



Pre-Feasibility Study – Kharmagtai Copper-Gold Project

14 October 2024

Xanadu Mines Ltd (**ASX:XAM, TSX:XAM**) (**Xanadu, XAM or the Company**) is pleased to provide the Pre-Feasibility Study (PFS) for its flagship Kharmagtai Copper-Gold Project (Kharmagtai or the Project), located in an established mining jurisdiction in the South Gobi region of Mongolia.

This Study confirms the potential of Kharmagtai as a globally significant, long life, low cost, low risk future copper-gold mine. It is based on conventional open pit mining and sulphide flotation, with low environmental, social and governance (**ESG**) risk, and supported by nearby rail, road and power links providing the potential for rapid development. Kharmagtai is well positioned to help fill the looming copper global supply gap driven by growing demand for an increasingly electrified economy.

Highlights

Presented in 100% Terms (Xanadu holds 50% control and 38.25% economic share)

- Confirms Kharmagtai as a potential world class, low cost, long life mine. Estimated Results:
 - 21% IRR (**range 14-25%, and 31% at spot commodity prices**)
 - US\$930 million NPV @ 8% (**range US\$ 450-1,220 million, and US\$1,880 million at spot commodity prices**)
 - 4-year payback (**range 4-5 years, and 3 years at spot commodity prices**)
 - 29-year mine life
- Projected production ranges from 60-80ktpa copper and 165-170kozpa gold production across the first and second stages of expansion.
- First quartile all-in sustaining (C1) costs of US\$0.70/lb Cu for first eight years, net of by-product credits
- Conventional, low technical complexity open pit and process plant with low 0.6:1 strip ratio for first eight years
- Located in sparsely populated, flat terrain, with nearby established rail, power and water links
- Bankable Feasibility Study expected to commence in Q1 CY2025 and complete in Q2 of CY2026
- Robust study outcomes, led by high quality advisory team

Xanadu's Executive Chairman and Managing Director, Mr Colin Moorhead, said *"This Pre-Feasibility Study is the result of 18 months of hard work led by Spencer Cole, working closely with our JV partners at Zijin Mining Group Co Ltd. This confirms to an international PFS standard that Kharmagtai as a world class copper asset, located in a region of the South Gobi which hosts several significant deposits, including those at Rio Tinto's Oyu Tolgoi mine. The future development of Kharmagtai into a long life, low cost, mine will provide significant value to our shareholders and multi-generation employment and economic opportunity for our stakeholders in Mongolia. It remains true today that as the global economy decarbonises, the supply of copper cannot meet forecast demand. Development of large scale porphyry copper deposits is becoming more urgent, and with a competitive time to production and relatively low ESG risk, Kharmagtai is well positioned to move forward quickly. We are excited to demonstrate such a strong Project at Kharmagtai and to move forward with its final pre-construction stage of development."*

Pre-Feasibility Study

The Pre-Feasibility Study is attached to this Announcement.

Cautionary Statement

The Pre-Feasibility Study (PFS) has been undertaken to assess the viability of developing the Kharmagtai Copper-Gold Project by constructing a large-scale open cut mine and processing facility to produce a saleable gold-rich copper concentrate for export and gold doré for sale to the Bank of Mongolia. It is a technical and economic study assessing the potential viability of the Kharmagtai Project. It is based on technical and economic assessments that are sufficient to support the estimation of ore reserves. The PFS is based on the material assumptions in this document. These include assumptions about the availability of funding. While Xanadu Mines Ltd (**Xanadu**) considers all 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 PFS will be achieved.

The PFS is based on the October 2024 Mineral Resource Estimate, Probable Ore Reserves, and a PFS standard level of technical and economic assessments, which do not provide assurance of economic development or certainty that the PFS outcomes will be realised. The PFS has been completed to a level of accuracy of +/-25% in line with industry standard accuracy for this stage of development.

The Company has reasonable grounds for disclosing a Production Target, whereby the first eight years of production is predominantly scheduled from the Indicated Resource category which exceeds the economic payback period for the project by 4 years. As a result, the project economics are not dependent upon Inferred Resource to justify investment.

Approximately 73% of the 29-year Life of Mine Production Target and 88% of the first 8 years of mining is delineated from the Indicated Mineral Resource category. There is a lower level of geological confidence associated with Inferred Mineral Resource, and while the company recognises the mine inventory contains a significant amount of Inferred Resource in the later years of the mine life, due to the nature of the orebody, it considers the estimates to be accurate and to have a high probability of conversion from Inferred to Indicated Resource category through further drilling, with a low probability of material downgrade. The nature of Kharmagtai mineralisation is bulk tonnage, lower grade and disseminated in nature, which results in predictable variations in grade over larger drill spacing than for other types of mineralisation.

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During the completion of the PFS, evaluation of an Ore Reserve Estimate was completed including only Probable tonnes. To support the Ore Reserve evaluation within the PFS, a separate Whittle 4X open pit optimization evaluation was completed by Mining Plus with no value given to the Inferred Mineral Resource within all deposits. Using this model a PFS level mine design, mine scheduling, mining costing and overall project economic model evaluation was completed solely based on Indicated Resource to confirm positive economic outcomes for the Ore Reserve. For full details of the estimated Ore Reserve, please refer to Xanadu ASX/TSX Announcement dated 14 October 2024.

The Mineral Resource underpinning the production target in the PFS has 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 at the end of this PFS. For full details of the Mineral Resource Estimate, please refer to Xanadu ASX/TSX Announcement dated 14 October 2024.

To achieve the range of outcomes indicated in the PFS, funding in the order of \$890 million will likely be required from owners of the project. Investors should note that there is no certainty that Xanadu will be able to source its share of the required 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 further joint venture of the project. If it does, this could materially reduce Xanadu proportionate ownership of the project.

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.

Unless otherwise stated, all currency stated in this PFS is in US dollars.

Forward Looking Statements

Certain statements contained in this PFS, 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 PFS or to reflect the occurrence of unanticipated events, other than as 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 PFS 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 PFS.

To achieve the range of Kharmagtai Copper-Gold Project outcomes indicated in this PFS, funding in the order of approximately \$890 million will likely be required by the owners of the project. As a result of minority ownership and carry agreements, Xanadu and Zijin are jointly accountable for 90.4% of this total based.

Based on current market conditions and the results of studies undertaken, there are reasonable grounds to believe Xanadu's share of 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 PFS 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 PFS.

About Xanadu Mines

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 jointly control a globally significant copper-gold deposit in our flagship Kharmagtai project. Xanadu holds 50-50 JV share with Zijin Mining Group in Khuiten Metals Pte Ltd, which controls 76.5% of the Kharmagtai project.

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This Announcement was authorised for release by Xanadu's Board of Directors.

XANADU MINES



KHARMAGTAI

KHARMAGTAI PREFEASIBILITY STUDY 2024

OCTOBER 2024

ASX:XAM | TSX:XAM

CAUTIONARY STATEMENTS

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SUMMARY OF FINDINGS

Presented in 100% terms (Xanadu holds 50% control and 38.25% economic share)

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Key PFS Outcomes

\$930m

Post Tax NPV_{8%}

21%

Internal Rate of Return

29 years

Mine Life

\$890m

Pre-production Capital

\$8,500m

Annual EBITDA

4 years

Payback Period

75kt

Average Annual
Production Copper

165koz

Average Annual
Production Gold

LARGE SCALE, LOW-COST COPPER AND GOLD PRODUCTION

- Average annual production of 75kt copper and 165koz gold
- 29-year Life of Mine (**LOM**) at an initial mill throughput of 26Mtpa, expanding to 52Mtpa
- Total LOM ore processed of 1,270 Mt, producing approximately 2.2Mt of copper and 4.8Moz of gold metal.
- First quartile C1 cash cost \$0.70/lb Cu net of byproduct credits for the first eight years and second quartile C1 cash cost of \$1.30/lb Cu over LOM.

STRONG INVESTMENT RETURNS

- Post-Tax Internal Rate of Return (**IRR**) of 21% (**range 14% to 25%, and 31% for spot commodities**).
- Payback of 4 years (**range 4 to 5 years, and 3 years for spot commodities**).
- Post-Tax Net Present Value (**NPV**) of \$930 million (**range \$450 million to \$1,220 million, and \$1,880 million for spot commodities**).
- Estimated pre-production capital expenditure of \$890 million for pit development, process plant and infrastructure (**range \$840 million to \$930 million**).

LOW TECHNICAL COMPLEXITY

- Open pit mine, with low 0.6:1 strip ratio for first eight years and 1.4:1 over LOM.
- Limited (30-40Mt) pre-strip of oxidised material.
- Conventional copper sulphide flotation plant, augmented with gravity and Carbon In Leach (**CIL**) to improve gold recoveries.
- Relatively flat terrain and low rainfall enabling low risk waste and tailings storage solutions.
- Rail links and upgradeable construction grid power are already in place at or near the tenement.

GLOBALLY COMPETITIVE TIME TO PRODUCTION

- Relatively low ESG risk due to sparse population and flat terrain.
- Permitting and approvals process established and achievable.
- Established road and rail infrastructure and proximity to major copper markets.
- Mongolia is a well established and emerging mining jurisdiction with a well-educated population providing access to the required skills base.

SIGNIFICANT UPSIDE OPPORTUNITIES

- Copper recovery expected to improve through further optimisation of reagents, including pyrite suppression.
- Test work demonstrates that silver is present in the ore at payable grades, with potential to add material value uplift but is yet to be modelled to JORC standard.
- Heap leach testwork using glycine leach technology demonstrated potential to reduce stripping and generate early cash from processing shallow copper and gold rich oxide material, subject to further studies and finding a commercial solution for acid supply.
- Potential for further optimisation of pit slopes through targeted drilling, structural modelling and geological studies to reduce stripping and deepen pits.
- Application of additional technologies in later stages such as trolley assist and other future technologies has potential to reduce carbon emissions, lower operating costs, enable bigger economic pits, and extend the mine life.
- Modelling demonstrates further exploration upside with mineralisation remaining open along strike and at depth in several areas, implying potential to grow the resource and extend higher-grade zones.
- Deeper, higher-grade zones have potential for future bulk underground (**UG**) mining.
- With a large Chinese miner as a partner, there is potential to access lower cost capital which could materially uplift project NPV.

Kharmagtai JV Partner Zijin Mining Group will take over as operator for the final feasibility stage prior to Financial Investment Decision (**FID**) and may add significant value uplift through further project optimisation and access to lower cost of capital. Subject to approval of this PFS by the Khuiten Metals JV Board, the Kharmagtai Project is expected to commence the Bankable Feasibility Study (**BFS**) stage in Q1 2025 and targeting construction to commence by Q2 2026 (subject to funding and approvals).



KEY STUDY FINDINGS

Presented on 100% basis (Xanadu holds 50% control and 38.25% economic share)

Table 1: Key Study Outcome Ranges (US\$)

Project Financial Summary	Unit	Low	Base	High	Spot	2022 PEA ¹
Net Revenue	\$M	26,600	27,900	29,300	32,400	16,100
EBITDA	\$M	7,400	8,500	9,500	12,500	6,770
Post-Tax Net Cash Flow	\$M	3,200	4,600	5,500	7,700	3,420
Post-Tax NPV (8%)	\$M	450	930	1,220	1,880	630
Post-Tax IRR	%	14%	21%	25%	31%	20%
Post-Tax Capital Payback ^a	Yr	5	4	4	3	4
Pre-Tax Net Cash Flow	\$M	5,100	6,300	7,500	10,300	4,900
Pre-Tax NPV (8%)	\$M	1,030	1,400	1,770	2,670	1,030
Pre-Tax IRR	%	22%	27%	32%	40%	25%
Pre-Tax Capital Payback	yr	4	3	3	2	3

^a Represents the year during which capital payback is achieved

Table 2: Key Study Assumptions (US\$)

Project Financial Summary	Unit	Low	Base	High	Spot ^a	2022 PEA
Cu price	\$/lb	3.69	4.10	4.51	4.52	4.00
Au price	\$/oz	2,210	2,100	1,990	2,658	1,700
Pre-Production Capex	\$M	930	890	840	890	690
LOM Capex ^b	\$M	2,070	1,970	1,870	1,970	1,880

^a Spot prices as at 4 October 2024, per [dailymetals.com](https://www.dailymetals.com)

^b LOM capex includes Stage 1 Pre-Production capital, Stage 2 Expansion capital, and Sustaining capital as developed during the PFS

The high and low ranges are created to help readers understand potential variances in different economic outcomes by flexing copper price, gold price, and capex. The low case scenario assumes copper price -10%, capex +5%, and gold price +5% which represents an economic environment of slowing industrial activity (copper -10%), higher inflation (capex +5%), partly offset by gold acting as a natural hedge (gold +5%). The high case represents the inverse, representing an accelerating industrial environment and reduced inflation.

The spot price scenario above assumes no change to capex and metal prices remaining at the current spot prices per the date in the table.

Capital payback is found to be within the 4th year of operation in both high and low scenarios, although much earlier within the year for the high scenario.

¹ ASX/TSX Announcement 6 April 2022 – Scoping Study Kharmagtai Copper-Gold Project; and ASX Announcement 20 June 2022 – NI43-101 Preliminary Economic Assessment Technical Report

Table 3: Base Case Detail Findings (US\$)

Area	Measure	Unit	Stage 1 (8-yr)	Stage 2 (21-yr)	PFS LOM	2022 PEA LOM ²
Production	Period	Years	8	21	29	30
	Ore Process Rate ^a	Mtpa	26	52	26-52	15-30
	Ore Processed	Mt	210	1,060	1,270	760
	Cu avg grade	%	0.28%	0.20%	0.21%	0.21%
	Au avg grade	g/t	0.24	0.13	0.15	0.18
	Cu avg recovery	%	83%	82%	82%	90%
	Au avg recovery from sulphide	%	82%	79%	81%	73%
	Cu produced total	kt	490	1,710	2,200	1,480
	Au produced from sulphide	koz	1,270	3,420	4,700	3,340
	Au produced from oxide	koz	70	0	70	0
	Au produced total	koz	1,340	3,420	4,770	3,340
	Cu avg annual production	ktpa	60	80	75	50
	Au avg annual production	kozpa	170	165	165	110
Capital	Project Capital	\$M	890	720	1,610	1,210
	Sustaining Capital	\$M	80	290	360	680
Operating Cost	All In Sustaining Cost	\$/lb	1.25	2.05	1.90	1.90
	C1 Cash Cost	\$/lb	0.70	1.50	1.30	1.35
	Operating Cost	\$/t ore	16.80	11.50	12.50	11.20

^a Excludes processing of higher gold grade oxides for first 8 years

Kharmagtai operates in the first quartile C1 Cash Costs for Stage 1 and the second quartile C1 Cash Costs for the Life of Mine.

