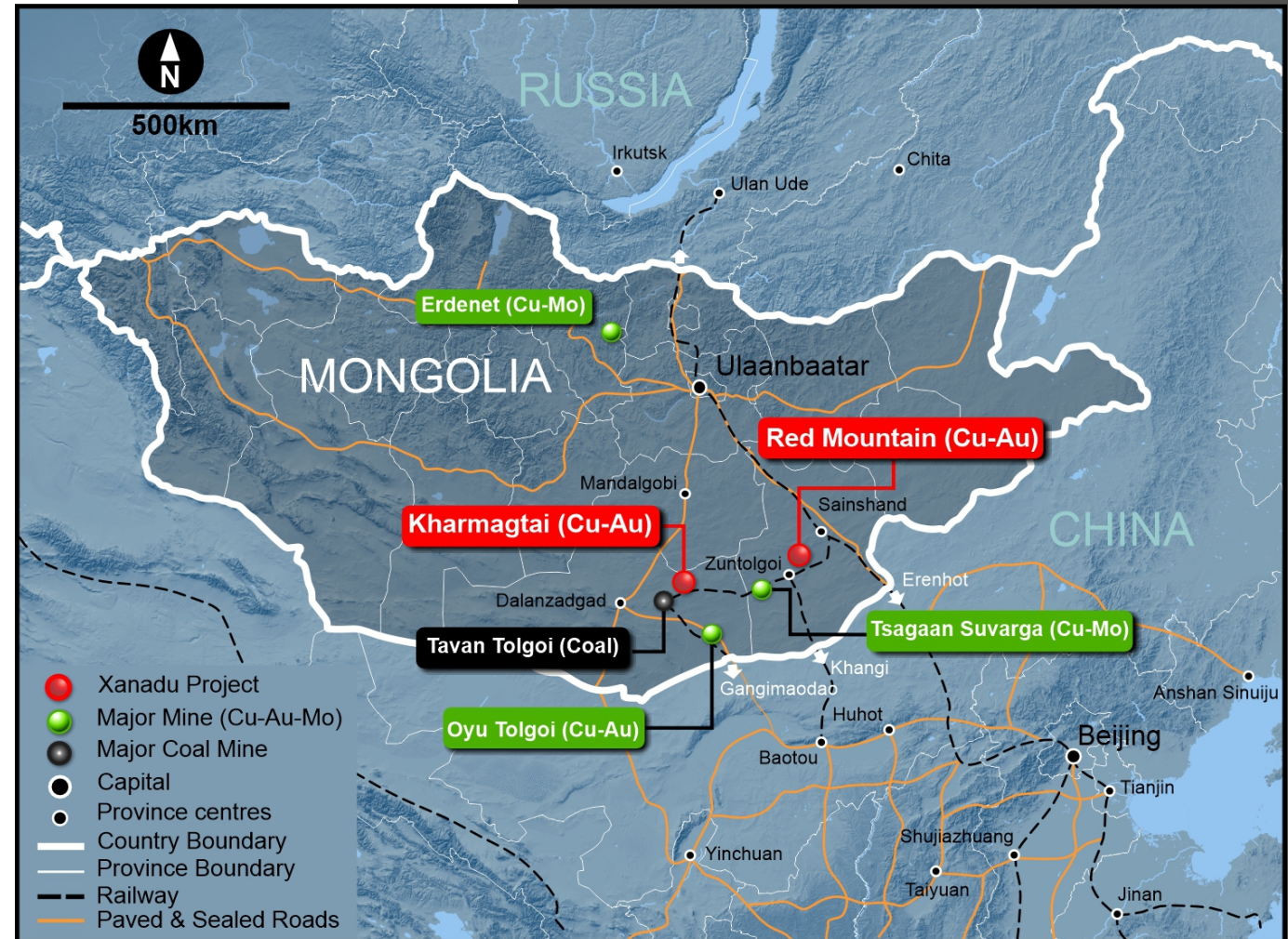
Untapped opportunities in a proven & growing mining jurisdiction

## Projects

- Kharmagtai – major porphyry Cu-Au Resource, PEA completed in 2022; PFS commencing in 2023
- Red Mountain – active trenching to define targets focused on shallow, higher grade mineralisation
- New Projects – search underway

## Mongolia

- Emerging mining jurisdiction
- Low ESG Risk
- Gov't investing in mining infrastructure
- Gov't seeking increased foreign investment



## Transformed by Strategic Partnership with Zijin Mining

### XAM (ASX, TSX) Capital Structure

#### Current

**A\$0.029**

Share Price as @ 27/10/2022

**1,412M**

Shares on issue @ 27/10/2022

**A\$41M**

Market Cap @ A\$0.029/share

**A\$2M**

Cash Balance reported as  
@ 31/10/2022

**A\$39M**

Enterprise Value

**55% Top 20 Shareholders<sup>1</sup>**

#### INSTITUTIONAL SHAREHOLDERS

ACA **16%**  
Zijin **10%**  
Others **16%**

#### BOARD & MANAGEMENT

**6%** on a fully diluted basis  
(37m shares & 47m  
performance options)

#### After Zijin Deal<sup>2</sup>

**1,591M**

Shares on issue after Phase 2 completed

**A\$12.7M + US\$35M**

Cash Balance reported as @ 30/6/2022

+ Phase 2 Cash Injection \$7.2M (4c/sh) to 19.99% shareholding  
+ Phase 3 Project Joint Venture cash US\$35M

**61% Top 20 Shareholders**

#### INSTITUTIONAL SHAREHOLDERS

Zijin **20%**  
ACA **15%**  
Others **15%**

#### BOARD & MANAGEMENT

**5%** on a fully diluted basis  
(37m shares & 47m  
performance options)



# Proven Board & Management Team

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## Board



**Ganbayar  
Lkhagvasuren**

Country Manager  
& Executive Director



**Colin  
Moorhead**

Executive Chairman &  
Managing Director



**Michele  
Muscillo**

Non-executive  
Director



**Tony  
Pearson**

Non-executive  
Director

## Management



**Munkhsaikhan  
Dambiinyam**

Chief Operating  
Officer



**Andrew  
Stewart**

Vice President  
Exploration



**Mat  
Brown**

Chief Geologist



**Spencer  
Cole**

Chief Development Officer  
Chief Financial Officer

Track record of discovering  
and developing world class  
mineral deposits

- ✓ Mongolia Expertise
- ✓ Deep Exploration Skills
- ✓ Experienced Developers of  
Porphyry Deposits
- ✓ Significant Commercial and  
Deal Making Capability



## Tier 1 Scale copper-gold, near-surface Resource, positioned for development

### ✓ Major Resource

1.1Bt containing 3Mt Cu & 8Moz Au incl. >100Mt higher-grade zone

- Resource still open at depth and along strike
- New high-grade bornite intercepts have extended mineralisation since the 2021 Resource model <sup>4</sup>

### ✓ High Quality Project

PEA / Scoping Study<sup>1</sup> delivers US\$630M NPV; 4-yr payback & 20% IRR

- 30-yr mine life; producing 50ktpa copper & 110kozpa gold
- First quartile AISC for first 5 years

### ✓ Well Funded

US\$35M designated for PFS & continued Discovery Exploration

- Strategic partnership with Zijin Mining Group<sup>2</sup>

<sup>1</sup> ASX/TSX Announcement 6 April 2022 – Scoping Study – Kharmagtai Copper-Gold Project; includes appropriate economic ranges

<sup>2</sup> ASX/TSX Announcement 19 April 2022 – Strategic Partnership with Zijin Mining

<sup>3</sup> Conversion based on AUD:USD = 0.7387 as at 19 Apr 2022 close (transaction announcement date)

<sup>4</sup> ASX/TSX Announcement 1 December 2021 – Further Extensions to High Grade Zones at Stockwork Hill

# Kharmagtai

## Our Flagship Project





# Strategic Partnership with Zijin Mining

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Three phases of investment<sup>1</sup> totaling US\$43M<sup>2</sup> (A\$58M<sup>2</sup>)

## Phase 1 Done, Phases 2/3 Very Soon

- Phase 1 = A\$5.6M cash (completed @ 4cps, 38% premium) for 9.9% stake in XAM
- Phase 2 = A\$7.2M cash @ 4cps, to increase to a 19.99% stake in XAM
- Phase 3 = US\$35M cash invested in Khuiten Metals, for a 50-50 JV that controls Kharmagtai

## Cash Backed Deal

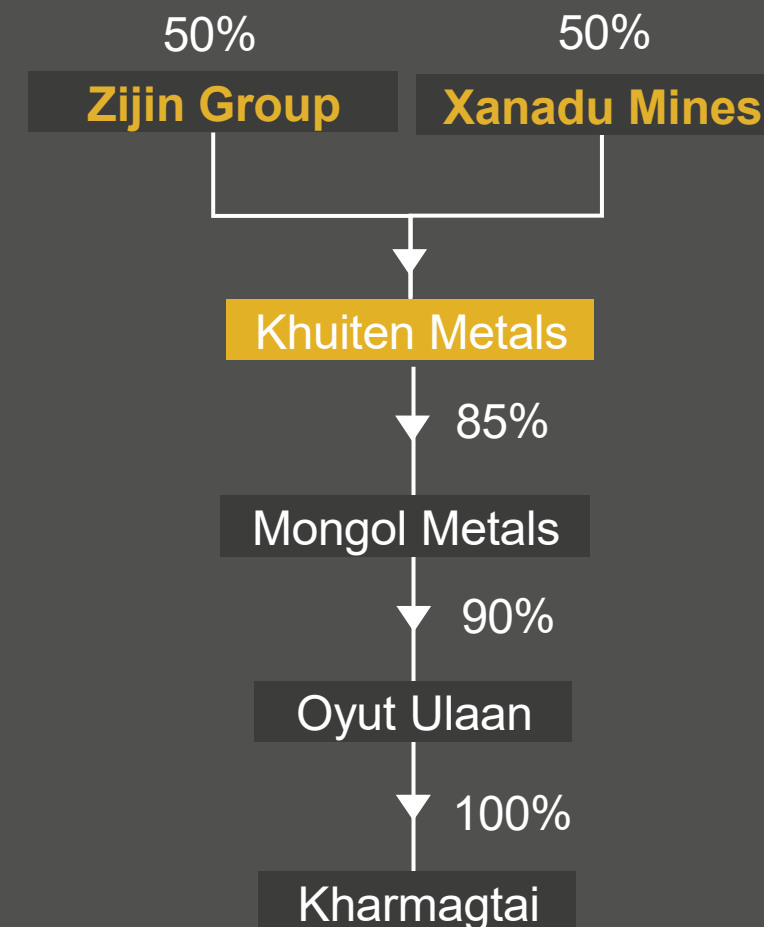
- Implied value of Kharmagtai **US\$92M<sup>5</sup>** or A\$29/t CuEq MRE

## XAM Funded for Exploration and Decision to Mine

- Phase 1/2 - funds next stage Red Mountain exploration & corporate
- Phase 3 – fully funds Kharmagtai PFS (US\$20M) to Decision to Construct and Kharmagtai Discovery Exploration (US\$15M)

## Post-Deal Asset Ownership<sup>3</sup>

*Kharmagtai controlled by Khuiten Metals*



<sup>1</sup> ASX/TSX Announcement 19 April 2022 – Strategic Partnership with Zijin Mining

<sup>2</sup> Currency conversion based on AUD:USD = 0.7387 as at 19 Apr 2022 close (transaction announcement date)

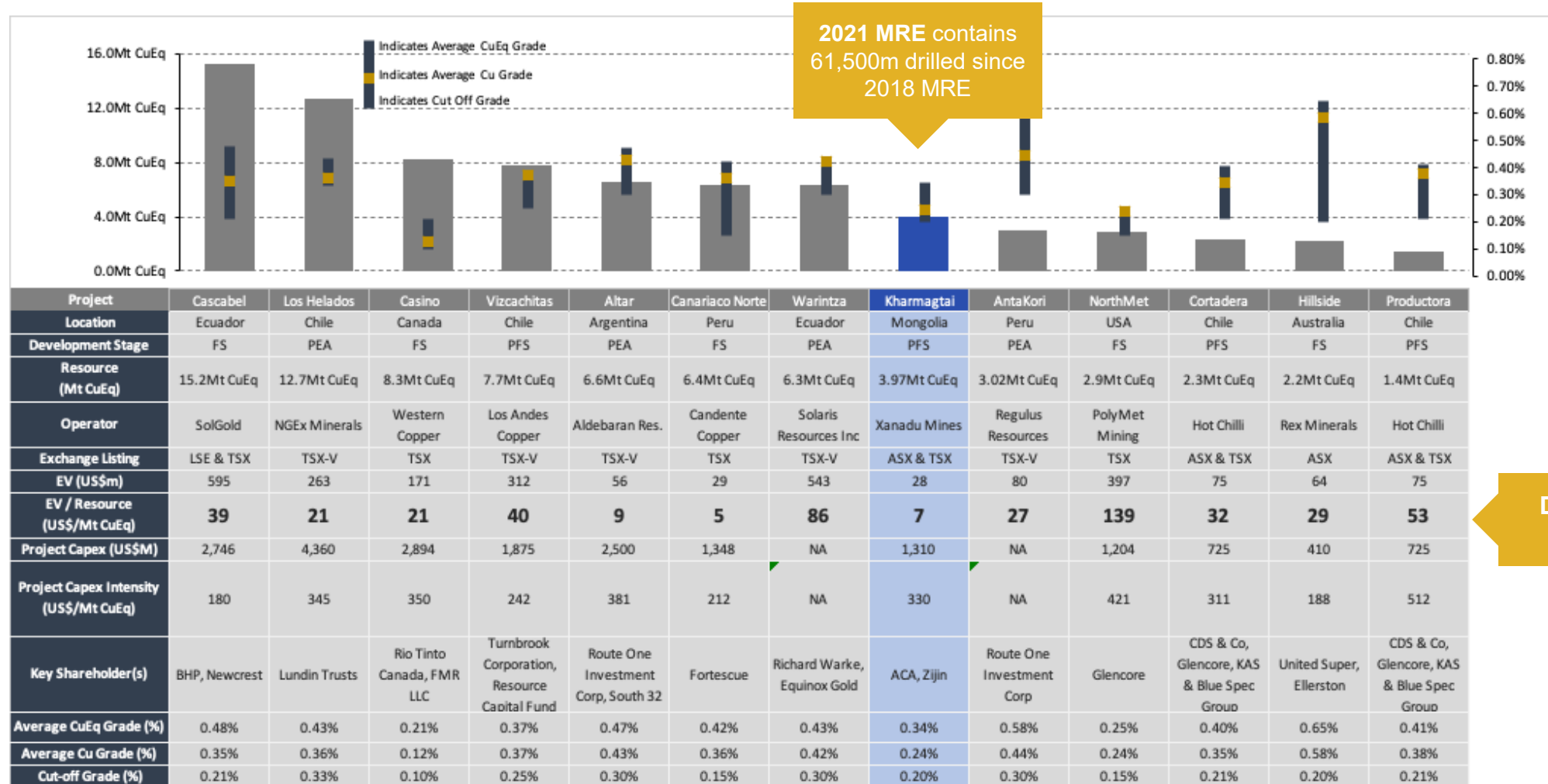
<sup>3</sup> Effective ownership of Kharmagtai by each of Xanadu and Zijin is 38.25% (= 50% \* 85% \* 90%)

<sup>4</sup> ASX/TSX announcement 22 August 2022 – FIRB approves Zijin investment in Xanadu

<sup>5</sup> US\$35M / 38.25% effective ownership = US\$92M

# Kharmagtai Copper Resource - Best Ranked on ASX

Ascending global ranks - one of the largest undeveloped Copper Resources controlled by a junior



Deeply Discounted Versus Peers

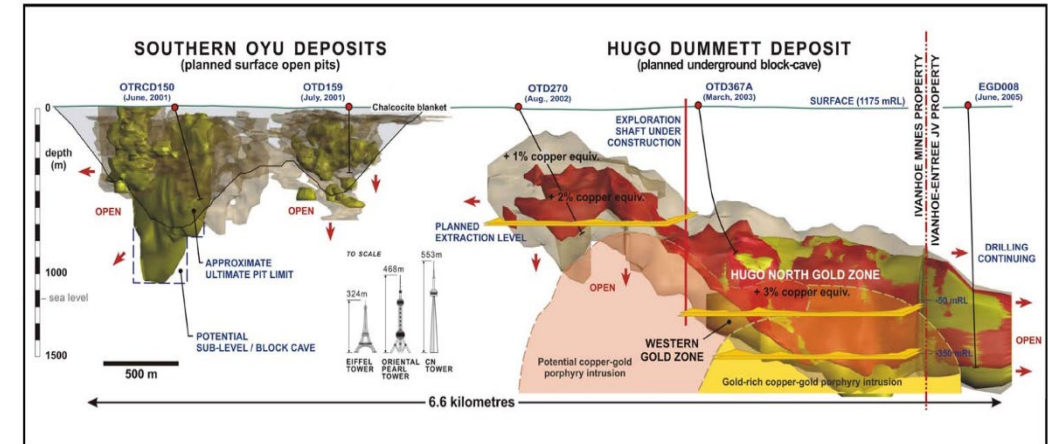
# Kharmagtai Exploration - Not If, But When?

Higher-grade depth limit untested;  
potential for “Hugo North” discovery

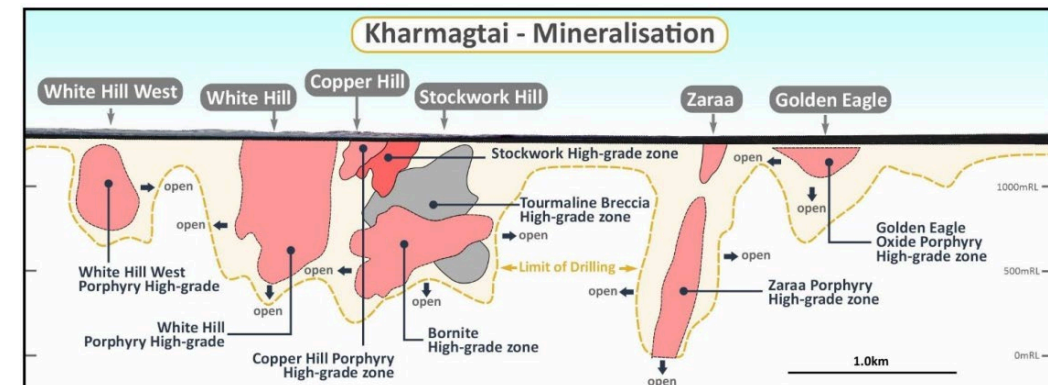
## Kharmagtai vs Hugo North

Factor	Hugo North (HN) <sup>1</sup>	Kharmagtai (KH)	KH vs HN Scorecard
Mineralisation	Stockwork with bornite rich core, zoning to chalcopyrite & pyrite	Stockwork Hill has bornite rich core, zoning to chalcopyrite & pyrite	✓
Cu & Au Grades	Starts below 900m and increases to the north.	Starts at surface and increases with depth	✓
Au : Cu Ratio <sup>2</sup>	<ul style="list-style-type: none"> <li>Up to 1:10 in south</li> <li>Up to 1:1 in north</li> <li>Best Au grades associated with bornite</li> </ul>	<ul style="list-style-type: none"> <li>Up to 2:1 at surface</li> <li>Up to 5:1 at depth</li> <li>Higher Au grades (avg 3:1) in bornite zone</li> </ul>	✓
Depth	Starts at 800 – 900m	Limited drilling below 800m	✗

## Hugo North Mineralisation<sup>3</sup> – Starting Depth ~800m



## Kharmagtai Mineralisation – Limits of Drilling ~800m



<sup>1</sup> [https://www.researchgate.net/publication/276086472\\_The\\_Giant\\_Oyu\\_Tolgoi\\_Porphyry\\_Copper-Gold\\_Deposit\\_Discovery\\_History\\_and\\_Exploration\\_Implications\\_South\\_Gobi](https://www.researchgate.net/publication/276086472_The_Giant_Oyu_Tolgoi_Porphyry_Copper-Gold_Deposit_Discovery_History_and_Exploration_Implications_South_Gobi)

<sup>2</sup> shown as Au (g/t) : Cu (%)

<sup>3</sup> [http://www.cmi-capital.com/Doc\\_Server/SEEGF\\_Docs/Kirwin/1-OT%20Discovery%20&%203SEG-Europe-10%20Sep%202006.pdf](http://www.cmi-capital.com/Doc_Server/SEEGF_Docs/Kirwin/1-OT%20Discovery%20&%203SEG-Europe-10%20Sep%202006.pdf)

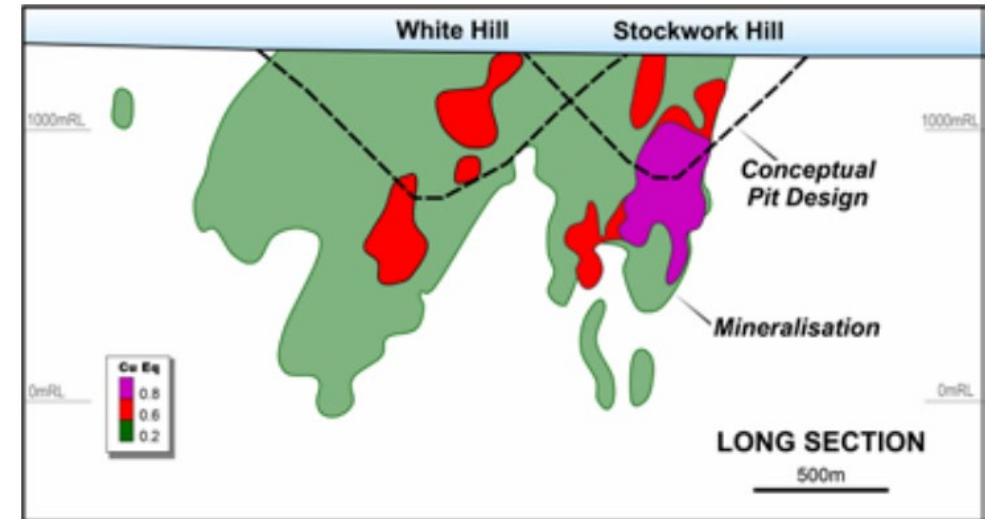
# Kharmagtai PEA - Multiple Upside Opportunities

PFS targets production growth, cost reduction, and resource expansion

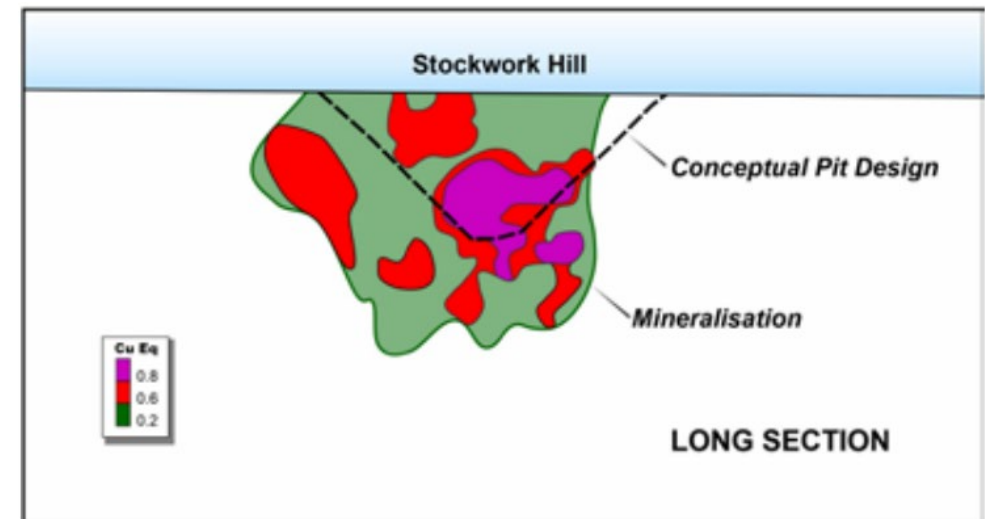
<b>Leach Oxidised Material</b>	Convert surface pre-strip waste into cash generating ore
<b>Bulk Ore Sorting &amp; Coarse Particle Flotation</b>	Process less material, reducing operating cost, electricity demand and water usage
<b>In Pit Crush &amp; Convey</b>	Steepen pit slopes to access deeper higher-grade ore and significantly reduce truck fleet
<b>Electrified Equipment</b>	Lower operating cost, reduced Scope 1 emissions
<b>Continued Exploration</b>	Expand Resource via higher-grade extensions at depth & along strike and identify & drill out new discoveries

ASX/TSX Announcement Scoping Study Kharmagtai Copper-Gold Project

ASX:**XAM** | TSX:**XAM**



Kharmagtai Resource within Open Pit in Long Section



Stockwork Hill Long Section showing current resource, proposed open pit and high-grade blocks below pit outline open along strike and at depth.