2 ASX/TSX Announcement 6 April 2022 – Scoping Study Kharmagtai Copper-Gold Project; and ASX Announcement 20 June 2022 – NI43-101 Preliminary Economic Assessment Technical Report



Copper C1 Cash Cost (US\$/lb)

Source: S&P Global Market Intelligence 2024 Forecast

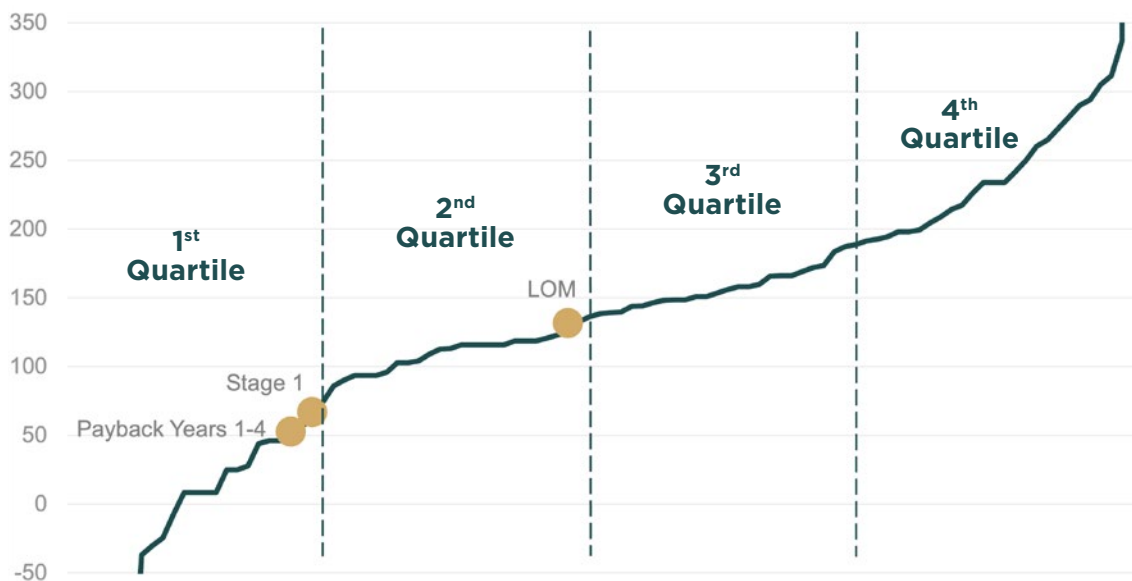


Figure 1: Kharmagtai on C1 Industry Cost Curve³

The Project timeline has been developed with inputs from the PFS team and Mongolian project, government and community relations advisers in consideration of required Mongolian submissions and approvals. The construction period incorporates a hybrid of traditional western and Chinese contributions to a Mongolian constructed facility. Construction commences in 2026 allowing for completion of an international standard BFS, which differs from the Scoping Study⁴ which assumed earlier construction in parallel with final engineering and study.

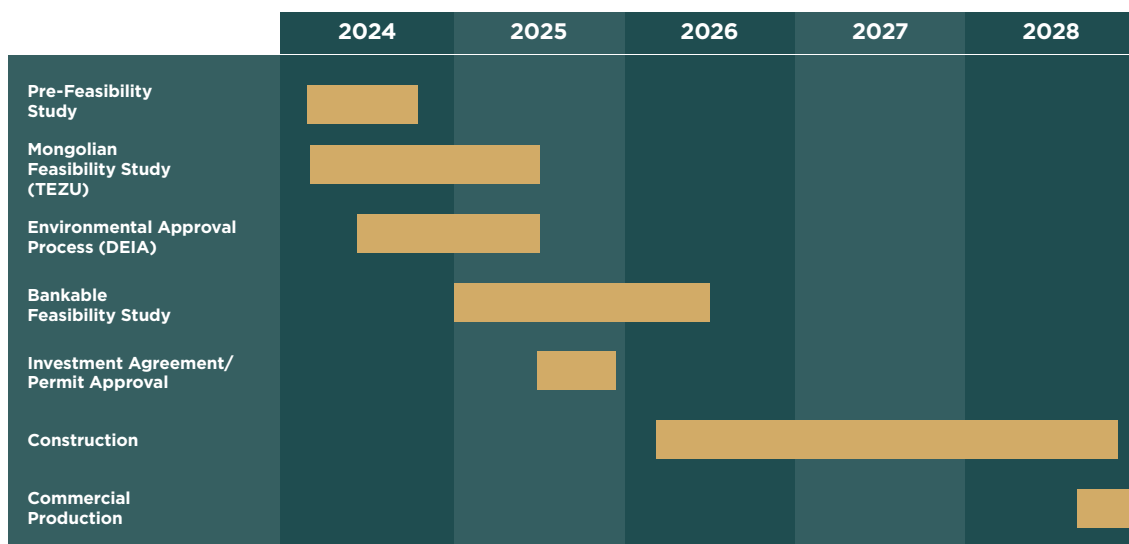


Figure 2: Project Timeline

³ Industry curve sourced from S&P Global Market Intelligence

⁴ ASX/TSX Announcement 6 April 2024 - Kharmagtai Copper-Gold Project Scoping Study

PROJECT DESCRIPTION

Xanadu was the operator of the 2024 PFS for Kharmagtai which is owned 38.25% by Xanadu, 38.25% by Zijin, 13.5% by Xanadu Executive Director Ganbayar Lkhagvasuren, and 10% by QGX Ltd. The Project is situated in the South Gobi region of Mongolia and is in the exploration and evaluation stage of development. Through its 50% ownership of the Singaporean holding company Khuiten Metals Pte Ltd, Xanadu shares control of the project with its JV partner Zijin.

This PFS was based on the October 2024 JORC Mineral Resource Estimate (**MRE**) and Probable Ore Reserves and demonstrates that Kharmagtai is amenable to large scale open pit mining with conventional ore processing to deliver strong project economics.

The mine design includes open pits at the Stockwork Hill, White Hill, Copper Hill, Zephyr and Golden Eagle deposits. The largest contributors to the mine inventory are the White Hill and Stockwork Hill deposits. The two pits are mined simultaneously and eventually merge into a super pit.

The primary mining fleet will use an electric-drive, diesel engine haul fleet and electric shovels. The proposed haul truck platform is designed for future conversion to hybrid or fully electric operation. Primary drill fleet predominantly comprises electric powered drills supported by diesel powered drills focused on wall control and quality of blasting. The BFS will further investigate the use of trolley assist and other complimentary technologies that could reduce the mining cost as the pits deepen.

The plant will process the copper sulphide ore using a conventional design comprising a stockpile, primary crusher, semi-autogenous grinding (**SAG**) and ball mills, gravity gold recovery, flotation to produce a saleable copper-gold concentrate and gold doré. Flotation cleaner tails are further processed through a CIL circuit to produce additional gold doré. Trade-off studies and assessment of the metallurgical testwork⁵ has resulted in the achievement of an optimised throughput with a single train comminution circuit at 26Mtpa for the first 8 years of operation (Stage 1). Following payback and net cash generation, the plant capacity is increased to 52Mtpa (Stage 2) with a duplicate circuit.

The sulphide mineralisation is overlain by 20-30 metres of oxidised mineralisation (oxide) at similar grades which cannot be processed with the flotation plant. Concept level testwork has demonstrated that the oxide is amenable to bulk heap leaching using a staged leach process of acid and then glycine-cyanide. Further work to bring the oxide processing to PFS level will be undertaken in the upcoming BFS. The 2024 PFS design processes the most gold-rich oxide ore through a small, separate grinding circuit and into the same CIL circuit as the cleaner tails, which generates additional gold byproduct. The PFS assumes the remainder of oxide is pre-strip waste (i.e. ascribed zero value) and it is stockpiled for potential future heap leach processing.

Power for construction will be sourced from an existing 35kV transmission line that was built during the PFS.

PowerChina Fujian Electric Power Engineering Co., Ltd undertook the PFS power study and assessed a captive power station, grid power and renewables. Renewable power (solar and wind) provides the lowest operating cost power but cannot provide a continuous supply. Hence the PFS assumes that overall power for the operation will be supplied 50-50 from renewable sources and the grid. The renewable power facility with the capacity to supply full demand will be constructed by a 3rd party under a long-term offtake contract. Construction will take place in parallel with the Kharmagtai mine construction phase. The grid power component will bring power from Inner Mongolia at a higher operating cost relative to renewables.

5 ASX/TSX Announcement 18 September 2024 – Kharmagtai PFS Metallurgy Results

The grid connection will be established through a separate 3rd party under long term contract structured to fully back up the renewable capacity via connection at the Tavan Tolgoi node to the power lines supplying Tavan Tolgoi and Oyu Tolgoi mines. Opportunity exists for excess renewable energy to be fed back into the national grid, attracting an income stream to partially offset the relatively higher operating cost of the grid supplied power.

Concentrate transport will be via rail, using the dedicated siding on the rail line that passes within 15km of the site.

Stage 1 water will be supplied from multiple bore fields near the Project. The Project has secured a high output bore field close to the project but still requires significant additional water source(s) to meet full Stage 1 requirement. A work plan has been developed to meet this requirement through a structured approach of additional exploration plus commercial engagement with other water rights holders in the region who have underutilised resources. Costs are also included in the PFS financial evaluation. Stage 2 expansion water is expected to be provided through additional water exploration, augmented by the proposed Kherlen Toono project, which is a high-capacity pipeline being developed by the Government of Mongolia to move water down from the north to support further development of the mining industry in the Gobi. This project is currently in the feasibility study stage and partly funded by the Oyu Tolgoi and Tavan Tolgoi operating mines. The Kherlen Toono project will derisk both Stage 1 and Stage 2 water sources over the LOM.

Continued engagement and consultation will be undertaken with regional communities and the Government of Mongolia, including negotiation of a Kharmagtai Investment Agreement.

A clear pathway has been identified to obtain the required regulatory approvals for the Project. Experienced Mongolian engineering and environmental companies have been engaged to complete all necessary Mongolian studies and through the Bankable Feasibility Study (**BFS**) stage, the Kharmagtai team will actively engage with government agencies and ministries to obtain the construction permits.

Consistent with the timeline in Figure 2, construction approvals will be completed in 2026, followed by a 30-month construction period. Open pit mining will commence in 2027, to complete pre-stripping ahead of plant commissioning and initial ore processing in 2028. The mine life of approximately 29 years would provide significant employment, revenue and other opportunities for South Gobi regional communities and for Mongolia.

LOCATION OF KHARMAGTAI IN MONGOLIA AND THE SOUTH GOBI

Kharmagtai is located within the Omnogovi Province of southern Mongolia, approximately 420 km southeast of capital city of Ulaanbaatar (Figure 3). Mongolia is bordered by Russia to the north and China to the south.

This area of Mongolia contains several major mineral deposits. Kharmagtai is located 120 km north of the Oyu Tolgoi porphyry copper-gold project, 150 km west of the Tsagaan Suvarga copper deposit, and 60 km north of the Tavan Tolgoi coal deposit.

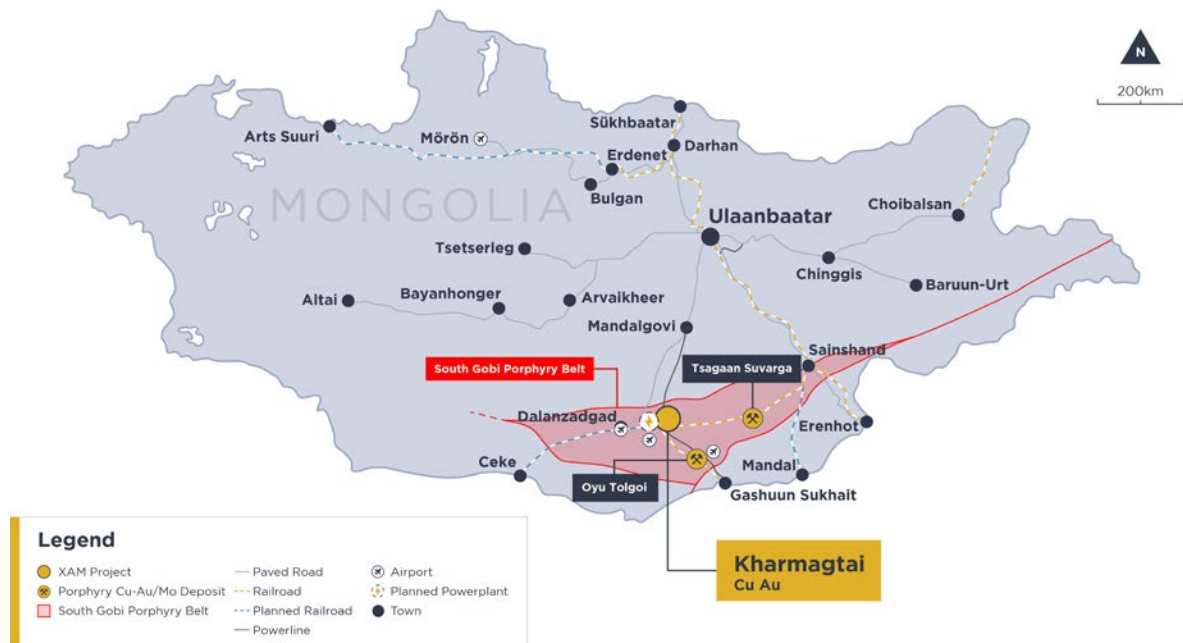


Figure 3: Location of Kharmagtai in Mongolia



GEOLOGY AND RESOURCES

Kharmagtai consists of multiple co-genetic gold-rich porphyry copper centres and tourmaline breccia pipes within the Carboniferous Kharmagtai Igneous Complex.

The Kharmagtai Igneous Complex consists of a series of intrusive bodies ranging between diorite through monzodiorite, quartz-monzodiorite to monzonite and granodiorite compositions.

There are three styles of mineralisation at Kharmagtai; porphyry style stock work Cu-Au mineralisation, tourmaline breccia style Cu-Au mineralisation and epithermal gold associated with carbonate base metal veins.

The Resource models indicate potential at depth for a future underground mine, in addition to the current open pit design. As demonstrated below, significant volumes of mineralisation have been modelled below the constraining wire frames.

These parts of the model will be targeted for further investigation through economic studies to assess if more of this material can be brought into the Mineral Resource.

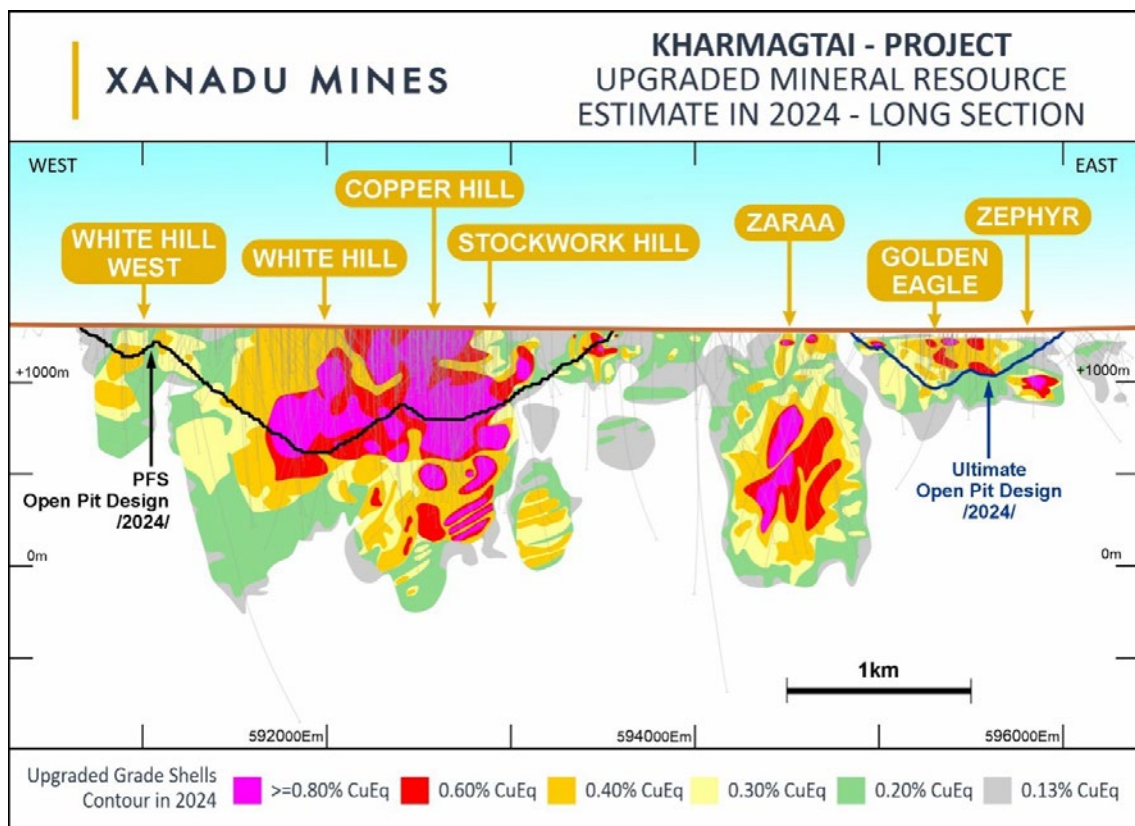


Figure 4: Long Section of Kharmagtai District



MINERAL RESOURCE ESTIMATE

Presented in 100% terms (Xanadu holds 50% control and 38.25% economic share)

The Kharmagtai Mineral Resource Estimate (**MRE**) was updated on 14 October 2024⁶. The PFS was based on the Open Cut component of the MRE, excluding any UG MRE.

The Mineral Resources is reported inclusive of the Ore Reserve. The Mineral Resource component that is not in Ore Reserve does not have demonstrated economic viability.

Table 4: Copper and Gold Mineral Resource Estimate

Cutoff (% CuEq)	Classif-ication	Tonnes (Mt)	Grades			Contained Metal			
			CuEq (%)	Cu (%)	Au (g/t)	CuEq (Mlbs)	CuEq (kt)	Cu (kt)	Au (koz)
Open Cut 0.13	Indicated	1,300	0.30	0.21	0.16	8,400	3,800	2,700	6,800
	0.13	800	0.25	0.18	0.12	4,100	1,900	1,400	3,000
	Total	2,100	0.28	0.20	0.14	12,500	5,700	4,100	9,800
Under-ground 0.30	Indicated	40	0.45	0.32	0.24	400	150	100	250
	Inferred	160	0.41	0.31	0.19	1,500	650	500	950
	Total	200	0.42	0.31	0.20	1,900	800	600	1,200
Grand Total		2,200	0.29	0.21	0.15	14,400	6,500	4,700	11,000

Notes:

- PFS mining inventory excludes underground resource
- CuEq (lbs and t) accounts for Au (g/t) value and CuEq (t) must not be totalled to Au ounces
- Figures may not sum due to rounding
- Significant figures do not imply an added level of precision
- Resource constrained by 0.1%CuEq reporting solid in line with geological analysis by XAM
- Open Pit Resource constrained by RV1400fpit (coded field equal to 1)
- Open Pit cut-off at 0.13% CuEq, consistent with the PFS marginal cut-off; Underground cut-off at 0.3% CuEq
- Resource CuEq equation ($CuEq = Cu + Au \cdot 0.60049 \cdot 0.86667$) where Au at \$1400/oz and Cu at \$3.4/lb was employed according to the Clients' (XAM) direction.
- Au recovery is relative with Cu rec=90% and Au rec=78% (rel Au rec=78/90=86.667% with number according to the Clients' (XAM) direction
- Model: KH ALL GLOBAL OKMOD FINAL V3 FORCLIENT 140624 inRV1400fpit

6 ASX/TSX Announcement 14 October 2024 – Kharmagtai Mineral Resource & Ore Reserves

ORE RESERVE

Presented in 100% terms (Xanadu holds 50% control and 38.25% economic share)

The maiden Kharmagtai Ore Reserve was published on 14 October 2024.⁷

A summary of material assumptions is provided below and included in JORC Table 1 within this report. There are no material differences between the definitions of Probable Ore Reserves under the 2014 CIM Definition Standards for Mineral Resources and Mineral Reserves and the equivalent definitions in the JORC Code.

Table 5: Copper and Gold Ore Reserve

Classification	Dry Tonnes (Mt)	Copper Grade (%)	Gold Grade (g/t)	Insitu Copper ('000 t)	Insitu Gold ('000 oz)
Proved	0	0	0	0	0
Probable	730	0.21	0.17	1,600	4,000

Table 6: Copper and Gold Ore Reserve by Deposit

Deposit	Dry Tonnes (Mt)	Copper Grade (%)	Gold Grade (g/t)	Insitu Copper ('000 t)	Insitu Gold ('000 oz)
Stockwork Hill	233	0.22	0.21	520	1,600
White Hill	437	0.21	0.14	930	2,000
Copper Hill	22	0.26	0.17	60	200
Golden Eagle	13	0.12	0.31	20	100
Zephyr	16	0.15	0.19	20	100
White Hill West	11	0.16	0.11	20	40

Notes:

- Figures may not sum due to rounding
- Ore Reserve constrained by Kharmagtai PFS mine plan inventory⁸
- Reserve CuEq equation ($CuEq = Cu + Au \times 0.7039Au$) where Au at USD\$1900/oz and Cu at USD\$4.0/lb was employed according to the Clients' (XAM) direction.
- Au recovery is relative with Cu rec=80% and Au rec=81% according to the Clients' (XAM) direction

⁷ ASX/TSX Announcement 14 October 2024 – Kharmagtai Mineral Resource & Ore Reserves

⁸ ASX/TSX Announcement 14 October 2024 – Kharmagtai Pre-Feasibility Study

MATERIAL ASSUMPTIONS FOR THE ORE RESERVE

Kharmagtai is a project at PFS stage based on a conventional open pit, truck and shovel operation feeding a copper concentrator. The Ore Reserve is supported by this Study, and the Project is progressing to the Feasibility Stage. The Ore Reserve statement will be further updated at the completion of the Bankable Feasibility Study.

The PFS mining inventory is primarily in the Indicated Resource classification, however there is a component of Inferred Classification material in later years of the mine plan which does not form part of the Ore Reserve.

To support the Ore Reserve evaluation within the PFS, a separate Whittle 4X open pit optimisation evaluation was completed with no value given to the inferred classified material within the Mineral Resource Estimate for all deposits. Following this a PFS level mine design, mine scheduling, mining costing and overall project economic model evaluation was completed to confirm positive economic outcomes for the Ore Reserve. A marginal breakeven cut-off of 0.13% CuEq was adopted based on economic parameters and recoveries determined as part of the PFS study.

ORE RESERVE CLASSIFICATION

The Probable Ore Reserve is based on Indicated Mineral Resources and diluting material within a regularised resource block model. Diluting material is either low grade Indicated Mineral Resource or material carrying no grade. No Measured Mineral Resource is stated for this deposit. Resource classifications are based on an assessment of geological confidence as a function of geological and mineralisation continuity as outlined in the provided Mineral Resource Estimate.

SITE LAYOUT

Kharmagtai is laid out in a simple and conventional manner, with the initial operation fully contained within the mining lease.

Kharmagtai is laid out in a simple and conventional manner, with the initial operation fully contained within the mining lease. The site was designed around the mining locations with an exclusion zone outside a revenue factor 1.4 pit.

The on-lease tailings storage facility (**TSF**) has sufficient capacity for the first 12 years of operation. The PFS assumes that tailings produced after 12 years will be stored in a second TSF located immediately north of the mining lease. The second TSF will require a land use permit from the local government, which the project expects to obtain after operations commence, following the same process currently underway at Oyu Tolgoi to approve its offsite TSF.

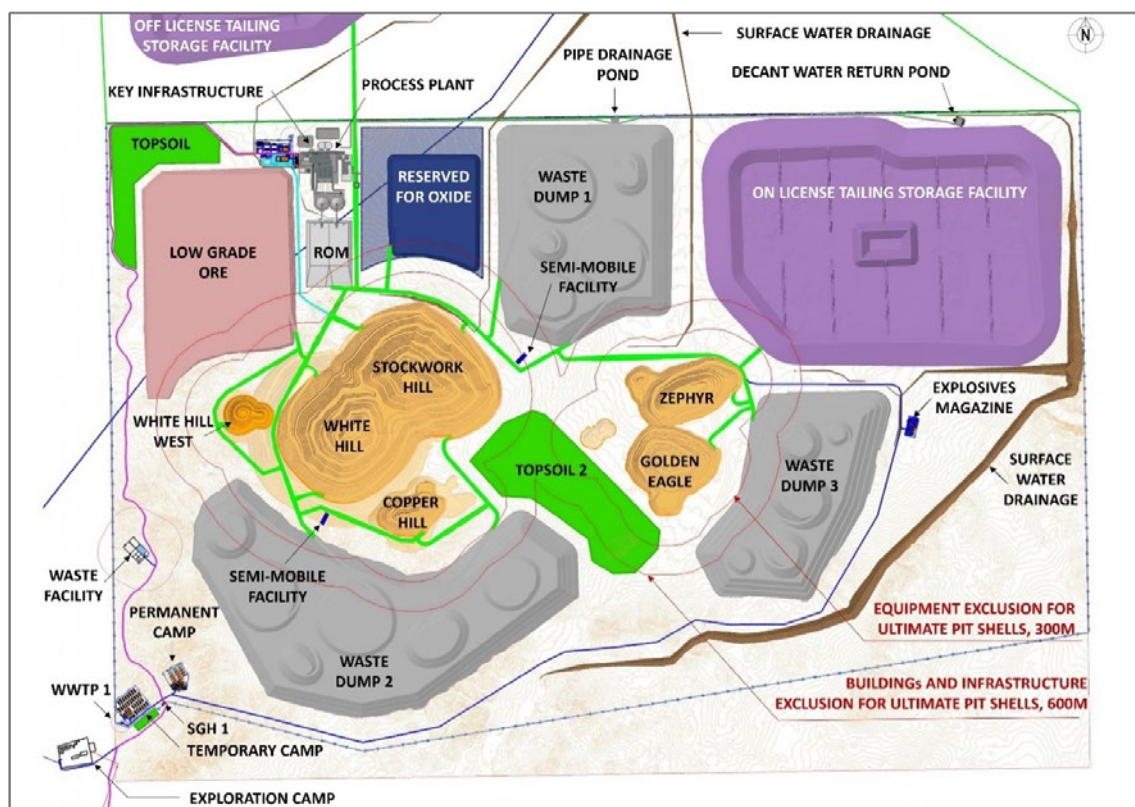


Figure 5: Kharmagtai Mining License and PFS Mine General Arrangement



Figure 6: Kharmagtai PFS Site General Arrangement



MINING OPERATIONS

The operation is configured as an open pit mine to achieve the highest value, lowest cost, lowest complexity, and most rapid development option. The PFS assumes a contract mining model for mining operations.