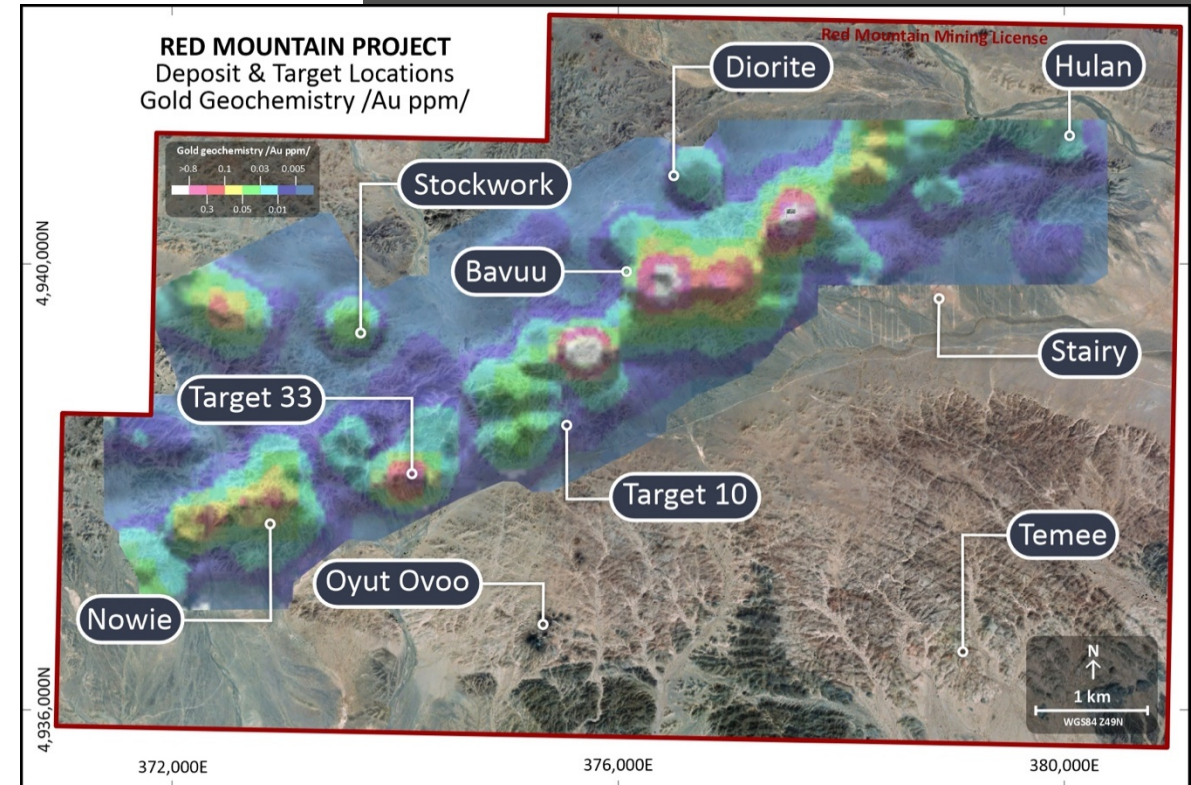
# Red Mountain Exploration - Shallow, Higher-Grade

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New broad gold zones expand & open potential for more

## Highly Prospective Second Project

- Shallow, high-grade epithermal gold & copper-gold-silver skarn mineralisation
  - 4 mineralised Cu-Au systems
  - 2 epithermal Au-Ag systems
- New target generation commenced August 2022
- Trenching underway to define targets
  - Initial trenching at Target 33<sup>1</sup> delivered broad 350m x 80m zone of shallow gold
  - Drill testing of high priority targets to commence soon
- Targeting smaller scale, high-grade deposits enabling lower capex development



# 2023 Plan - Delivering Value to Shareholders

## Making Decisions that Drive Performance and Create Real Value

### Kharmagtai Pre-Feasibility Study (US\$20M JV cash<sup>1</sup>)

- Deliver Maiden Ore Reserve in 2024 including ~30,000m infill drilling
- Realise project value upside via technical studies
- Decision to Mine in 2024

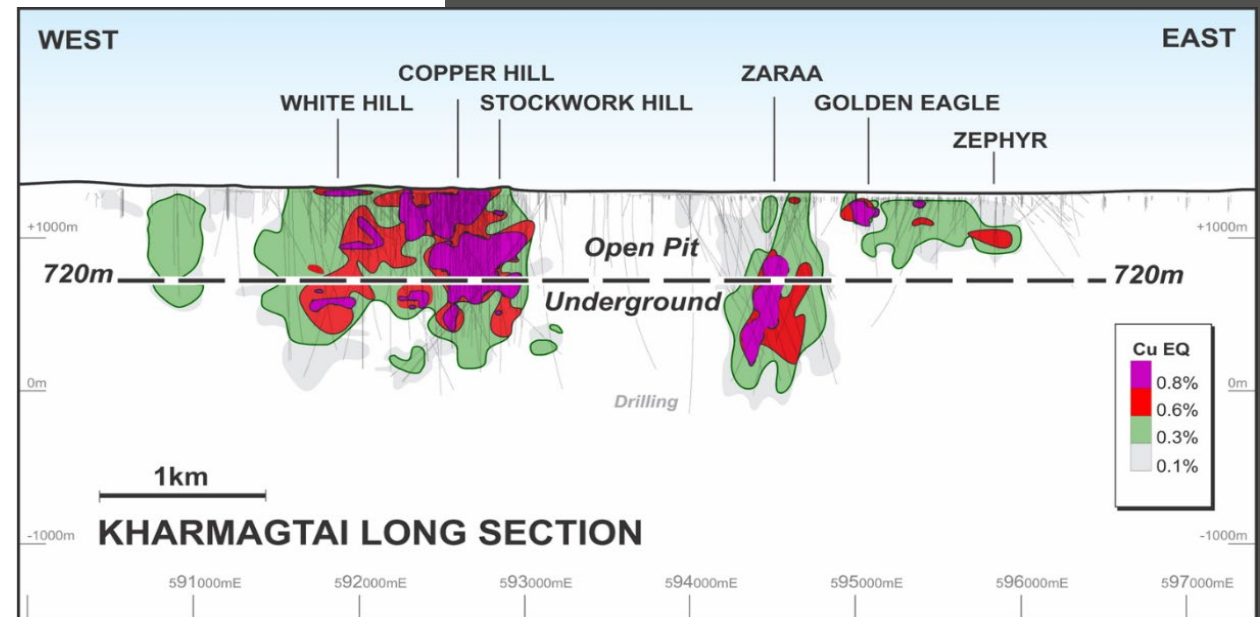
### Kharmagtai Discovery Exploration (US\$15M JV cash<sup>1</sup>)

- New high-grade discovery
- Extension to known higher-grade zones at depth

### Grow Project Pipeline (A\$7M XAM cash)

- Red Mountain discovery exploration
- New South Gobi minerals projects; identify & acquire

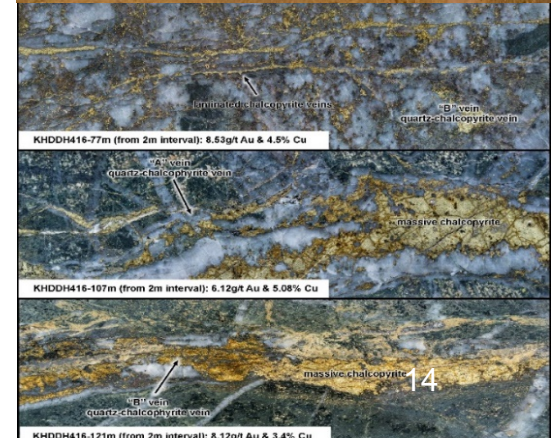
### Kharmagtai 2021 Resource



# Our Value Proposition

## High impact exploration & development in a proven & growing mining jurisdiction

<b>Long Life, Low Cost Assets</b>	Unique portfolio of high quality copper-gold assets, with flagship asset positioned in the bottom half of the cash curve.
<b>Emerging Mining Jurisdiction</b>	Underexplored mining economy committed to enhancing its regulatory environment to accelerate mining growth.
<b>High Growth Potential</b>	Strong exploration & development pipeline, ideally positioned to deliver into a copper market with a long term structural deficit
<b>Metals for Low Carbon Future</b>	Positioned to produce copper in late 2027, required for global decarbonisation and electrification.
<b>Delivering Value to Shareholders</b>	High quality team with track record of delivering growth and deals that create real shareholder value







Thank  
you

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Keep up to date with us



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An aerial photograph of a mining site in a dry, brown landscape. The site is enclosed by a green boundary line. Inside the boundary, there are several large white cylindrical storage tanks arranged in a grid. There are also various pieces of mining equipment, including excavators and trucks, and some smaller buildings. The background shows a vast, flat, brown landscape.

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# Appendix

# Competent Person's Statement

The Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (the 'JORC Code 2012') sets out minimum standards, recommendations and guidelines for Public Reporting in Australasia of Exploration Results, Mineral Resources and Ore Reserves. The Information contained in this announcement has been presented in accordance with the JORC Code 2012.

**Mineral Resources:** The information in this announcement that relates to Mineral Resources is based on information compiled by Mr. Robert Spiers who is responsible for the Mineral Resource estimate. Mr Spiers is a full-time Principal Geologist employed by Spiers Geological Consultants (SGC) and is a Member of the Australian Institute of Geoscientists with sufficient experience relevant to the style of mineralisation and type of deposit under consideration and to the activity he is undertaking to qualify as the "Qualified Person" as defined in the CIM Guidelines and National Instrument 43-101. Mr Spiers consents to the inclusion in the report of the matters based on this information in the form and context in which it appears.

**Exploration Results:** The information in this announcement that relates to Exploration Results is based on information compiled by Dr Andrew Stewart who is responsible for the exploration data, comments on exploration target sizes, QA/QC and geological interpretation and information. Dr Stewart, who is an employee of Xanadu and is a Member of the Australasian Institute of Geoscientists, has sufficient experience relevant to the style of mineralisation and type of deposit under consideration and to the activity he is undertaking to qualify as the "Competent Person" as defined in the 2012 Edition of the "Australasian Code for Reporting Exploration Results, Mineral Resources and Ore Reserves" and the National Instrument 43-101. Dr Stewart consents to the inclusion in the report of the matters based on this information in the form and context in which it appears

# Investment Highlights

## Funded Copper Gold Development + Future Discoveries

### Quality Projects

Major Copper Gold Resource	Fast Tracking Development	Funded & Well Positioned	Mongolia Seeks to Boost Mining
<p>Kharmagtai maiden Ore Reserve in 2023.</p> <p>Kharmagtai MRE: 1.1Bt containing 3Mt Cu &amp; 8Moz Au, incl. 100Mt @ &gt;0.8% CuEq.<sup>1</sup></p>	<p>PFS fully-funded; targeting FID by mid 2024.</p> <p>First production 2027-28 from processing sulphides; additional cashflow potential from partially oxidised material processing.</p>	<p>Zijin strategic investment<sup>2</sup>: A\$11M in XAM &amp; US\$35M in Kharmagtai.</p> <p>Strengthens funding, technical capability. De-risks concentrate marketing &amp; logistics.</p>	<p>Stable, educated democracy.</p> <p>Mining-driven economy; low ESG risk &amp; established infra.</p> <p>Pro business govt seeking mining foreign investment growth; mining law revisions expected in 2023.</p>

### Measured Approach

Excellent Leadership	Ambitious Exploration	Growth Potential	ESG Focus
<p>Management &amp; Board track record of discovery, development and M&amp;A.</p> <p>Supported by World-class Advisory Team.</p>	<p>Funded for future high impact discoveries at both Kharmagtai (untested depth &amp; lateral potential) &amp; Red Mountain (up to 16% Cu).</p>	<p>Kharmagtai open in all directions, with strong depth potential.</p> <p>Highly prospective Red Mountain</p> <p>New project generation.</p>	<p>Operating to highest ESG standards, with strong community engagement.</p> <p>Sustainability Report available on website<sup>3</sup></p>

<sup>1</sup> ASX/TSX Announcement 8 December 2021 – Kharmagtai Resource Grows to 1.1Bt containing 3Mt Cu and 8Moz Au

<sup>2</sup> ASX/TSX Announcement 19 April 2022 – Strategic Partnership with Zijin Mining

<sup>3</sup> ASX/TSX Announcement 9 June 2022– Sustainability Report 2021



# Well Timed to Impact ‘Approaching’ Copper Supply Cliff

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## Kharmagtai aiming to deliver copper in next 5 years

- Copper is over-utilised relative to consumption, driven by the growing decarbonisation of the economy
- Global reserve grades falling since 1990's; Halved to ~0.5% Cu<sup>1</sup>
- New copper discoveries insufficient to replace production; discoveries in 2020s expected to be poorest since 1990<sup>2</sup>
- Increasing ESG requirements impacting project lead time & risks; currently >10yrs from Cu discovery to production<sup>3</sup>
- Copper supply deficits inevitable:
  - Wood Mac est. 6.5Mt deficit by 2027 for AET-2 Demand<sup>4</sup>
  - BMO est. 9Mt deficit by 2030; with 4Mt new supply growth (capex >\$75bn) as max. practical limit irrespective of Cu price<sup>5</sup>
  - Equivalent to 8x new Escondida mines over next 8 yrs<sup>6</sup>

XAM's Kharmagtai positioned to add 1.5Mt Cu production between 2028 to 2057

<sup>1</sup> <http://info.gorozen.com/2021-q1-market-commentary-problems-with-copper>

<sup>2</sup> <https://www.spglobal.com/marketintelligence/en/news-insights/research/copper-discoveries-declining-trend-continues/>

<sup>3</sup> <https://www.angloamerican.com/~media/Files/A/Anglo-American-Group/PLC/media/presentations/2022pres/bank-of-america-duncan-wanblad-presentation-2022.pdf>