MINE DESIGN

The PFS assumes mining will be a conventional drill, blast, load and haul operation. The mine plan is based on 10 metre benches consistent with the current Resource model, and results of an initial Standard Mining Unit assessment. Furthermore the equipment selected is appropriate for the planned selectivity and mining production rates for 10 metre benches. Further optimisation of the Selective Mining Unit (**SMU**), including bench height will be addressed in the BFS. Grade control will be undertaken from sampling of blasthole cuttings assayed in the on-site laboratory and also planned targeted grade control drilling during operation.

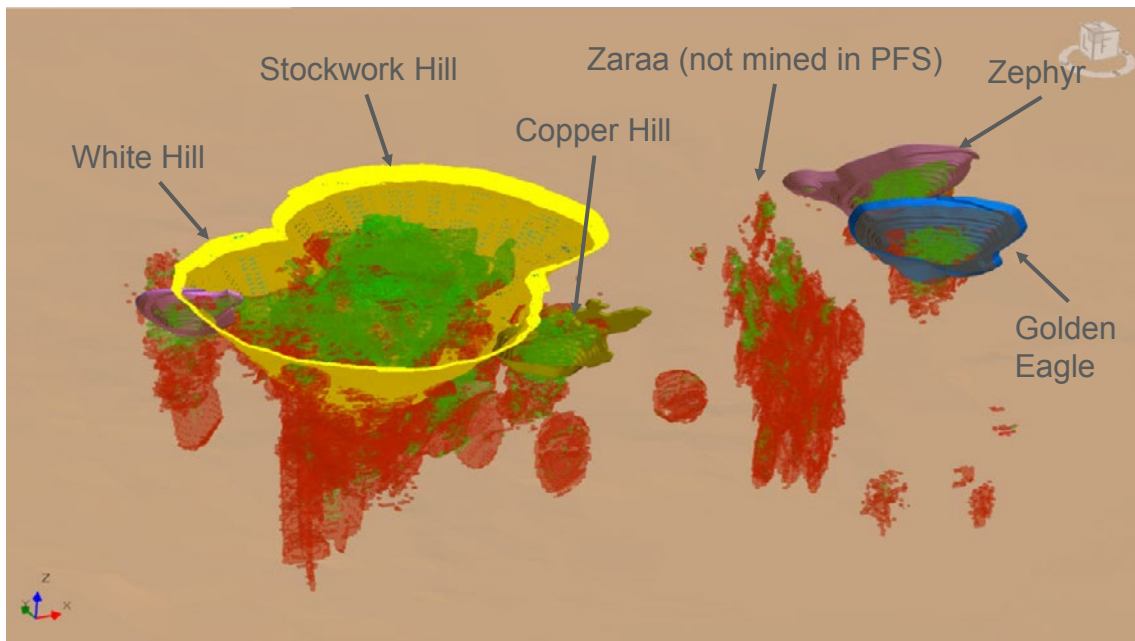


Figure 7: Kharmagtai Pit Relative to Resource

(perspective view looking north; green = Indicated and red = Inferred classification)

MINE EQUIPMENT

The primary mining fleet comprises nominal 600-700t hydraulic excavator (backhoe configuration for mine selectivity and wall control) and large electric rope shovels loading ultra class (nominal 290t capacity) electric drive diesel haul trucks as a well-proven, flexible and efficient match suited to the planned scale of operations. Supplemental primary loading capacity and stockpile reclaim will be provided by 32m³ capacity wheel loaders. A summary of mining equipment and type shown to indicate nominal sizing is detailed below.

Table 7: Mine Equipment

Equipment	Max Units
Haul Trucks - 930E - 5	36
Electric Shovel - 4100XPC AC - Electric	2
Hydraulic Excavator - PC7000 - Backhoe Configuration - Mechanical	2
WE1850 Loader - Diesel Electric Loader	2
DR410i Production Drill - Electric	5
DR410i Production Drill - Diesel	3
DI650i Ancillary Drill	2
Water Truck - HD785 + Water Module	3
Dozer (Track) - D475-8R	6
Dozer (wheel) - WD900-8	3
Motor Grader - WD 955	4
Service Truck - HM400 - Articulated Truck +Module - L&H	2
Service Truck - HM400 - Articulated Truck +Module - Drills	3
Hydraulic Excavator (Support) - PC1250-11R	4

For this PFS, no additional estimate was made for mining dilution and loss due to the gradational nature of the deposit, other than the inherent dilution within the regularised resource model (20m x 20m x 10m) used for mine planning. It was also assumed that with this style of mineralisation the geological model incorporates some level of dilution.

GEOTECHNICAL INVESTIGATION

MineGeoTech was engaged to undertake geotechnical analysis for the project, which included evaluation of geological, structural and alteration environments, material strength, in-situ stress estimation, and rock mass classification from 48 drill holes (from specific geotechnical investigation and resource definition holes). The data collected included geotechnical logging of rock mass conditions (RQD, joint spacing and conditions, and empirical strength estimates) and structural orientations from down hole televiewer. The geotechnical data was analysed for the provided geological and weathering wireframes and used to undertake bench configuration design. The resultant design was tested for overall slope stability using 3D finite element modelling.

Inter-ramp slope angles recommended were typically 39 degrees in transition zones. By deposit in fresh material the slope ranges were from 36 to 48 degrees in Stockwork Hill, 39 to 48 degrees at White Hill, 39 to 52 degrees at Copper Hill, and 39 to 59 degrees at both Golden Eagle and Zephyr. The slope in each zone is set based on local rock types, ground conditions and wall orientation. The ranges are compared to Oyu Tolgoi mining inter-ramp angles of 33 to 49 degrees with an average angle of 44 degrees (RioTinto, 2022). The PFS used a conservative bench configuration for the pit slopes when necessary due to low confidence in some of the geotechnical data (material strength, structural setting due to hole orientation bias, lithology allocation, and hydrogeological conditions) and has developed a plan for additional geotechnical study during the BFS. This has potential upside to support steeper interim pit slopes and final pit slopes via verification of performance of the interim slopes.

PIT OPTIMISATION & OPERATIONS CONFIGURATION

Xanadu engaged Whittle Consulting Pty Ltd (**Whittle**) to perform the pit optimisation study.

Whittle used Dassault Systèmes Geovia Whittle™ software and their own Prober-e software to determine the estimated inventories to be mined, and to develop pit phasing strategies.

The optimisation process uses a set of detailed technical and commercial assumptions to provide guidance for mining and plant production rates, and it generates a set of nested pit shells by varying the “Revenue Factor”: (i.e. metal price assumption). Shells were selected from the set for the intermediate phases and the ultimate pits based on economic evaluation.

Allowance for haul roads was made by using overall slope angles that were flatter than the prescribed maximum slope angle for each domain.

A minimum mining width appropriate for the proposed equipment and consideration of the geometry of mining areas was considered, and the intermediate pit shells adjusted as required.

Mining variable costs differed by deposit, depth and destination. Processing variable cost and recovery were applied equally to all material processed. All fixed/period costs were applied to processing tonnes as the ore processing plant is the primary bottleneck in the operation.

Phase selection and analysis of the highest value mining sequence was performed on the deposits both individually and in combination.

The Stockwork Hill and White Hill phases overlapped considerably. The common areas were treated as a set of wedges to be mined as the deposits’ phases required, depending in which phase was scheduled first.

The result was a total of 23 phases incorporating several wedges across the 5 deposits. An economic pit could not be defined for the Zaraa deposit based on the assumed costs and metal prices.

MINE SCHEDULING, CUT-OFF AND STOCKPILING

Mining Plus prepared PFS level pit designs based on the selected shells (or cutbacks) and used Deswik software to schedule the material in each cutback. The Deswik software was used to focus on material blending and stockpile utilising the Deswik “Blender” module, with a detailed assessment of primary loading and haulage equipment requirements by year. This was completed using Deswik LHS module to determine annual truck requirements, considering detailed haul routes to all destination, including waste rock to be delivered to the two proposed TSF locations.

Blocks on each bench of each pit phase were consolidated into “bins” by Mineral Resource Category (Indicated, Inferred), rock type (oxide, sulphide) and by a range of copper equivalent grades in steps of 0.09% up to 1.5%, with marginal cut-off at 0.13% CuEq.

Deswik determined the multi-mine mining sequence and rate, elevated cutoff to the plant by “bin” varying over time, and stockpiling of lower grade material for processing later, to maximise NPV using the Study assumptions and constraints.

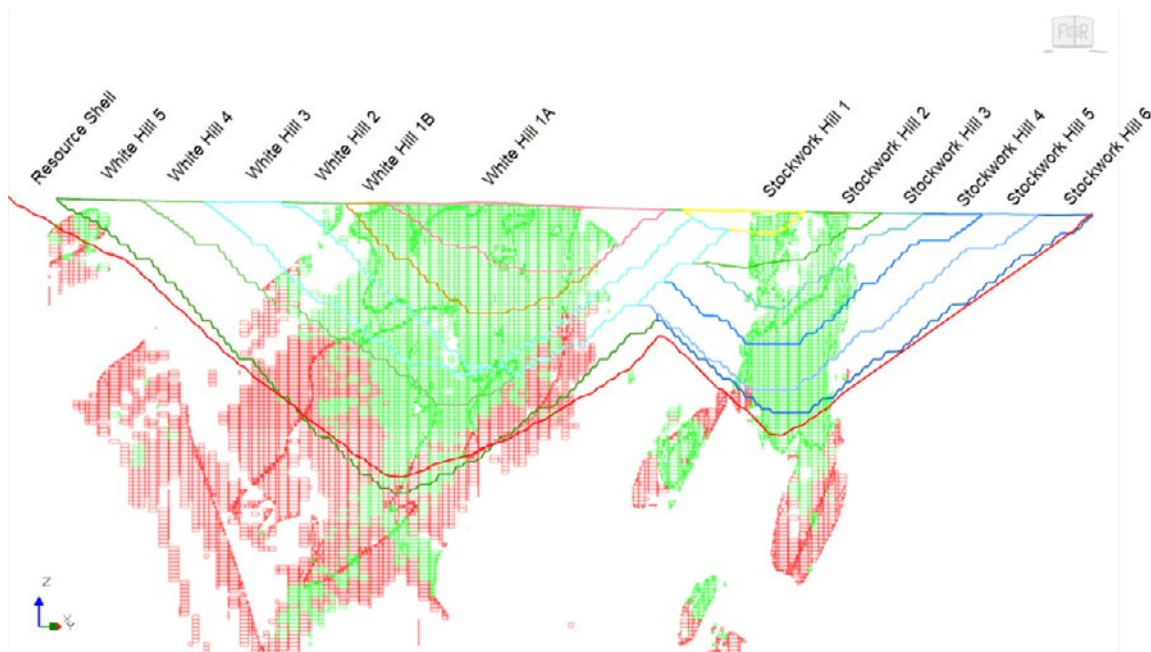


Figure 8: Kharmagtai Pit Staging

(long section looking north; green = Indicated and red = Inferred classification)

MINE DESIGN & ENGINEERING

The final mining capacity is staged from a peak rate of 100Mtpa to 140Mtpa with a vertical rate of advance limited to 10 benches per year (this constraint was not hit) and a processing capacity staged from 26Mtpa to 52Mtpa.

Sulphide ore is processed through the concentrator, while oxide mineralisation is moved to a designated stockpile for potential future leach processing. A limited amount of gold-rich oxide is processed in a CIL circuit.

The first eight years of production (Stage 1) predominantly uses material classified as Indicated (89% of the mine schedule), with other Inferred material stockpiled for processing over the remaining 21-year mine life (Stage 2). Approximately 73% of the 29-year LOM Production Target is in the Indicated Mineral Resource category and 27% is in the Inferred Mineral Resource category.

The outcome for the selected case is a multi-pit schedule mining 1,780Mt of waste, processing 1,270Mt of ore over 29 years of production to produce 2.2Mt of copper in concentrate and 4.8Moz oz of gold in concentrate and doré.

Higher-grade ore is prioritised by using a varying elevated cut-off grade to the plant, and by year 9 of production up to 270Mt are stockpiled for processing in later years. There is sufficient capacity within the footprints of the ore stockpiles and future waste dumps for this capacity of ore. The peak stockpile is depleted from this year until the end of operations.

WASTE ROCK MANAGEMENT

The Kharmagtai Project comprises extensive systems of open pits, waste rock dumps (**WRD**), tailings storage facilities ROM pad, crushing and processing area, and associated roads and infrastructure, as shown in the Kharmagtai PFS Site General Arrangement Figure in this document.

The waste dumps will be constructed such that Potentially Acid Forming (**PAF**) materials will be encapsulated by Non-Acid Forming (**NAF**) material. The as-built waste dumps are designed with a slope of 37 degrees and the final landforms with a shallower slope of 22 degrees to allow for mine closure. Further analysis of the final slope angle is planned as part of further work in the BFS.

An environmental geochemical assessment to support the PFS was conducted based on the available environmental geochemistry data to allow for an initial Acid Rock Drainage (**ARD**) classification of the waste rock material which was used to inform the design of waste management facilities, waste handling and management.

The exploration assay data set was used for the preliminary classification of the Kharmagtai waste rock material. This is a large data set and was deemed to be of a very good quality for this stage of study. The acid-base properties of the rock samples were calculated from the sulphur and calcium assays. This dataset consists of assay data for about -133,000 samples taken at 2 m intervals from exploration boreholes. The sulphur content and the Neutralisation Potential Ratio (**NPR**) were used for the waste classification. The classification of waste AMD developed above was populated into the resource model to be used in mine planning and waste rock management.

A conceptual strategy of PAF encapsulation on the WRD was developed. It is recommended that all high sulphur waste rock (Total S > 1%S) as well as PAF-MS should be placed in the core of the WRD (i.e. isolated from direct contact with the atmosphere). The core should be encapsulated with lower AMD risk material (low sulphur waste rock: Total S < 0.3%S, NAF-MS and pNAF-MS).