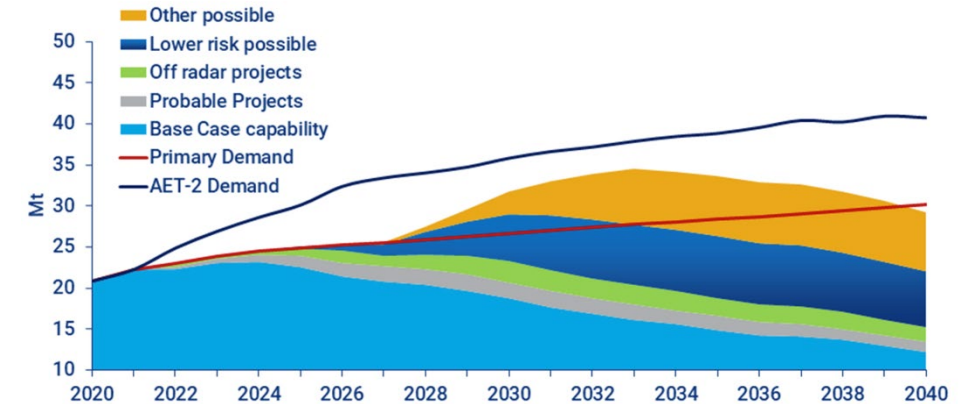
<sup>4</sup> <https://www.woodmac.com/news/opinion/will-a-lack-of-supply-growth-come-back-to-bite-the-copper-industry/>

<sup>5</sup> <https://www.ft.com/content/975b92c0-8f70-48c2-8e50-f615db68228d>

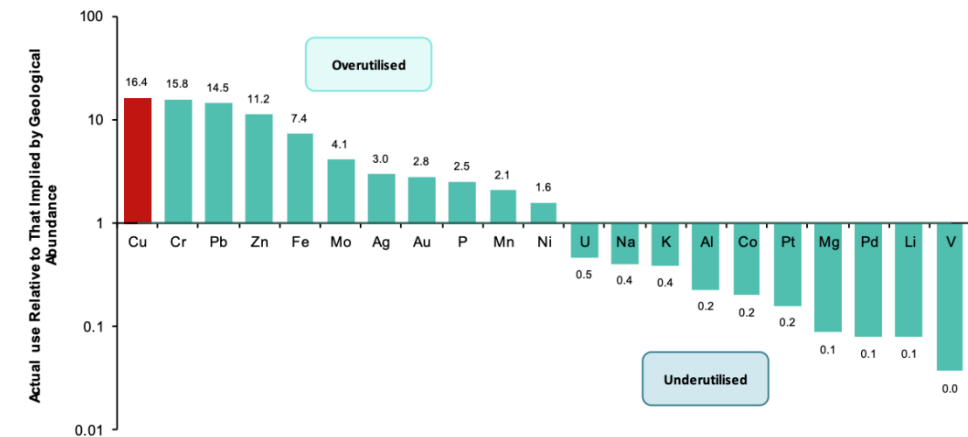
<sup>6</sup> <https://aheadoftheherd.com/8-escondidas-needed-over-the-next-eight-years/>

<sup>7</sup> <https://cdn-ceo-ca.s3.amazonaws.com/1g9df18-Global-Metals-Mining-King-Copper-once-and-future-14-September-2020-Bernstein.pdf>

Copper Supply vs Primary & Accelerated Energy Transition (AET-2) Demand<sup>4</sup>



Copper amongst most over-utilised relative to geological endowment<sup>7</sup>



# Renewable Power Needs More Copper

## Renewables & electrification drive decarbonisation

- Wind & Solar between 3x and 7x more copper intensive than conventional electricity<sup>1</sup>; Wind requires up to 8,000 kg copper per MW<sup>1</sup>
- Wind & Solar carbon footprints over the asset's lifespan are 1 to 4% of coal-fired power & 3 to 9% of natural gas, respectively<sup>2</sup>
- US requires 630GW wind & 450GW solar energy investment to achieve 100% clean electricity by 2035<sup>3</sup>.
- US\$100bn electrical grid upgrades required to support US clean electricity targets, including construction of higher voltage DC transmission lines – all copper intensive<sup>4</sup>.

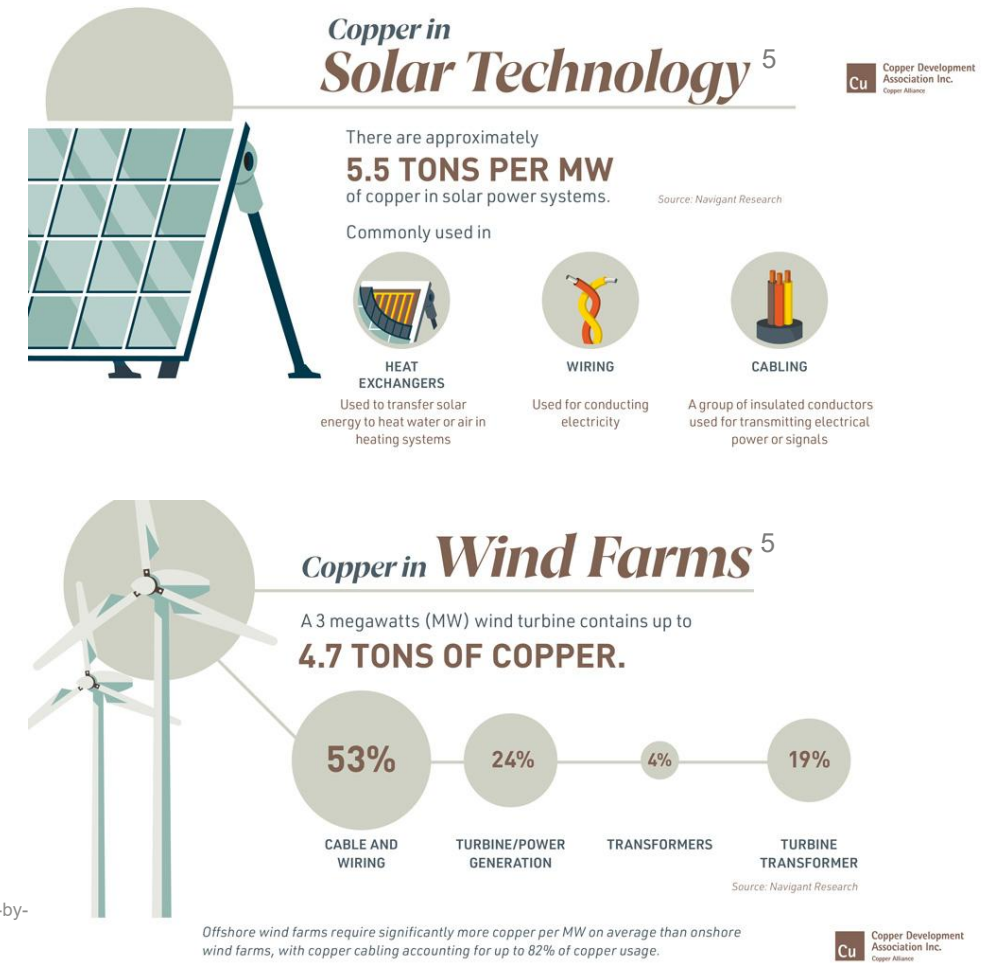
<sup>1</sup> <https://www.iea.org/reports/the-role-of-critical-minerals-in-clean-energy-transitions/executive-summary>

<sup>2</sup> <https://www.cnbc.com/2022/04/13/green-energy-the-race-to-roll-out-super-sized-wind-turbines-is-on.html>

<sup>3</sup> <https://www.spglobal.com/marketintelligence/en/news-insights/research/national-clean-energy-standard-could-require-1000-gw-of-new-wind-solar-by-2022>

<sup>4</sup> <https://aheadoftheherd.com/the-us-has-a-metals-problem/>; <https://www.energy.gov/sites/default/files/2022-02/Electric%20Grid%20Supply%20Chain%20Report%20-%20Final.pdf>

<sup>5</sup> <https://www.copper.org/environment/sustainable-energy/renewables/>



# Copper Anchors the EV Ecosystem

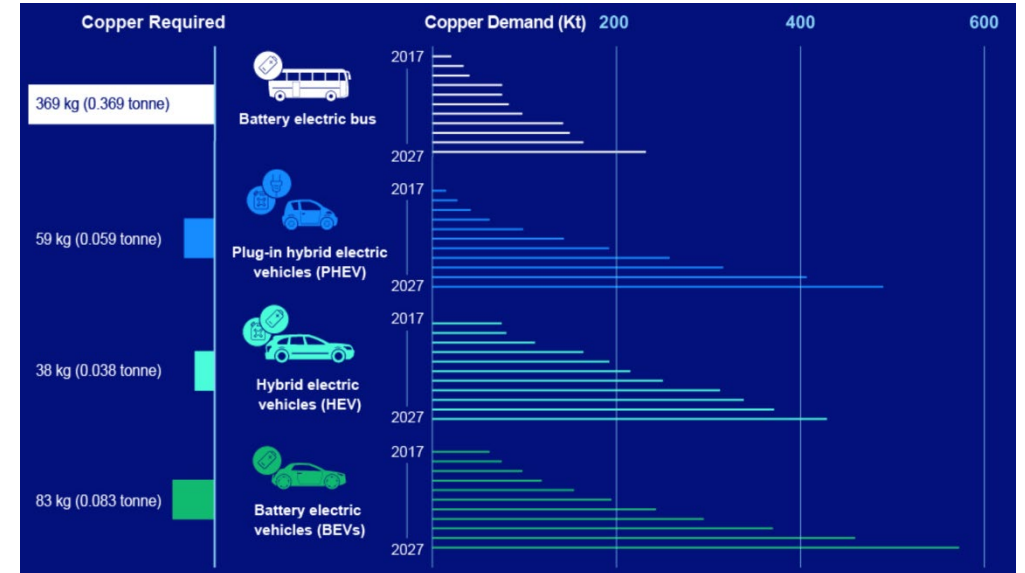
## EV production could be limited by copper availability

- Copper used in more than just the battery, also the motor, inverter/converter, cabling & internal charging requirements
- EV infrastructure associated with ultra fast charging of EVs, as well as grid investment all heavily reliant on copper
- Unlike other EV metals, copper metal use per EV rises, even after expected battery chemistry transition reduces metal requirements out to 2030 – 2050<sup>2</sup>
- If EV growth pursued aggressively, copper demand for EVs could exceed renewable power
- Tesla, GM, BMW & Toyota have direct mining/refining relationships for Li, Co & Ni, but not for Cu (yet)
- As supply pressure builds, automakers expected to pursue similar direct sourcing strategy for Cu

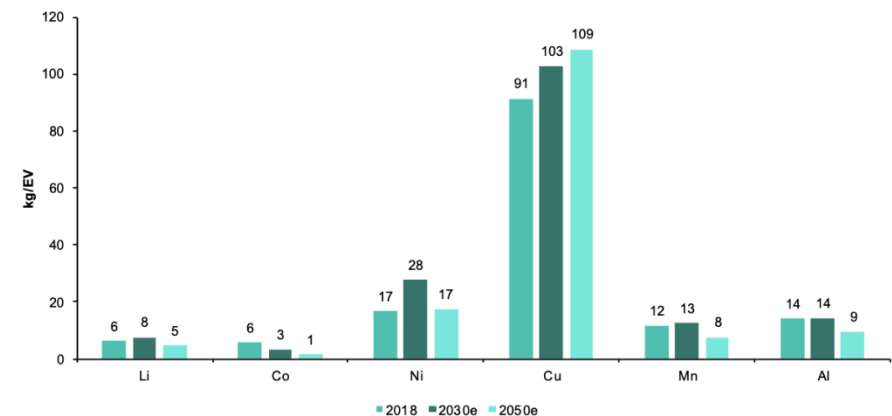
<sup>1</sup> <https://www.visualcapitalist.com/visualizing-coppers-role-in-a-low-carbon-economy/>

<sup>2</sup> <https://cdn-ceo-ca.s3.amazonaws.com/1g9df18-Global-Metals-Mining-King-Copper-once-and-future-14-September-2020-Bernstein.pdf>

## Copper Drives Bigger, Longer Range EVs (2017 to 2027e) <sup>1</sup>



## Copper Demand Per EV Continues Growing (2018 to 2030e to 2050e) <sup>2</sup>





# Mongolia Policy Reforms to Incentivise Mining

Seeking to boost investor confidence; potential to be a miner's destination of choice

## Law reform coming soon <sup>1, 2, 3</sup>

- Newly appointed pro business ministers announced (during quick Cabinet reshuffle) for mining, economy & development, and secretariat chief
- Expected to shape a more investor friendly mining sector; revisions to Mining Law expected in 2023. Law of Mongolia on Minerals (2006) has been stable for some time now, with no amendments passed since 2019.
- Revisions to Investment Law also on the agenda, including establishment of Investor Protection Council
- Aimed at boosting investment, the economy & investor confidence

## Aligned with 'New Revival Policy' framework <sup>4, 5</sup>

- Framework designed to create favourable business environment, improve foreign & domestic investment climate, as well as **fiscal reform**
- Policy implementation aims to:
  1. increase mineral export volumes
  2. improve capacity of border checkpoints, and
  3. accelerate infrastructure & energy construction projects.