The PFS mine schedule indicated that approximately 63% of the waste rock material is classified as high sulfur waste rock or PAF-MS. Material earmarked for encapsulation (low sulfur, NAF-MS, pNAF_MS) comprises approximately 37% of waste rock as shown in the Figure below. During the PFS checks completed, it was confirmed, there is overall adequate material to achieve required encapsulation with recommendations for further detailed scheduling of waste rock, and dump design recommended in further studies.

Based on the evaluation of the available geochemical data, only a conceptual waste rock management approach can be provided at this stage of the project. A more detailed Mine Waste Management Plan (**MWMP**) should be developed for the BFS, including laboratory testwork to validate and revise material classification.

A conceptual-level closure cost estimate of earthworks associated with the closure and rehabilitation of planned waste rock dumps, stockpiles and infrastructure, was completed as part of the PFS. The estimate is developed as part of an estimate of potential financial obligations following the immediate cessation of mining activities should this occur during planned mining activities.

The high-level analysis encompasses major cost components associated with bulk earth movements for dozing waste dump batters, ripping, developing access roads, capping the tailings facilities, spreading topsoil, and seeding. Mineralised stockpiles including the ROM pad, are assumed to have been processed. The Oxide dump is assumed not to have been processed and will require rehabilitation. The processing plant and all buildings are assumed to have been removed.

At the time of this estimate the future land use, rehabilitation objectives and permitting guidance has not defined, accordingly the estimate is based on generally practised (Globally) industry standards, to return the mine site to a use similar to its current use prior to mining.

The waste dumps will be profiled to be similar to regional topography based on topographical data, and other information shared by the Xanadu project stakeholders, and also considering observations from the completed site visit by the mining competent person on 15-16 April 2024.

The topsoil and NAF mine waste balance will need to be monitored during operations such that sufficient sources are readily available to implement the coverages in this estimate. Further studies such as a feasibility study should also include more detailed scheduling of both topsoil and NAF mine waste rock, to ensure movements are adequate and if stockpiling of material may be required.

MINE PRODUCTION

Mine production schedules are shown in the following table and charts. Mining is focused on delivering the higher-grade ore to the plant early in the mine life, while stockpiling lower grade ore. The peak mining rate in the early phase is 100Mtpa which is later expanded to 140Mtpa to match the process plant expansion. Throughout the mine life a low waste strip ratio is maintained leading to a LOM average strip ratio of 1.4:1. Total waste mined is 1,780Mt, total ore mined and processed is 1,270Mt.

Table 8: Mine Production

Area	Units	Stage 1 (8 years)	Stage 2 (21 years)	PFS LOM	PEA LOM ⁹
Waste Mined (include pre-strip)	Mt	280	1,500	1,780	840
Ore Mined	Mt	480	790	1,270	760
Strip Ratio	waste:ore	0.6:1	1.9:1	1.4:1	55%
% Indicated in Mine Plan	Mt	88%	66%	73%	1.1:1
% Resource Mined ¹⁰	%	23%	39%	62%	68%
% Indicated Open Cut Resource Mined	%	37%	62%	99%	NR

Annual mine production by pit is shown in the following figure, including lower grade ores sent to stockpile. This highlights the first phase and second phase to match the process plant expansion. During most years, mining activities occur in two or three pits concurrently. Only one pre-strip year is required (2027) due to the shallow nature of the sulphide mineralisation.

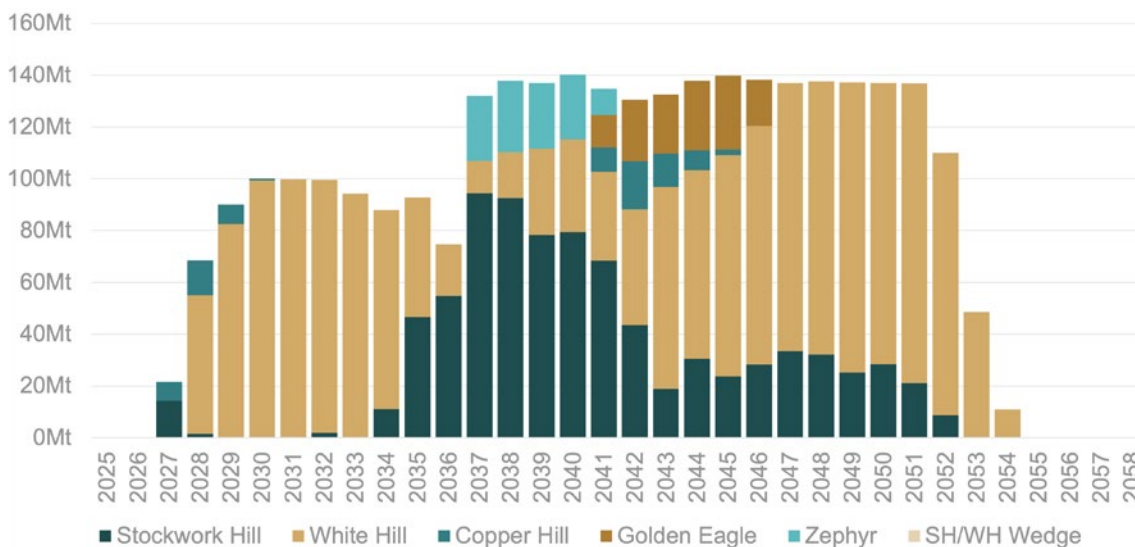


Figure 9: Mining Schedule by Pit

9 ASX/TSX Announcement 6 April 2022 – Scoping Study Kharmagtai Copper-Gold Project; and ASX Announcement 20 June 2022 – NI43-101 Preliminary Economic Assessment Technical Report

10 ASX/TSX Announcement 14 October 2024 – Kharmagtai Resource & Reserve

The following figure shows mine production by waste and ore, including lower grade ore sent to stockpile. Noting that the ore mined is often above or below the annual plant processing rate with the balance achieved by adding or drawing from stockpiles.

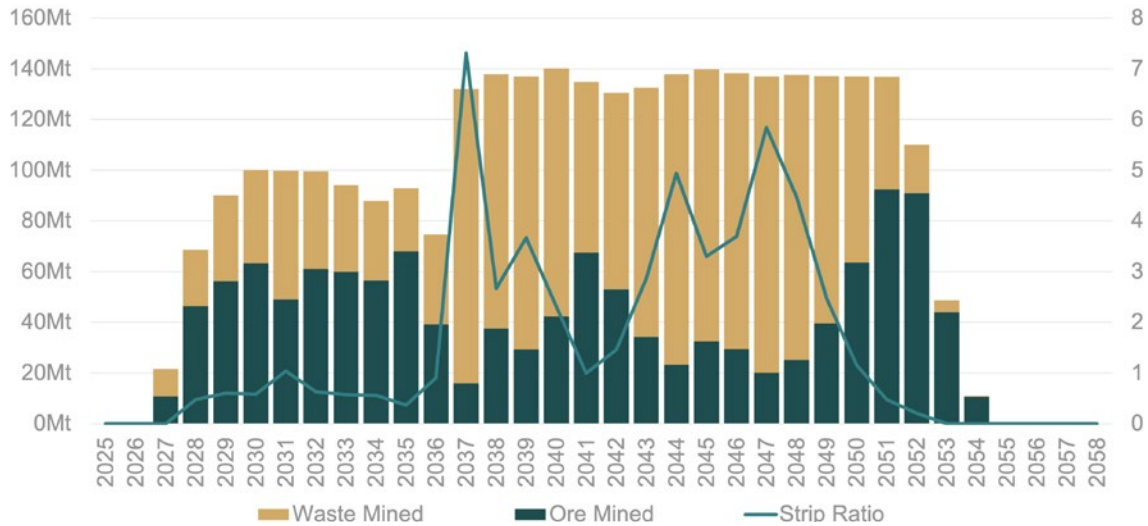


Figure 10: Mining Schedule by Waste vs Ore

The following figure shows total ore mined by resource category, including lower grade ores sent to stockpile.

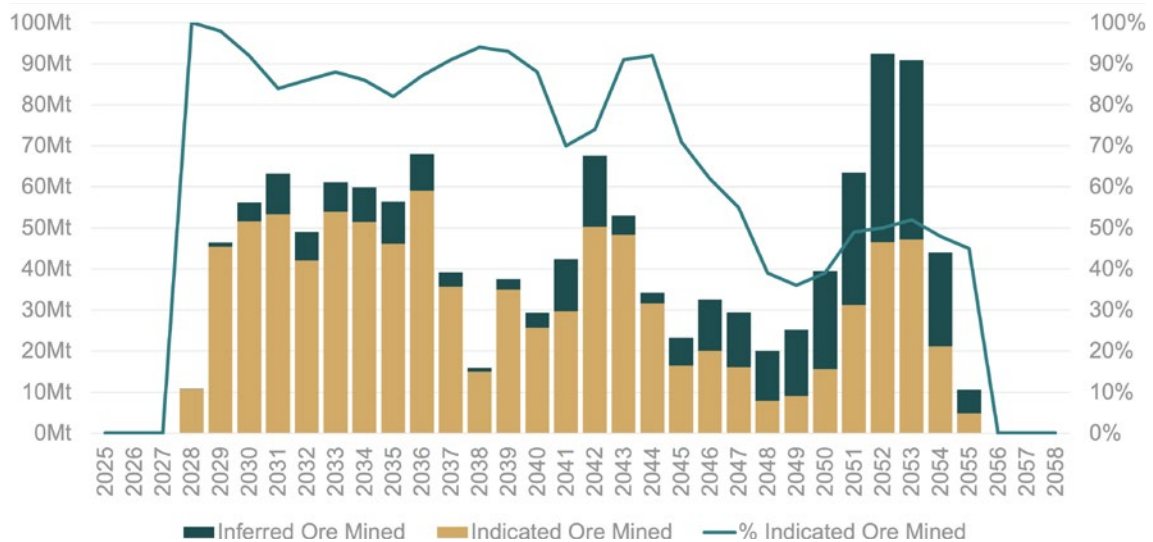


Figure 11: Mine Schedule - Ore Mined by Resource Category

The following figure illustrates the movement of ore to and from the stockpile and the overall stockpile balance over time, which peaks at ~270Mt.

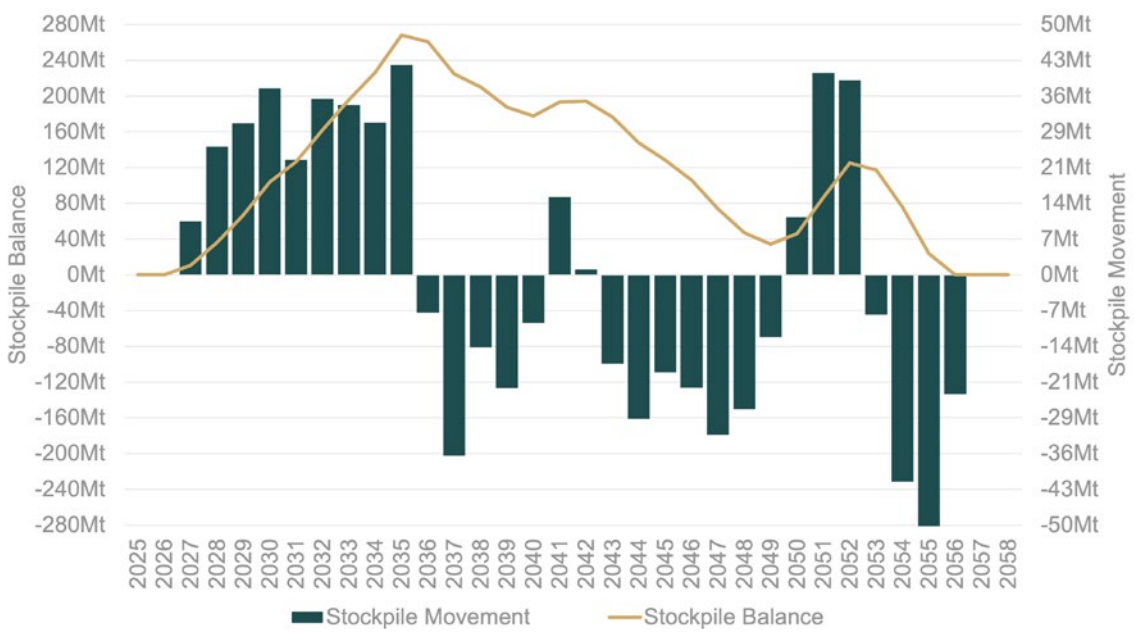


Figure 12: Low Grade Stockpile Movement & Balance



METALLURGY

Metallurgical testwork has been completed on the copper-gold deposits located within the Kharmagtai Porphyry Project¹¹.

Key objectives of this program included:

- Ore hardness and comminution characteristics
- Optimal grind size
- Regrind size
- Gravity recoverable gold
- Amenability to gold and copper recovery by froth flotation
- Amenability to gold cyanidation via treatment of cleaner tailings stream and high-grade oxide feed

The goal of the program was to develop an optimal ore processing flowsheet for the Project. The testwork program was developed and supervised by metallurgical consultant, Leo Consulting. Principally, the testwork was performed at ALS laboratories in Perth, with some specialist work by others.

MINERALOGY

The major sulphides present in the samples are chalcopyrite, minor bornite and pyrite as the main sulphide gangue mineral; non-sulphide gangue includes quartz, feldspar, chlorite and mica. Chalcopyrite was relatively fine grained in comparison to pyrite and other gangue minerals. Gold appears to be strongly associated with chalcopyrite with a minor pyrite association. The proportion of gravity recoverable gold increases at higher grade.

COMMINUTION TESTWORK

Comminution testwork shows Kharmagtai ore is both hard and competent, with all samples amenable to semi-autogenous grinding. On average, the combined deposit A x b values (a measure of competency) ranged from 34.2 to 41.8 and is classified as hard.