*XAM board & management catching up with the team, preparing for PFS kick off later this year*

<sup>1</sup> <https://thediomat.com/2022/09/mongolia-unveils-new-pro-business-cabinet/>

<sup>2</sup> <https://montsame.mn/en/read/302312>

<sup>3</sup> <https://uk.practicallaw.thomsonreuters.com/w-017-7372?transitionType=Default&contextData=%28sc.Default%29>

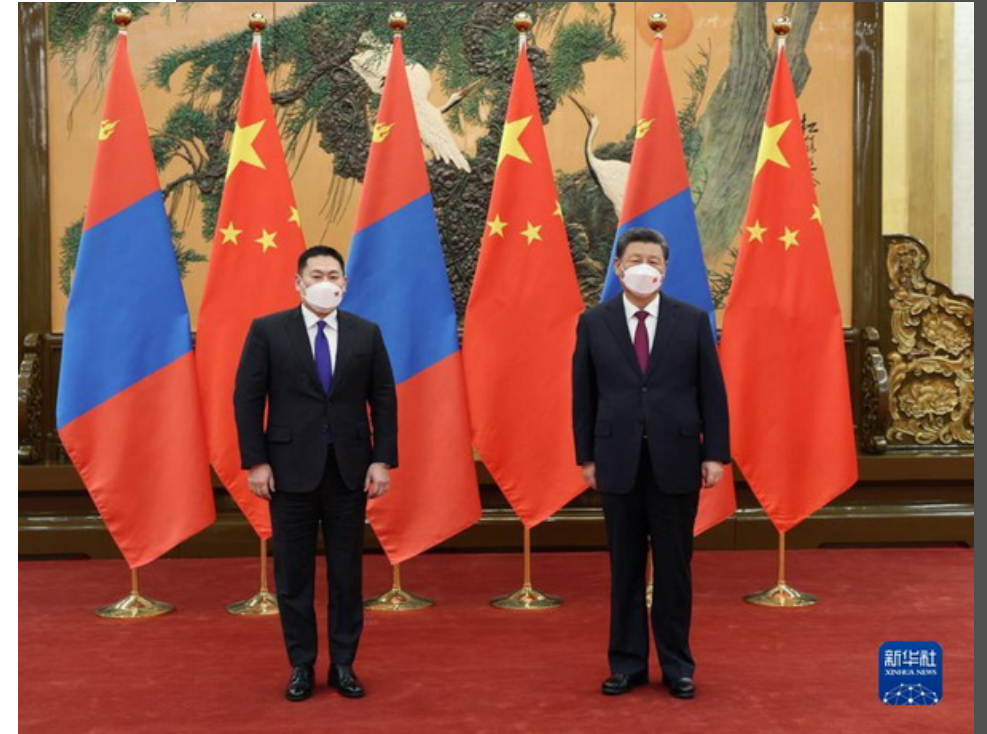
<sup>4</sup> <https://montsame.mn/en/read/285624>

<sup>5</sup> <https://montsame.mn/en/read/303729>

# Mongolia-China Growing Strategic Partnership

## Zijin transaction echoes strengthening relationship

- Recent heads of state engagement confirms alignment of Mongolia's New Revival Policy with China's Belt and Road Initiative and Five-Year Plan <sup>1</sup>
- Mongolia confirmed this bilateral relationship as the model for other global relationships
- Zijin strategic partnership with Xanadu demonstrates this growing inter-country engagement
- Xanadu transaction aligns with Zijin 2022 Strategy<sup>2</sup>, targeting:
  - ✓ Large projects with best-in-class resources delivering sustainable growth
  - ✓ Responsible, green, high-tech mining
  - ✓ Good upside potential & strong synergies
  - ✓ Merger and acquisition to accelerate growth



<sup>1</sup> Ministry of Foreign Affairs of the People's Republic of China 6 February 2022 – Xi Jinping Meets with Mongolia Primer Minister Luvsannamsrai Oyun-Erdene; [www.fmprc.gov.cn/mfa\\_eng/zxxx\\_662805/202202/t20220207\\_10639712.html](http://www.fmprc.gov.cn/mfa_eng/zxxx_662805/202202/t20220207_10639712.html)

<sup>2</sup> Source: Zijinmining.com

# Favourable ESG Environment = Short Time to Production

## Mongolia is a proven & growing mining-driven economy

- Pro-mining jurisdiction – in 2021, mining accounted for 24% of Mongolia's GDP & 90% of export revenues<sup>1</sup>
- Significant mining region – tops Investment Monitor's 2021 Mining Vulnerability Index<sup>2</sup>, followed by Zambia & Australia
- Stable democratic system – 30-yr history of democratic elections
- Social License to Operate – enabling short lead times to mine production
- Excellent established infrastructure – leveraging rail, power & water for low capex intensity development
- Ideal location – flat ground, sparse population & proximal to customers minimises technical, ESG & concentrate marketing risks

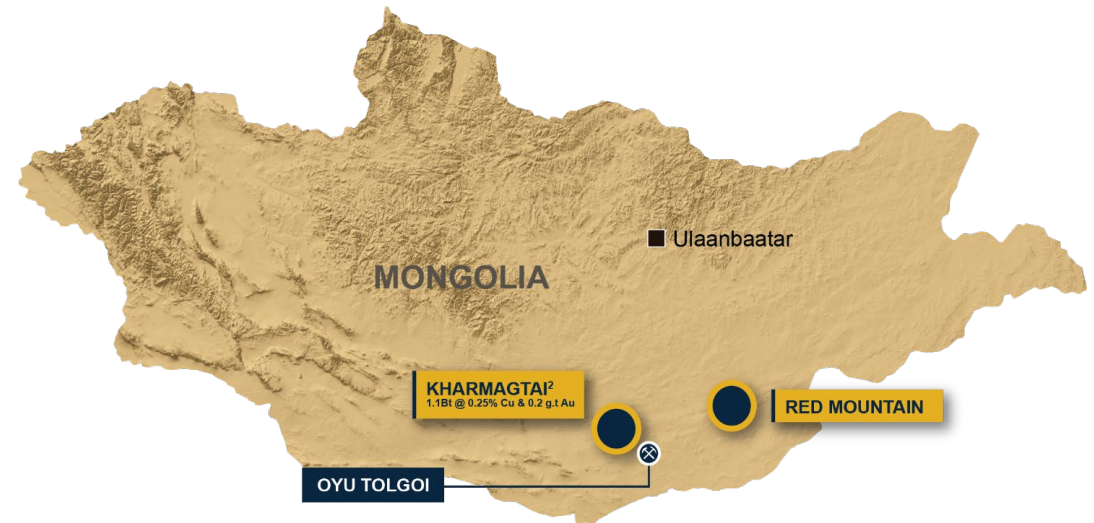
## ...On the doorstep of world's largest consumer

77% of Mongolia's external trade was with China between 2011 – 2021<sup>3</sup>

Copper (27%) & Coal (27%) accounted for majority of Mongolia's total exports to China over the same period<sup>3</sup>

China accounted for ~52% refined copper consumption globally in 2021<sup>4,5</sup>

China's global consumption of refined copper up 4% yoy to 1.87Mt in 1H 2022<sup>4,5</sup>



<sup>1</sup> <https://montsame.mn/en/read/289037>

<sup>2</sup> <https://investmentmonitor.ai/business-activities/extractive-industries/mongolia-and-australia-among-countries-that-will-suffer-the-most-in-a-mining-downturn>

<sup>3</sup> The Current situation for Foreign Trade between Mongolia and China, Future Trend [https://www.mongolbank.mn/documents/press\\_conference/20220621\\_06.pdf](https://www.mongolbank.mn/documents/press_conference/20220621_06.pdf)

<sup>4</sup> Global refined copper consumption distribution 2021, by region <https://www.statista.com/statistics/693466/distribution-of-global-refined-copper-consumption-by-region/>

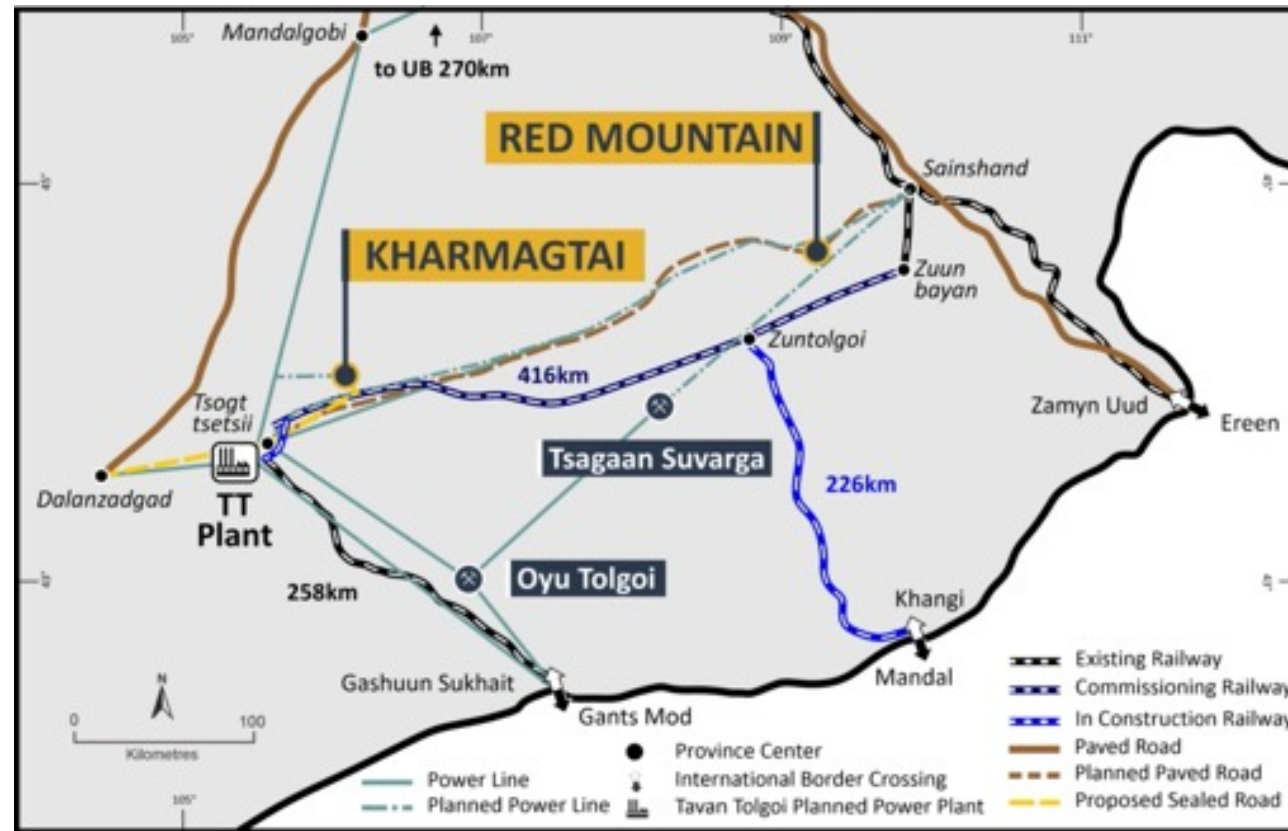
<sup>5</sup> China steps up copper imports despite renewed slowdown <https://www.reuters.com/markets/commodities/china-steps-up-copper-imports-despite-renewed-slowdown-andy-home-2022-08-02/>



# New Mongolia Infrastructure Enhances Customer Links

## Government investing for more globally competitive South Gobi mining products

### South Gobi Regional Infrastructure



### Rail & Road

- New rail line commissioning between Zuunbayan & Tsogttsetsii, linking to trans-Mongolia railway. New sealed road follows rail line.
- New rail lines south to China from Tavan Tolgoi (operational) reduces transport cost by 75%<sup>1</sup> & Zuntolgoi (in construction)
- 22km line connecting Gashuun Sukhait & Zuunbayan rail lines in construction, linking mining region to China & wider Mongolian network

### Power

- New Tavan Tolgoi power plant construction awaiting tender process
- Additional power lines link region to Tavan Tolgoi



<sup>1</sup> <https://www.globaltimes.cn/page/202209/1275099.shtml>

# Who is Zijin Mining Group?

## A global copper & gold mining major

- Zijin brings **capability** and **balance sheet** to build a large-scale copper-gold mine like Kharmagtai
- **US\$51 billion** market capitalization, listed on Hong Kong & Shanghai exchanges
- **Global Top 10 copper producer**, 2021 mining production 584kt copper, 1.68 Moz gold and 396kt zinc
- Vertically integrated: **mining, smelting & refining** assets
- Operating assets across **14 countries & 5 continents**
- **Experienced Joint Venture partner**, examples include Kamoa-Kakula copper-mine (Ivanhoe) & Porgera gold-silver mine (Barrick)