The crusher work index is soft to medium, while the ball mill work index is considered very hard. The rod mill work indices measured between 21.2 to 24.1kWh/tonne indicating all samples are hard and competent. Abrasion ranged from low to medium.

¹¹ ASX/TSX Announcement 18 September 2024 – Kharmagtai PFS Metallurgy Results

GRAVITY GOLD TESTWORK

Master composite samples were passed through a Knelson Concentrator, followed by concentrate amalgamation to differentiate between free gold and gold associated with sulphides. On average, 42.3% of gold reported to the gravity concentrate, including 12.6% free gold classified as coarse and 5.4% free gold classified as fine and not recoverable in the gravity circuit. Following variability testwork a PFS gravity recovery was determined to be 10%.

FLOTATION TESTWORK

Flotation testwork determined the circuit arrangement and flotation conditions by testing several master composites and 75 variability samples, resulting in average recovery to concentrate of 81% Cu and 63% Au for Stage 1 and 79% Cu and 61% Au for Stage 2.

The optimum primary grind was determined to be a P80 of 150 μ m with an optimal rougher concentrate regrind P80 of 18 μ m and cleaner pH of 11. A cleaner regrind size was selected to be a P80 of 18 μ m.

Variability testing on 75 samples indicated copper rougher recoveries in the range of 85-90%. This was followed by locked cycle tests on two Master Composites and representative deposit composites. The flotation flowsheet that provided a good overall performance with low reagent dose is shown below.

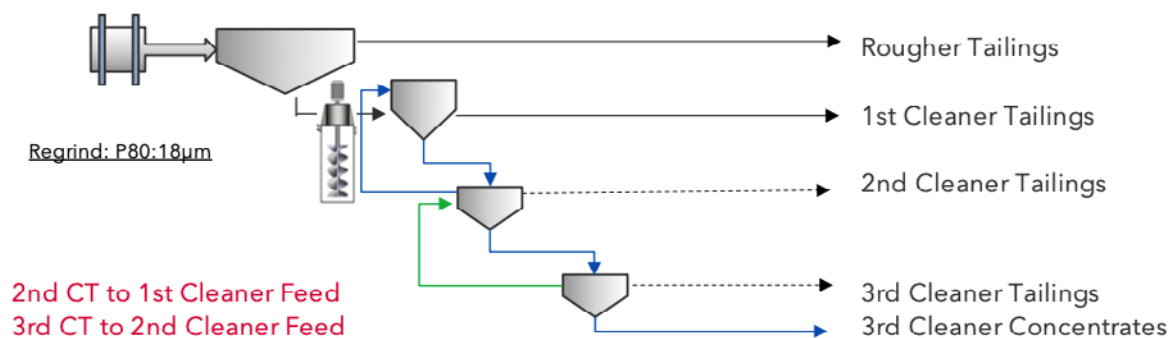


Figure 13: Flotation Flowsheet used for Locked Cycle Tests

Dilution cleaner testing was then undertaken simulating Jameson Cells, marketed by Glencore Technology Pty Ltd (Glencore), which successfully upgraded concentrate grade by up to 8% Cu and up to 11g/t Au, as well as improving copper and gold recoveries. Based on these results, a hybrid cleaner circuit was adopted for the process flowsheet design using the Jameson Cell alongside a conventional flotation cleaner circuit.

COPPER CONCENTRATE

The results show that the copper concentrate is of good quality with strong gold credit (typical terms >90% payable for gold >1g/t and increasing payable with grade), a good silver credit (typical terms >90% payable for contained silver at grades >30g/t) and very low in penalty elements. Note that silver is excluded from project economics in this report, as it is not yet included in the Kharmagtai Resource.

The Copper Hill concentrate sample assayed at 0.27% arsenic, and if it were to exceed 0.3% it would be considered complex, with a penalty chargeable. However, given Copper Hill is smaller relative to the much larger White Hill and Stockwork Hill deposits, it will be blended with concentrates from these other deposits.

Table 9: Copper Concentrate Parameters

Element	Units	Concentrate Sample			
		Master Composite	Copper Hill	Stockwork Hill	White Hill
Cu	%	22.0	22.3	24.8	30.0
Au	g/t	18.6	12.3	21.8	INS
Ag	g/t	76	118	83	46
Mo	ppm	226	10	260	530
S	%	38.5	39.3	37.9	33.6
SiO ₂	%	1.7	1.5	1.4	2.5
Penalty Elements					
As	%	0.05	0.27	0.07	0.03
Bi	%	0.001	0.006	0.007	0.003
Cd	ppm	3.3	15	<5	<5
Cl	%	<0.01	<0.01	0.01	<0.01
F	ppm	50	100	50	50
Pb	%	0.05	0.02	0.01	0.06
Hg	ppm	4.4	INS	6.9	4.5
Sb	ppm	190	700	553	74
Zn	%	0.21	0.30	0.06	<0.01

INS = Insufficient Sample

GOLD CYANIDATION

Flotation tests indicated that 12% of Au remained in flotation cleaner tails. Cyanidation tests were undertaken to determine a viable method to recover this metal via Carbon In Leach (CIL).

CIL testwork extracted up to 73% of the gold from treating the first cleaner tailings from flotation locked cycle tests with direct cyanidation. In addition, 12 to 32% of the copper leached with 2 to 5kg/t cyanide consumption. Leaching was relatively quick, with completion after 12 hours.

This program also ran a series of tank leach tests on high-grade oxide samples. Cyanide and GlyCat™ extracted up to 77.3% of gold and up to 26.6% of copper, consuming 1.5kg/t cyanide and 2kg/t glycine over 48 hours.

Based on this testwork, the PFS passes the flotation cleaner tailings through a 2Mtpa CIL circuit, achieving approximately 64% recovery of gold in cleaner tailings through CIL, and adding an average of 7% additional gold sulphide recovery to doré in the flowsheet. For the PFS, the impact of leaching on copper recoveries has been conservatively excluded.

OVERALL RECOVERIES

The overall recovery from the sulphide feed was estimated by combining the locked cycle test copper and gold recoveries to concentrate and assumed a further 10% recovery to doré for gravity gold recovery prior to flotation, plus an additional 7% recovery to doré from leaching of the cleaner tails (Figure 14). Jameson Cells are then used as dilution cleaners to upgrade concentrate. Additional gold recovery to doré is expected from the leaching of gold-rich oxides (not depicted below). Considering these metallurgical results, including the 75 flotation variability tests, the overall PFS recovery assumptions have been established at average 82% of copper and 81% of gold in the sulphide processing feed to saleable products, incorporating variations in recovery with material feed over the LOM.

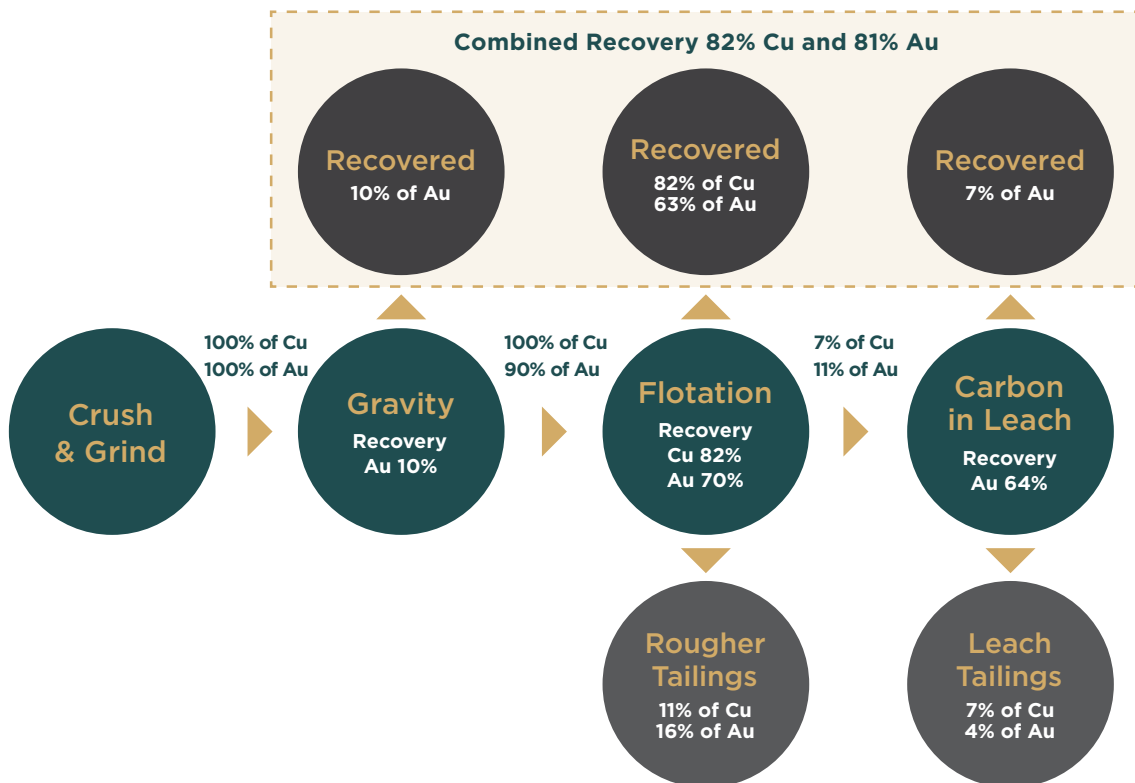


Figure 14: Sulphide Ore Average Recovery by Plant Stage

(numbers may not add due to rounding)

MINERAL PROCESSING

DRA Global completed the PFS process engineering study for the Project demonstrating a conventional, low risk copper concentrator producing a copper-gold concentrate and gold doré is appropriate.

A range of options were assessed in concert with the metallurgical test program, including the following, to determine the final equipment selection:

- Mill type comparing SABC twin pinion, SABC wraparound, and HPGR
- Mill configuration in one or two stages, with one or two mills per stage
- Grind size optimisation
- Flotation using conventional, dilution cleaners, coarse flotation and flash flotation
- Oxide treatment through heap leach, CIL and as waste

The PFS design for the concentrator was based on two stages, with a Stage 1 throughput rate of 26 Mtpa, fully duplicated in Stage 2 to 52 Mtpa. The throughput rates for Stage 1 and Stage 2 were selected during the optimisation phase of study using Whittle Prober software, based on technical and economic inputs provided by DRA Global and Mining Plus. Prober simultaneously optimised mining and processing rates to maximise total project value.

The proposed process flowsheet uses a conventional primary crusher, grinding via SAG mill, ball mill, crushing (SABC), conventional copper flotation circuit, and CIL for flotation cleaner tails and limited gold-rich oxide ore. The Stage 1 concentrator flowsheet includes the following unit processes:

- Primary crushing.
- Crushed ore stockpile.
- Primary and secondary grinding (two parallel trains).
- Gravity gold concentration.
- Gold processing to produce gold doré.
- Rougher flotation.
- Regrind of rougher flotation concentrate.
- Three stages of cleaner flotation.
- Dilution cleaner using Jameson Cells
- Leaching of cleaner tails via CIL
- Concentrate thickening and filtration to produce copper-gold concentrate.
- Tailings thickening.
- Water services.
- Reagents.

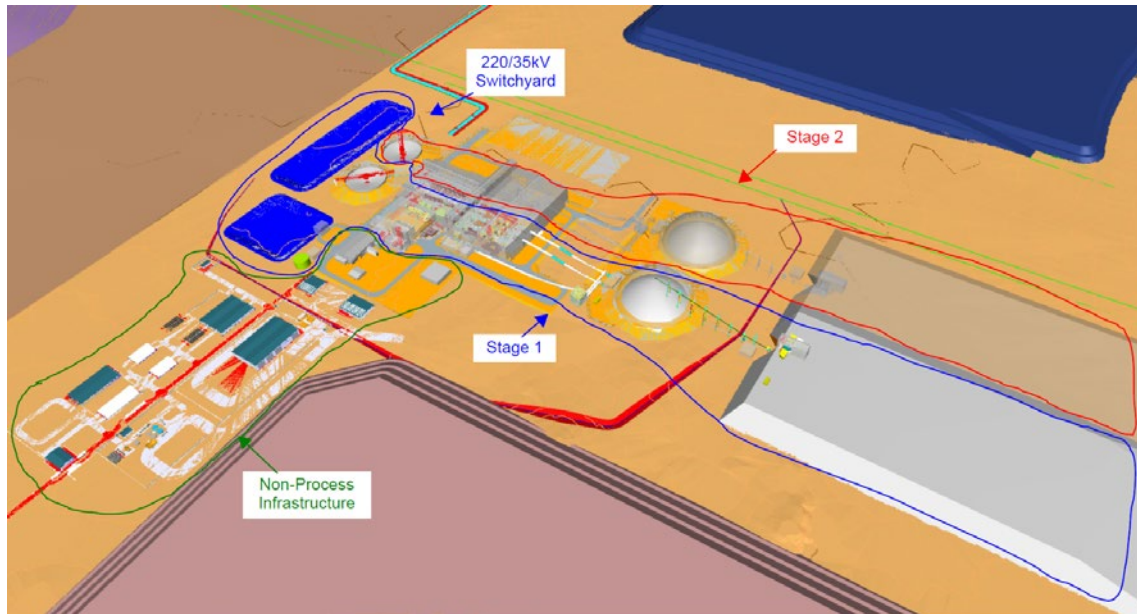


Figure 15: Process Plant Layout (perspective view looking northwest)