Source: Zijinmining.com

ASX:**XAM** | TSX:**XAM**



# Zijin strategy is to acquire, control & scale-up

## Aligns to Kharmagtai 2-stage expansion



<sup>1</sup> 100% basis  
Source: zijinmining.com



# Positioning as the Cadia Hill of Mongolia

Kharmagtai stacks up well on strip ratio, scale & copper grade

## First 5yrs of production<sup>2</sup>:

		Kharmagtai (KH) Scoping Study	Cadia Hill (CH) Actuals
Material Mined	Mt	210	298
Ore Mined <sup>1</sup>	Mt	110	79
Ore Processed	Mt	70	79
Strip Ratio		0.9	2.8
Ore Processing rate	Mtpa	15	16
Avg Milled Grade:			
Copper	%	0.29	0.19
Gold	g/t	0.30	0.77
Avg Metal Recovery:			
Copper	%	90	81
Gold	%	78	74
Metal Produced:			
Avg Copper	ktpa	37	24
Avg Gold	kozpa	110	288
Copper	Mt	0.20	0.12
Gold	Moz	0.50	1.44

<sup>1</sup> Cadia Hill ore mined not reported, assumed ore mined = ore processed

<sup>2</sup> Sources: Kharmagtai Copper-Gold project Scoping Study; Cadia Valley Operations Technical Report, 2 Mar 2012



*Cadia Hill*

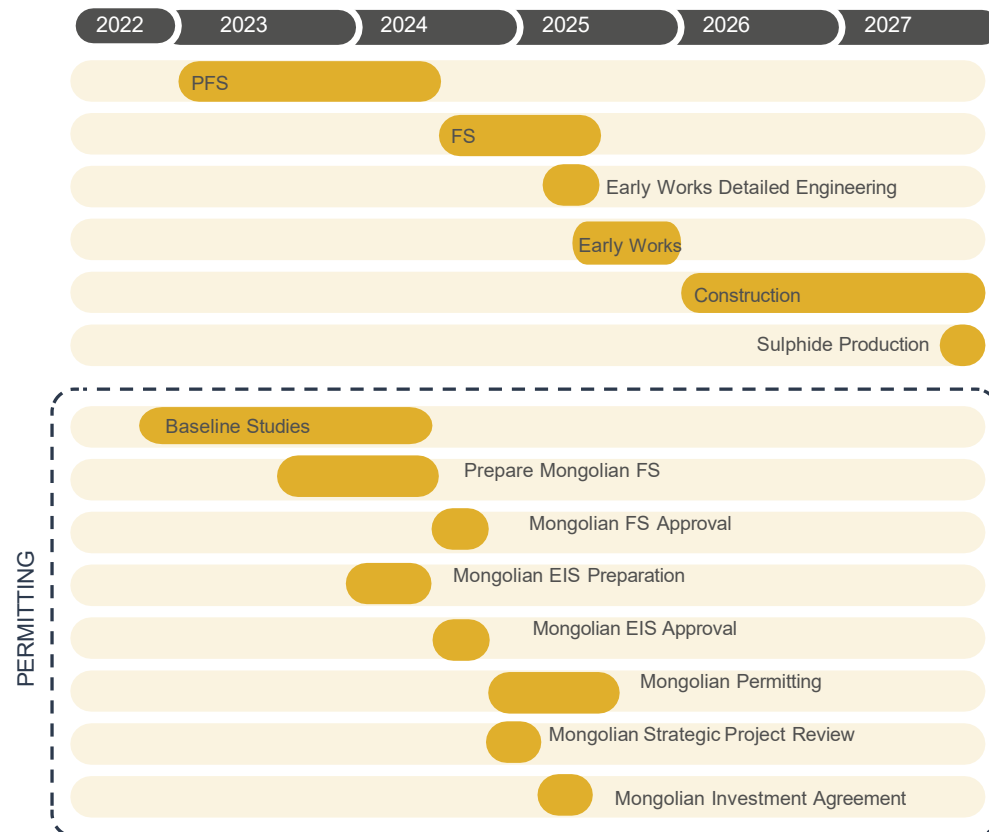


*Kharmagtai*

# Strong Economics and Achievable Pathway to Production

Gated to Pre-Feasibility (PFS)  
following robust Scoping Study<sup>1</sup>

## Production Timeline



## Development Strategy:

- Establish 15Mtpa starter mine
- Explore in parallel to define full extent of the system
- Expand to 30Mtpa after payback, funded by starter mine

First production  
4Q'2027. Target  
uplift opportunities  
in opex, capex and  
production.

Clear permitting  
path mapped by  
experienced  
Mongolian team.

## Project Economics

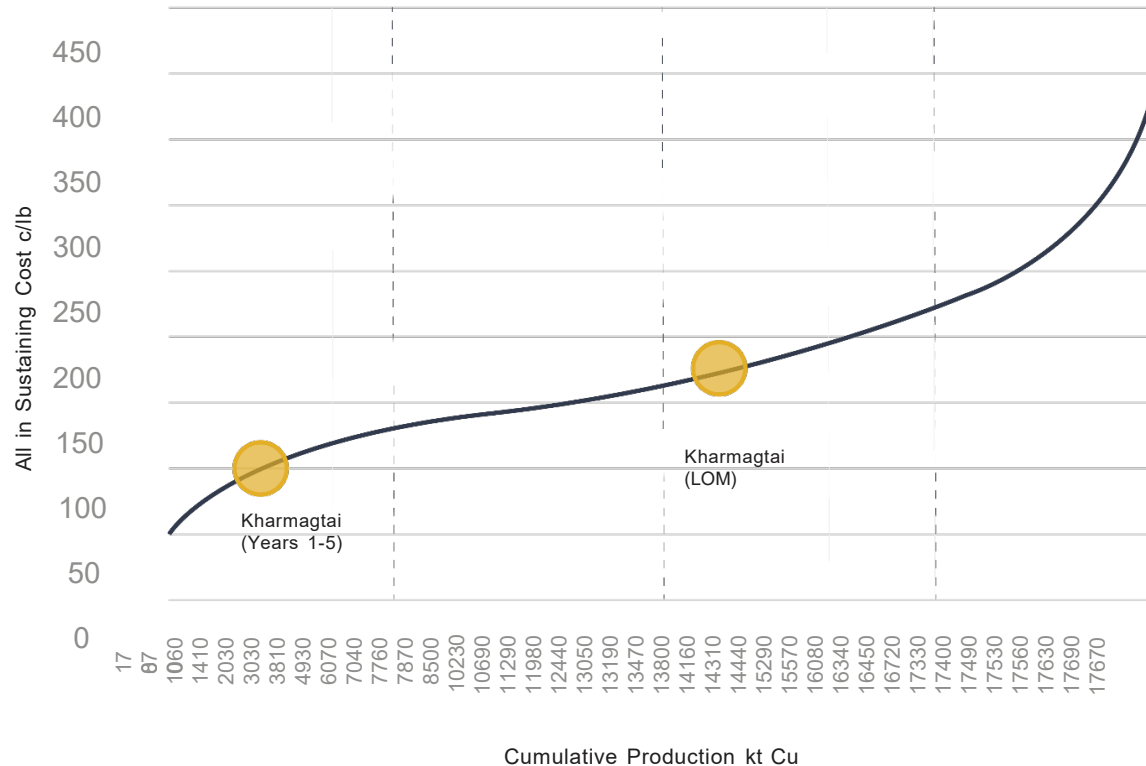
Summary Outcomes	Low	Base	High
Net Revenue (US\$M)	15,200	16,100	17,100
EBITDA (US\$M)	5,880	6,770	7,660
Net Cash Flow (US\$M)	2,590	3,420	4,240
NPV (8% discount)	405	630	850
IRR	16%	20%	25%
Capital Payback	7 years	4 years	4 years

Sensitivities	Low	Base	High
Cu price (US\$/lb) (+/-10%)	3.60	4.00	4.40
Au price (US\$/oz) (+/-5%)	1,615	1,700	1,785
Life of Mine Capex (US\$M) (+/-10%)	2,046	1,860	1,674

# Starter Mine Expanded Post Capex Payback

Low AISC driven by low strip & gold by-product credits

Competitive Cost Curve Positioning



ASX/TSX Announcement 6 April 2022 – Scoping Study Kharmagtai Copper-Gold Project

ASX:**XAM** | TSX:**XAM**

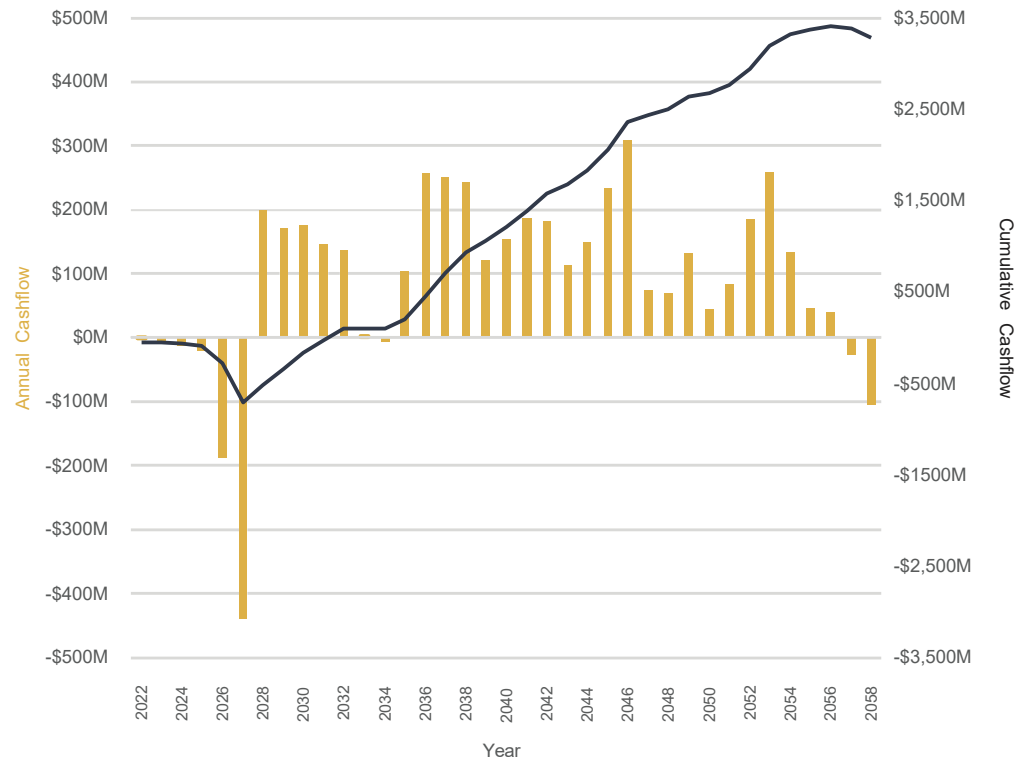
Area	Measure	Unit	Stage 1 Initial	Stage 2 Expansion	LOM
Production	Period	Years	5	25	30
	Ore process rate.	Mtpa	15	30	15-30
	Feed from Indicated Resource	%	100%	50%	55%
	Ore processed	Mt	70	690	760
	Average copper grade	%	0.29	0.21	0.21
	Average gold grade	g/t	0.30	0.16	0.18
	Copper produced	Mt	0.2	1.3	1.5
	Gold produced	Moz	0.5	2.8	3.3
Capital	Project Capital	US\$M	690	620	1,310
	Sustaining Capital	US\$M	40	530	570
Operating Cost	All In Sustaining Costs	US\$/lb	1.02	1.99	1.87
Economic Assumptions	Copper Price	US\$/lb	4.00	4.00	4.00
	Gold Price	US\$/oz	1,700	1,700	1,700
Financials (after tax)	Net Present Value (NPV) @ 8%	US\$M			630
	Internal Rate of Return (IRR)	% (real)			20
	Capital Payback	Years	4	1	4
	Free Cash Flow (after tax)	US\$M (real)	155	3,260	3,420



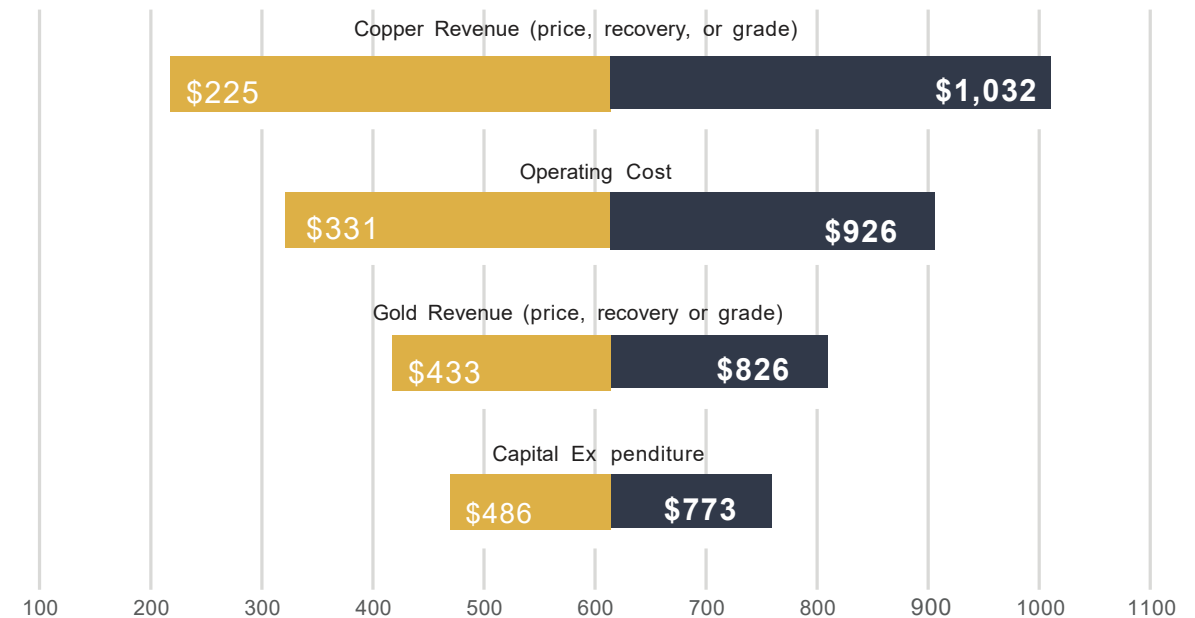
# Robust Cash Flows

## Positive cash flow across wide range of scenarios

### Annual Cash Flow (US\$M)



- Kharmagtai starter mine cash flows funds expansion
- Strong earnings across +/- 20% sensitivity analysis range



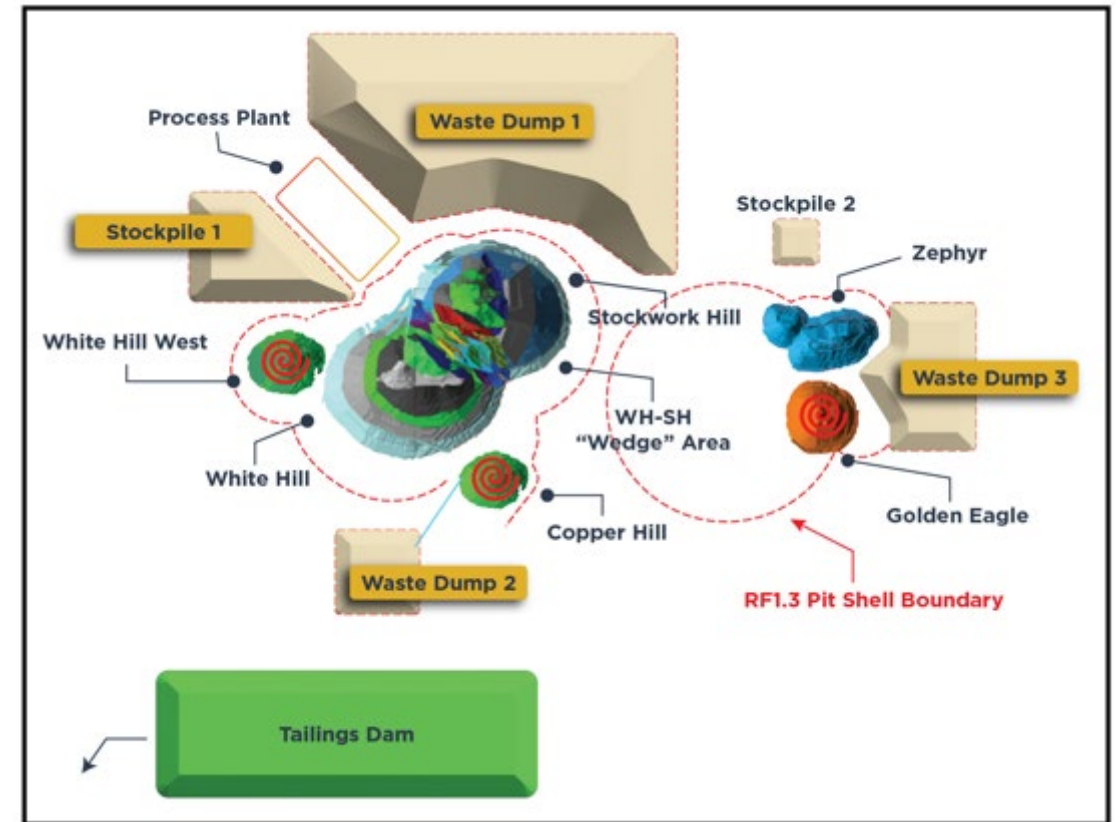
ASX/TSX Announcement 6 April 2022 – Scoping Study Kharmagtai Copper-Gold Project

# Simple Site Layout

## Plans ahead for future growth

- Low complexity, minimising haul distance
- Tailings dam offsite to south using land features
- Stand off maintained for potential future pit expansion leveraging in pit crush and convey
- To be finalised in PFS

## Project Layout

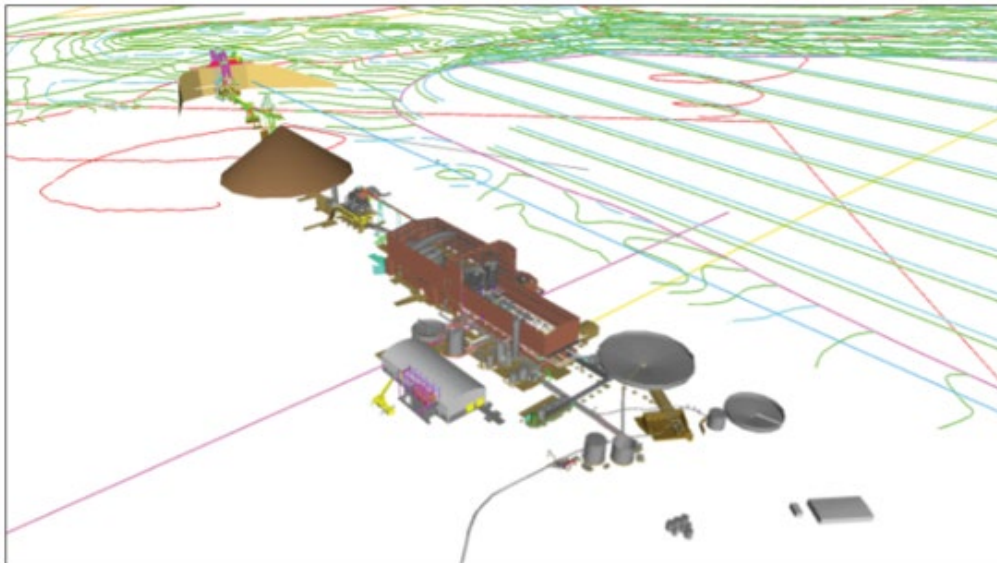


ASX/TSX Announcement 6 April 2022 – Scoping Study Kharmagtai Copper-Gold Project

# Sulphide Flotation Process Plant

## Conventional, low risk process flow & plant design

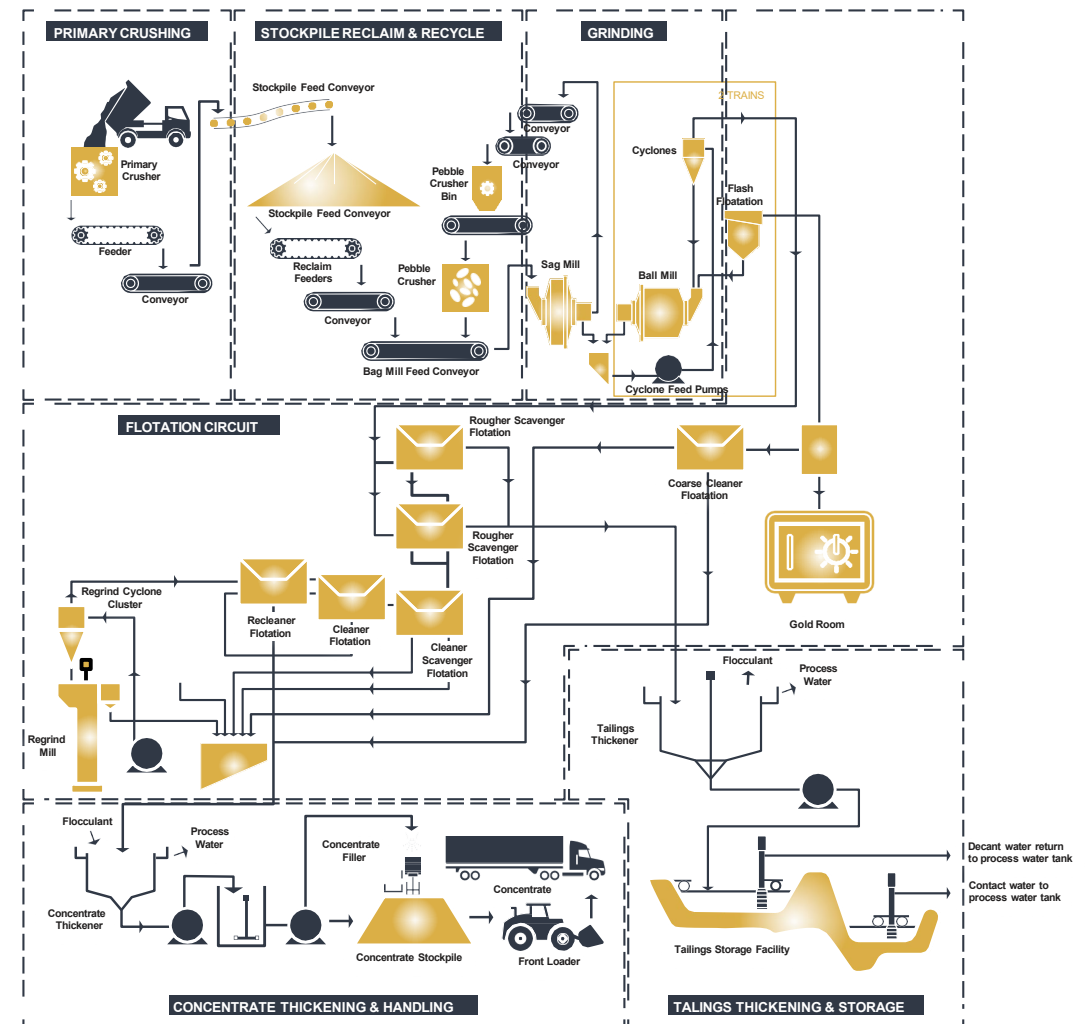
Processing Plant Layout



ASX/TSX Announcement 6 April 2022 – Scoping Study Kharmagtai Copper-Gold Project

ASX:XAM | TSX:XAM

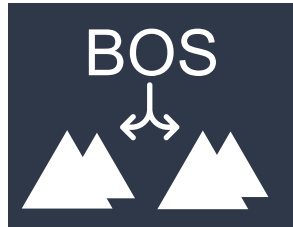
Process Flow Diagram





# Sustainable Minerals Processing Becoming the Norm

## Bulk Ore Sorting (BOS) & Coarse Particle Recovery (CPR) Reduce Energy & Water Consumption



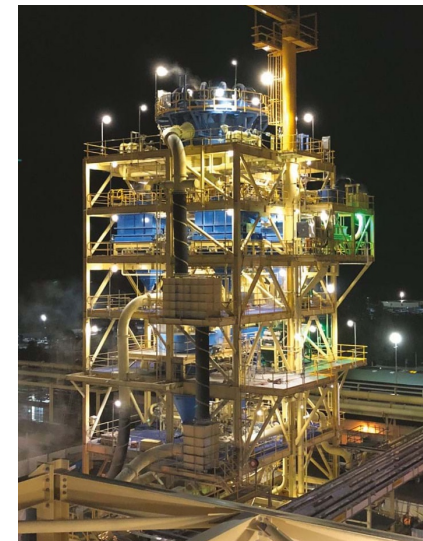
AngloAmerican Bulk Ore Sorter – BOS

Technologies such as BOS and CPR rapidly becoming business as usual for large scale base & precious metal miners to sustainably achieve **low cost production** & generate **fewer wet tailings**.