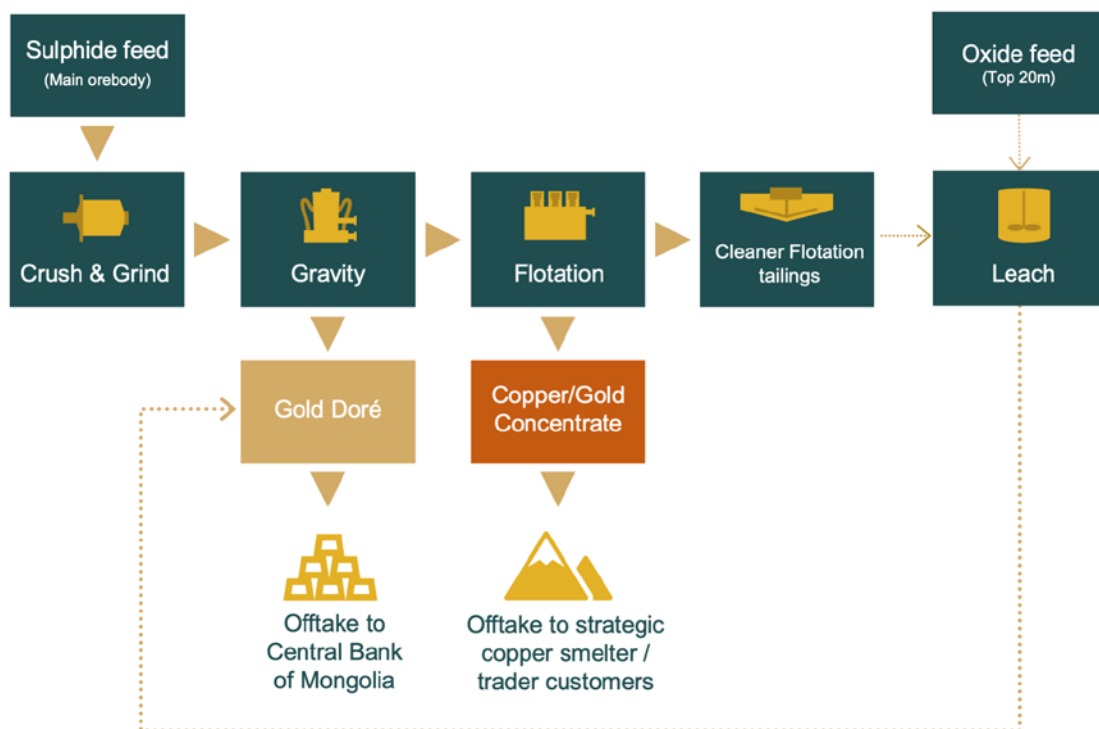


Figure 16: Simplified Process Flow Diagram

Table 10: Major Plant Equipment

Area	Stage 1	Stage 2
Primary Crushing	Gyratory 70" x 89"	Gyratory 70" x 89"
SAG Mill	2 x 20MW	2 x 20MW
Ball Mill	2 x 20MW	2 x 20MW
Gravity Concentrator	2 x 70"	2 x 70"
Rougher Flotation	8 x 630m ³ tank cells	8 x 630m ³ tank cells
Jameson Cell	7.4m diameter x 6.1m high	7.4m diameter x 6.1m high
Regrind Ball Mill	1 x 12MW	1 x 12MW
First Cleaner Flotation	3 x 200m ³ tank cells	3 x 200m ³ tank cells
Cleaner-Scavenger Flotation	2 x 200m ³ tank cells	2 x 200m ³ tank cells
Second Cleaner Flotation	3 x 70m ³ tank cells	3 x 70m ³ tank cells
Third Cleaner Flotation	4 x 38m ³ u-shaped cells	4 x 38m ³ u-shaped cells
Concentrate Thickening	24 mØ high rate	
Concentrate Filtration	Plate and frame, 432m ²	Plate and frame, 432m ²
Tailings Thickening	74m Ø high rate	74m Ø high rate

TAILINGS DISPOSAL

The tailings storage facility (TSF) for the first 12 years will be located on the mining lease approximately 6km away from the concentrator. The subsequent 17 years of production will utilise an off-lease TSF. The starter embankments and subsequent downstream lifts will be constructed from mine waste using dedicated equipment, with the mine schedule including delivery of the mines waste rock to the TSF areas to allow construction of the embankments.

The two TSFs will be constructed and operated in compliance with international standards. It was determined through testwork that the tailings are not acid forming, and consequently the TSFs will not need synthetic liners. The TSF design does not require a basal liner and incorporates an underdrainage recovery system to recover any potential water seepage. Design and engineering for the Kharmagtai TSF was completed by Knight Piesold Consulting.

Closure of the TSF was considered as part of the overall closure plan and cost estimate, including covering the TSF with topsoil.

CONCENTRATE HANDLING

The flotation concentrate will be thickened, filtered and placed into containers. The containers will be trucked to the rail-siding located 15km away and transported to smelters by rail.



Figure 17: “Kharmagtai” Railway Station and Dedicated Siding

PLANT PRODUCTION

Concentrator production schedules are shown in the following table and charts.

Table 11: Concentrator Production

Area	Units	Stage 1 (8 years)	Stage 2 (21 years)	PFS LOM	2022 PEA LOM ¹²
Ore Processed	Mt	210	1,060	1,270	760
Avg Cu Grade Processed	%	0.28%	0.20%	0.21%	0.21%
Avg Au Grade Processed	g/t	0.24	0.13	0.15	0.18
Concentrate Produced	kt	2,100	8,100	10,200	5,900
Avg Concentrate Production	ktpa	270	330	310	200
Concentrate Cu Grade	%	23%	21%	22%	25%
Concentrate Au Grade	g/t	15	10	11	11
Cu Recovery to Concentrate	%	83%	82%	82%	90%
Au Recovery to Concentrate ^a	%	64%	63%	63%	48%
Au Recovery to Doré (Gravity) ^a	%	10%	10%	10%	25%
Au Recovery to Doré (CIL) ^a	%	8%	7%	7%	0%
Au Recovery Total ^a	%	82%	80%	81%	73%
Cu Produced Total	kt	500	1,700	2,200	1,500
Au Produced from Sulphide	koz	1,300	3,400	4,700	3,300
Au Produced from Oxide	koz	70	0	70	0
Au Produced Total	koz	1,370	3,400	4,770	3,300
Avg Copper Production	ktpa	60	80	75	50
Avg Gold Production	kozpa	170	165	165	110

^a recovery from sulphide only, excludes oxide feed direct to CIL

¹² ASX/TSX Announcement 6 April 2022 – Scoping Study Kharmagtai Copper-Gold Project; and ASX Announcement 20 June 2022 – NI43-101 Preliminary Economic Assessment Technical Report

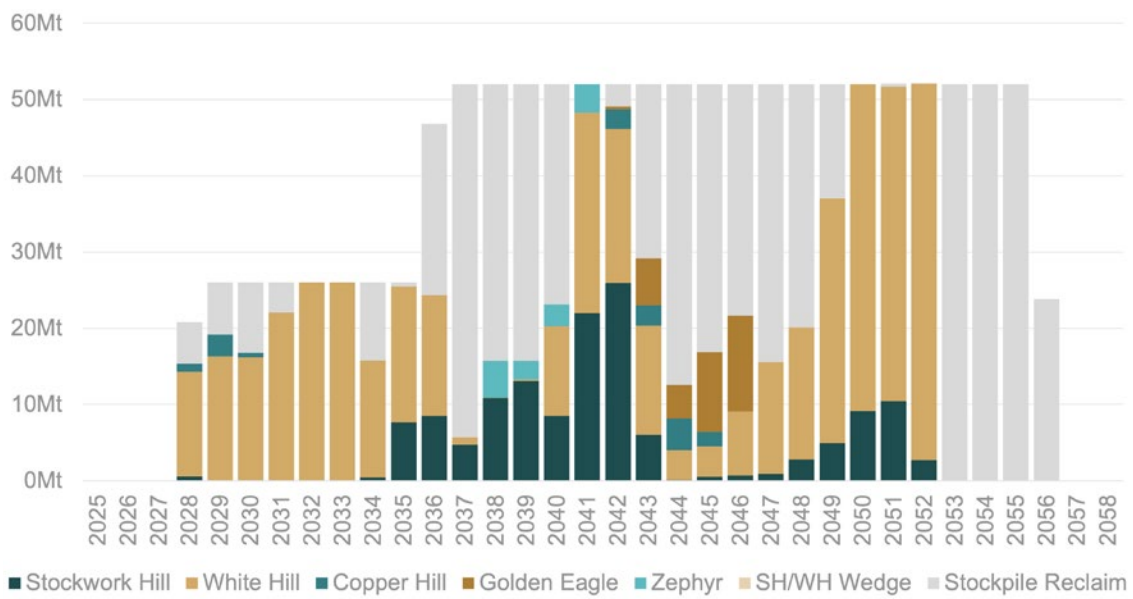


Figure 18: Annual Processing by Pit



METALS PRODUCTION

Annual plant production is shown in the following figures for copper grade and copper production and a second figure for gold grade and gold production. Gold product is the combination of gold in copper concentrate and gold bullion produced from the gravity circuit and CIL circuit. The split of these two gold streams is 77% gold recovered in concentrate and 23% recovered with the gravity circuit or in CIL and produced as gold bullion.

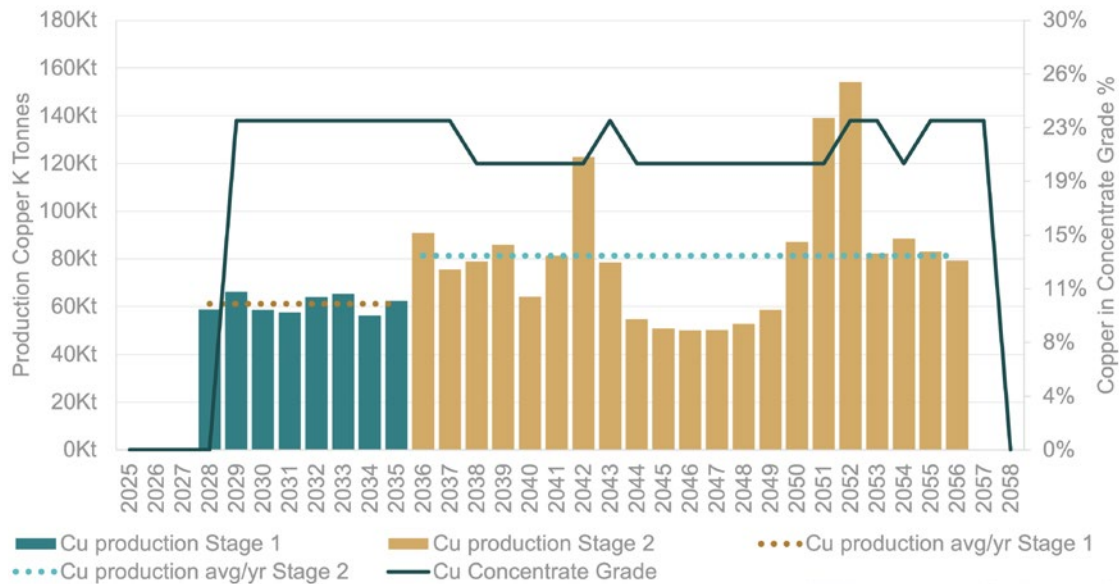


Figure 19: Annual Copper Production

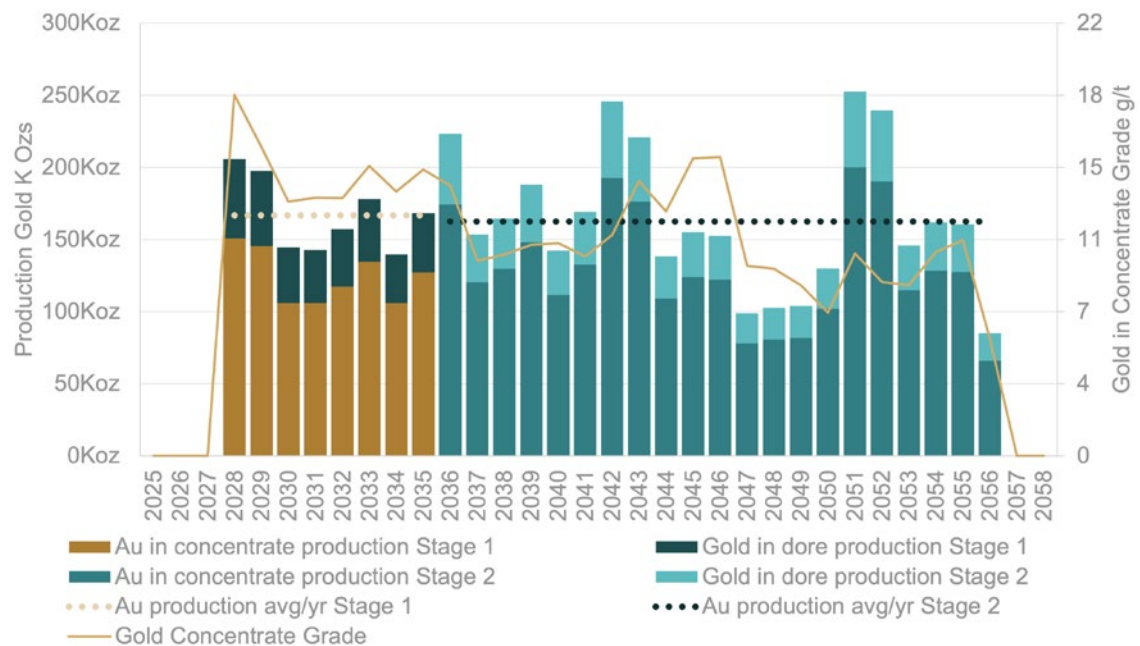


Figure 20: Annual Gold Production

INFRASTRUCTURE AND SERVICES

Kharmagtai is located 420km southeast of Ulaanbaatar (UB), the capital of Mongolia, and 60km from the regional centre of Tsogttsetsii that is serviced by flights from the capital.

Currently, road access to site entails a 6-hour drive from UB on a sealed road followed by a 1.5-hour drive for the last 60km on an unsealed road. Within the region there are already two major mining projects:

- Tavan Tolgoi coal mine 65km to the southwest; and
- Oyu Tolgoi copper gold mine 125km to the southeast.