### Examples<sup>1</sup>:

- First Quantum Kansanshi Cu – world's largest 2800tph BOS operating since May 2022
- Newcrest Cadia Cu Au – first full scale CPR operating since August 2018
- AngloAmerican multiple mines – BOS & CPR helping to significantly reduce energy & water consumption, in line with their 2030 Sustainable Mining Plan targets
- Capstone Pinto Valley Cu Mo – CPR pilot plant enabled up to 8% increase in Cu recovery, lower grinding costs, less water & energy consumption and better tailings stability

BOS & CPR minerals processing technologies will be evaluated for Kharmagtai Cu Au PFS



Cadia Coarse Particle (Flotation) Recovery – CPR

<sup>1</sup> <https://nextore.com.au/worlds-largest-sorting-plant-now-in-operation/>, <https://www.thechemicalengineer.com/features/reducing-the-daily-grind/>, <https://www.angloamerican.com/futuresmart/stories/our-industry/mining-explained/bulk-ore-sorting-and-coarse-particle-recovery-leading-the-way-in-mineral-processing-innovation>, <https://www.mining.com/capstones-pinto-valley-mine-fully-permitted-to-2039/>, <https://skills.net/capstone-mining-recent-project-developments/>

# Resource Benchmarked on Copper Equivalence

- Mineral Resource used in benchmarking include Inferred, Indicated, and Measured classifications. Resource tonnes and grades are as reported by each company.<sup>1,2</sup>
- Copper equivalent grades were calculated by Xanadu Mines using the formula:
  - $CuEq = Cu + Au * 0.60049 * 0.86667$
- Where:
  - Cu = copper grade (%)
  - Au = gold grade (grams per tonne (g/t))
  - 0.60049 = conversion factor (Au to Cu); and
  - 0.86667 = relative recovery of Au to Cu (86.67%)
- These equivalent formulas were based on the following parameters (prices in USD):
  - Cu price = 3.4 \$/lb
  - Au price = 1,400 \$/oz
  - Cu recovery = 90%
  - Au recovery = 78%; and
  - Relative recovery of Au to Cu = 78%/90% = 86.67%
- Metals prices, Au-Cu conversion factor, and Au-Cu relative recovery factors are as defined in the 2021 Xanadu Mineral Resource Upgrade<sup>3</sup>

Global Project	Resource Date	Resource Mt				Au g/t			Cu %			Au Moz			Cu Mt			CuEq	
		Meas	Ind	Inf	Total	Meas	Ind	Inf	Meas	Ind	Inf	Meas	Ind	Inf	Meas	Ind	Inf	%	Mt
Altar	22/03/21	622	576	189	1,387	0.10	0.08	0.06	0.44%	0.42%	0.42%	2.0	1.5	0.4	2.7	2.4	0.8	0.47%	6.6
AntaKori	31/01/19	0	250	267	517	0.00	0.29	0.26	0.00%	0.48%	0.41%	0.0	2.3	2.2	0.0	1.2	1.1	0.58%	3.0
Canariaco Norte	28/02/22	424	671	411	1,505	0.07	0.05	0.04	0.48%	0.39%	0.32%	0.9	1.1	0.5	2.0	2.6	1.3	0.42%	6.4
Cascabel	20/04/22	1,192	1,470	544	3,206	0.39	0.14	0.24	0.48%	0.28%	0.24%	14.9	6.6	4.2	5.7	4.1	1.3	0.48%	15.2
Casino	29/04/22	188	2,303	1,413	3,903	0.40	0.17	0.14	0.24%	0.13%	0.10%	2.4	12.5	6.3	0.5	3.0	1.4	0.21%	8.3
Cortadera	31/03/22	0	471	108	579	0.00	0.12	0.08	0.00%	0.36%	0.28%	0.0	1.8	0.3	0.0	1.7	0.3	0.40%	2.3
Hillside	May 2015	72	151	114	337	0.16	0.13	0.10	0.55%	0.59%	0.60%	0.4	0.6	0.4	0.4	0.9	0.7	0.65%	2.2
Kharmagtai	8/12/21	0	487	664	1,151	0.00	0.20	0.20	0.00%	0.30%	0.20%	0.0	3.1	4.2	0.0	1.5	1.3	0.34%	4.0
Warintza	1/04/22	0	579	887	1,466	0.00	0.03	0.01	0.00%	0.47%	0.37%	0.0	0.6	0.3	0.0	2.7	3.3	0.42%	6.1
Los Helados	26/04/19	0	2,099	827	2,926	0.00	0.15	0.10	0.00%	0.38%	0.32%	0.0	10.1	2.6	0.0	8.0	2.6	0.43%	12.7
NorthMet	19/11/19	319	403	415	1,137	0.03	0.03	0.03	0.24%	0.23%	0.24%	0.3	0.4	0.4	0.8	0.9	1.0	0.25%	2.9
Productora	31/03/22	0	253	90	343	0.00	0.08	0.03	0.00%	0.41%	0.29%	0.0	0.6	0.1	0.0	1.0	0.3	0.41%	1.4
Vizcachitas	10/05/19	254	1,030	789	2,073	0.00	0.00	0.00	0.44%	0.39%	0.34%	0.0	0.0	0.0	1.1	4.0	2.7	0.37%	7.7

<sup>1</sup> Source: S&P Market Intelligence and Company Disclosure

<sup>2</sup> It is Xanadu's opinion that all the elements included in the metal equivalents calculation above have a reasonable potential to be recovered and sold

<sup>3</sup> ASX/TSX Announcement 8 December 2021 – Kharmagtai Resource Grows to 1.1Bt containing 3Mt Cu and 8Moz Au; and ASX/TSX Announcement 28 February 2022 – Kharmagtai Technical Report

# Kharmagtai Copper Resource at Tier 1 Scale

## 2021 Resource added 61,500m to the 2018 resource model

- Larger: Scale increase 0.6Mt to 1.1Mt, plus doubled higher-grade zones (>0.8% CuEq)
- Better Defined: Indicated classification increase from 22% to 41%
- Higher Value: Doubled gold by-product from 4Moz to 8Moz
- Still Has Upside: Strong growth potential at depth and along strike

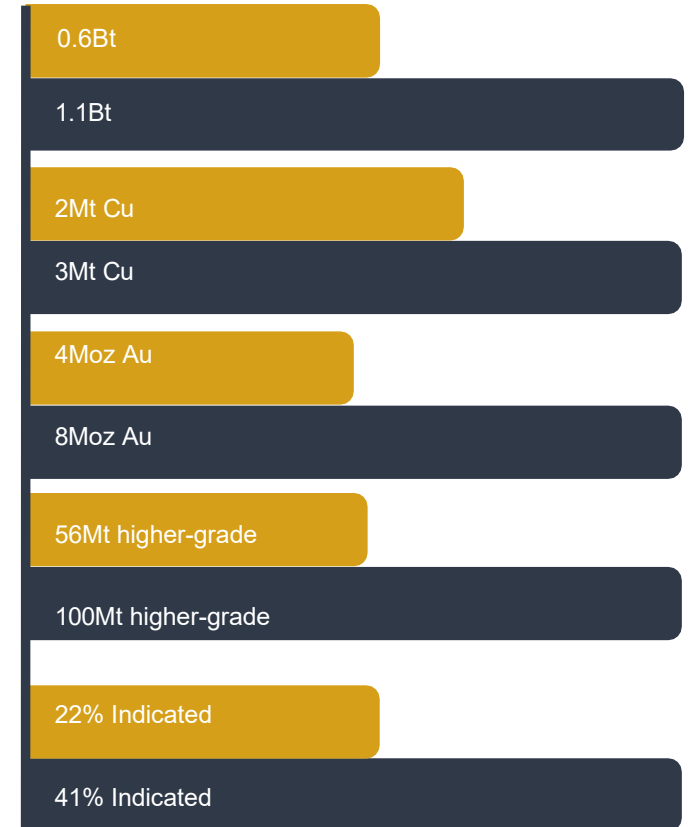
Resource	Cutoff (% CuEq)	Classification	Tonnes (Mt)	Grades			Contained Metal			
				CuEq (%)	Cu (%)	Au (g/t)	CuEq (Mlbs)	CuEq (kt)	Cu (kt)	Au (koz)
2021 <sup>1</sup>	0.2(OC) 0.3(UG)	Indicated	455	0.4	0.3	0.2	4,078	1,850	1,250	3,700
		Inferred	664	0.3	0.2	0.2	5,140	2,330	1,680	4,100
2018 <sup>2</sup>	0.3(OC) 0.5(UG)	Indicated	131	0.5	0.4	0.4	1,570	710	480	1,500
		Inferred	477	0.4	0.3	0.2	4,350	1,970	1,500	2,930

<sup>1</sup> ASX/TSX Announcement 18 December 2018 – Technical Report to support Kharmagtai Mineral Resource

<sup>2</sup> ASX/TSX Announcement 28 February 2022 – Kharmagtai Technical Report

<sup>3</sup> ASX/TSX Announcement 8 December 2021 – Kharmagtai Resource Grows to 1.1 Billion Tonnes

<sup>4</sup> ASX/TSX Announcement 1 December 2021 – Further Extensions to High Grade Zones at Stockwork Hill



2018 Mineral Resource<sup>1</sup>

2021 Mineral Resource<sup>2,3</sup>



# Kharmagtai Opportunity for New Discovery

## New systems continue to be unlocked

### Exploration Scorecard

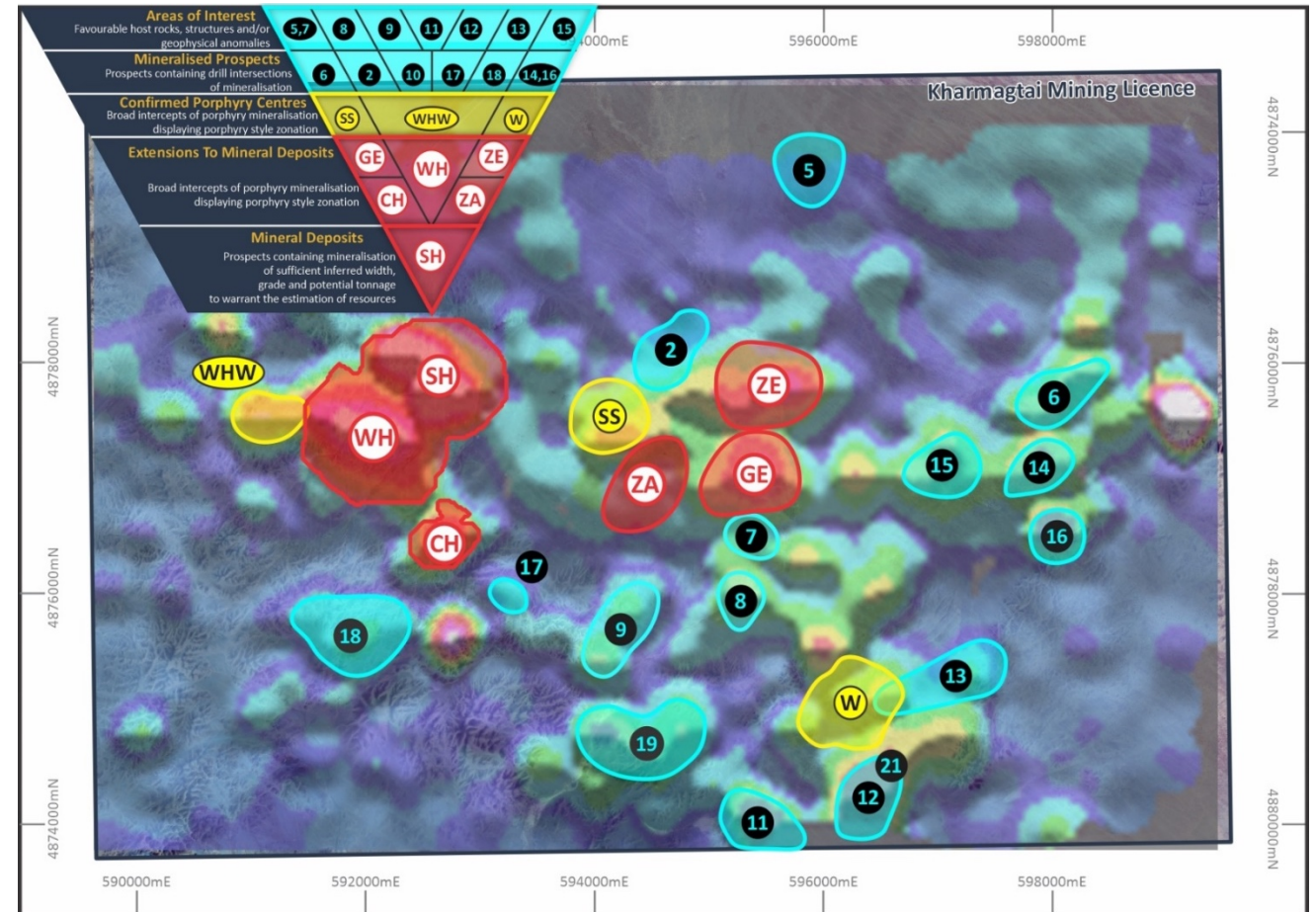
- 5 subsurface discoveries out of 10 prospects drilled
- <\$0.01/lb CuEq discovery cost vs ~\$0.07/lb industry avg<sup>1</sup>

### District Continues To Open Up

- Multiple copper-gold porphyry intrusions
- Mineralised structures linked to faulting
- Increasing grade at depth

### Porphyry Deposits Evolve Over Time

- Continued exploration for new high-grade systems
- Link existing systems at depth
- Highly prospective for new discovery
- Several priority targets drilled in 2021
- >20 targets to be drilled over next 12 months



<sup>1</sup> Minexconsulting <https://minexconsulting.com/recent-trends-in-copper-exploration-are-we-finding-enough-2/>

# Red Mountain Highly Prospective

## Already delivering exciting results

- Advanced exploration – multiple known targets:
  - Outcropping sulphides at surface, **up to 184m width**
  - 4 mineralised Cu-Au systems
  - 2 epithermal Au-Ag systems
  - High-grade diamond drill assays, **up to 16% Cu**
- Located 265km east of Kharmagtai
- 30-year extendable mining license
- Consolidated to 100% ownership in 2021<sup>1</sup>
- New exploration program kicked off August 2022

<sup>1</sup> ASX/TSX Announcement 27 October 2021 – Xanadu Consolidates 100% Ownership of Red Mountain