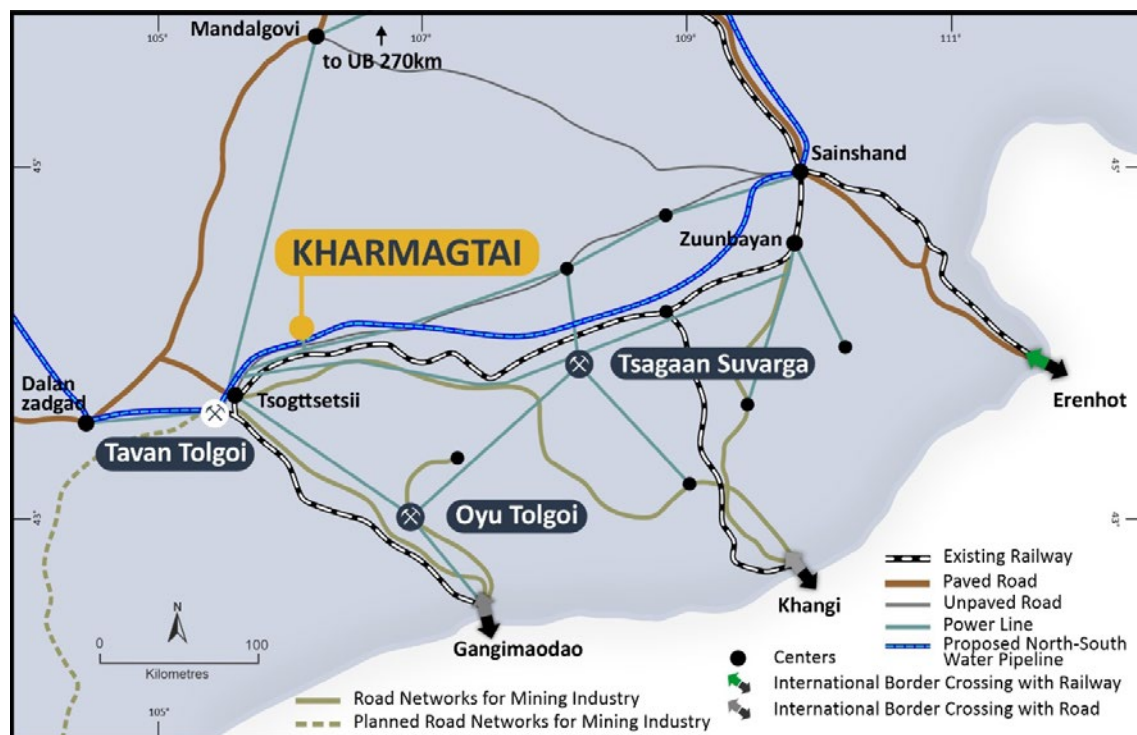


Figure 21: Kharmagtai and South Gobi Regional Infrastructure

LOGISTICS

The site is located 10km north of a sealed road from Tsogttsetsii and the 416km rail line that connects Tavan Tolgoi to the Trans-Siberian rail line at Sainshand.

The site access road will connect to both the road and the railway. The railway will be used to ship the copper-gold concentrate from an existing rail siding located within 15km of site. The road is expected to be the primary means of transporting fuel, equipment and other supplies from nearby regional centres.

Inbound logistics is expected to utilise “dry ports” existing or proposed along Mongolia’s southern border with China. Freight for the project will go directly through Ulaanbaatar for consolidation and forwarding to site.

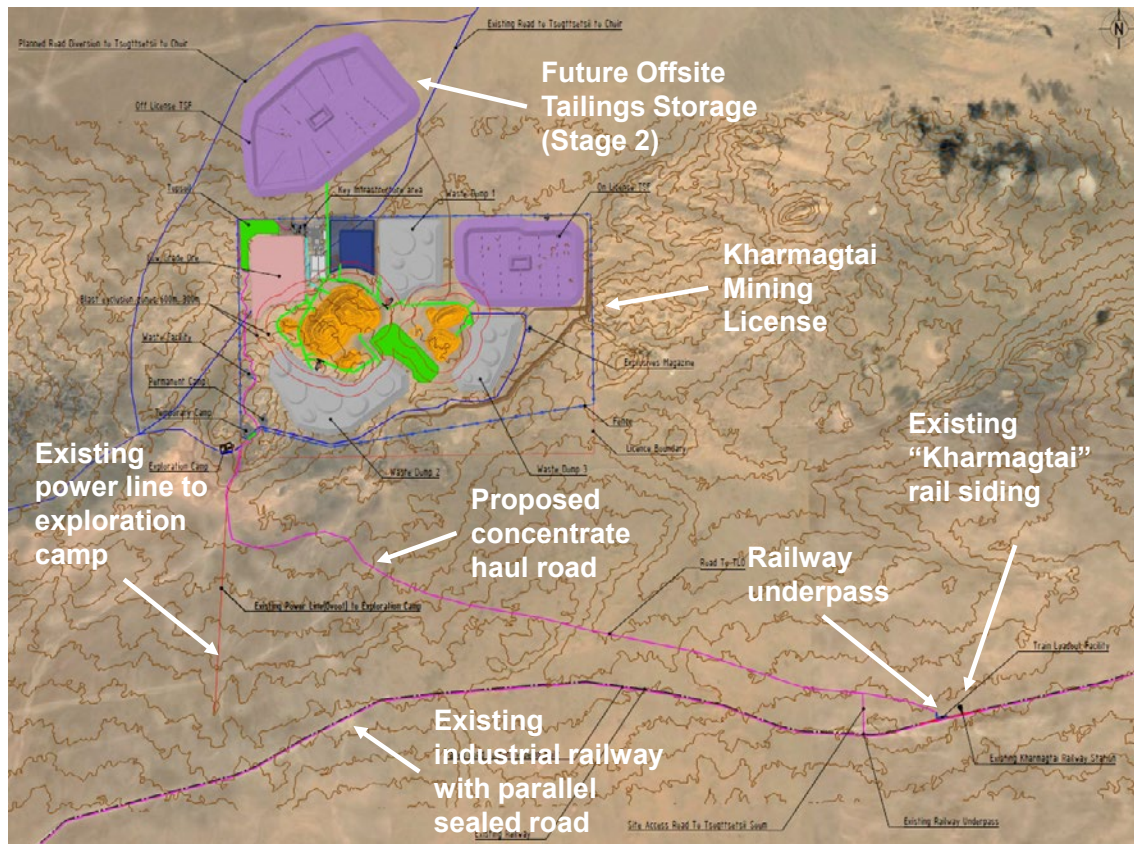


Figure 22: Transport Infrastructure Near Kharmagtai

POWER

The site power requirements are estimated to be approximately 100MW for the initial 26Mtpa operation and a combined 200MW for the expanded 52Mtpa operation.

Construction power will be sourced from the local grid using an existing 35kV transmission line during construction. The transmission towers were built for this purpose and will be upgraded with additional lines as required prior to construction.



Figure 23: Kharmagtai Grid Connection (Established 2023)

The mine operations power options study was completed by PowerChina. The study selected a supply based 50-50 from renewable sources and grid supply over a 12-month period with a net wholesale power price of \$0.08/kWh between renewable and grid sources.

Renewable power (solar and wind) will be constructed and operated by a 3rd party with enough capacity to supply full demand at maximum output. This is anticipated to include a 134MW wind farm and a 68MW solar farm and provide lower operating cost than grid power, which encourages maximizing its use. PowerChina and the PFS team independently verified that there was strong interest from third parties in a build-own-operate style contract based on a long-term offtake contract, noting Kharmagtai's PFS mine life of 29 years.

Grid power connection from Inner Mongolia via the nearby (approximately 70km) Tavan Tolgoi node will be constructed by a separate 3rd party also under long term contract to supplement solar and wind power. The grid power connection to Kharmagtai will also have enough capacity to supply the full site demand. The source power from Inner Mongolia to Tavan Tolgoi node is planned to be provided via two 220kV lines from the SS node nearby the Oyu Tolgoi copper mine.

The grid power connection requires a simpler path for permitting and construction and serves as risk mitigation in the event that renewable power permits and construction take longer than anticipated.

WATER

The South Gobi region has significant potential water resources which could meet all known demand including Kharmagtai projections. These lie in deep, non-potable industrial aquifers. While a large portion of these resources are not yet claimed, there are also third parties who hold resources but are not utilising them. The Kharmagtai project has focused on both new and third-party sources.

The PFS has identified a material risk to the project water supply. The PFS has partially mitigated this risk and that will continue to be a core focus of the BFS, with a forward work plan developed. The project has a substantial water resource established nearby, but significant additional make-up water will be required to be identified to meet full Stage 1 demand.

Kharmagtai requires approximately 350l/s make-up water supply for Stage 1, which is roughly doubled for Stage 2.

The Stage 1 water supply is expected to be sourced from deep aquifers in multiple basins near the Project. Stage 1 water will be pumped to site via pipelines, with raw water used for ore processing and a water purification plant to provide potable water.

Following the PFS, the Project holds rights to an aquifer approximately 8km from Kharmagtai which can meet approximately one third of the project Stage 1 requirements. This was originally established as part of Kharmagtai mining license application.

The remaining two thirds of Stage 1 requirements, plus contingency to derisk the project, will be met via a detailed technical and commercial work plan during 2025. The commercial plan will engage with other water rights holders who have underutilised resources and will prioritise based on environmental, social, sustainability, technical and financial outcomes. The exploration plan will progress based on a regional survey which has identified high priority targets near the operation. This plan was developed with contributions from SRK, a qualified Mongolian hydrogeologists from Litho exploration, the Kharmagtai government & community relations team, and O2 Mining. The PFS has conservatively costed a commercial supply and local pipeline to provide the additional Stage 1 water.

Stage 2 requirements are anticipated to be met through additional water exploration. Risk mitigation for both Stage 1 and Stage 2 requirements will come from the Mongolian Government's Kerlen-Toono project (Blue Horse Water Infrastructure Program)^{13,14}, which aims to bring a high-capacity water pipeline from the Kherlen River in northern Mongolia to the Gobi within 6-8 years. Kherlen Toono project is already in Feasibility Study stage, partly funded by Oyu Tolgoi and Tavan Togloi operating mines, and is designed to support the mining industry in the Gobi region. The Kherlen Toono project was identified within a resolution of the Mongolian Parliament to approve the Cabinet's 2024-2028 Action Program, which defines 15 specific nation building mega-projects.¹⁵

NON-PROCESS INFRASTRUCTURE

Design and engineering for non-process Infrastructure was completed by O2 Mining. This included all support facilities, services, freight and logistics. These were developed to both Mongolian and international standards. Due to Kharmagtai's location both freight and logistics will utilise nearby rail and road facilities (~15km) and shipment points from nearby regional centres including Tsogttsetsii and Dalanzagdad.

13 2030 Water Resources Group – Mongolia South Gobi Hydro-Economic Analysis, January 2021

14 Asia Development Bank – Mongolia Human Settlements Development Program, October 2022

15 <https://www.youtube.com/watch?v=L8VQEnvZjco>; <https://montsame.mn/en/read/349192>

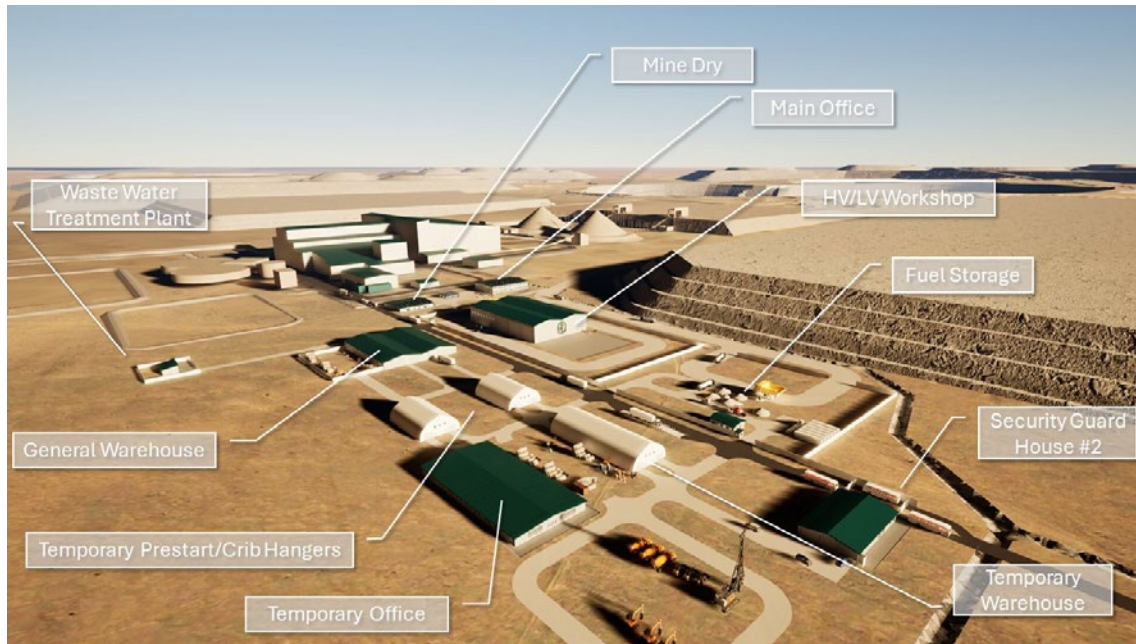


Figure 24: Non-Process Infrastructure (perspective view looking northeast)

OPERATIONS STRATEGY

The operating model selected for the PFS envisages Kharmagtai operating as a long-distance commute site supported by an office in Ulaanbaatar. The project targets Mongolian management with any expatriate roles aimed at training and developing Mongolians into management positions.

The Project will seek to engage a significant portion of the workforce locally, with the balance provided from the capital Ulaanbaatar. The local workforce will commute by bus from regional centres including Tsogttsetsii, Dalanzagdad and Mandalgovi. The Ulaanbaatar workforce will commute on shift changes via flights to the nearby Tsogttsetsii airport and then by bus to site.

Accommodation on site will be a mix of single rooms, double rooms and 4-person rooms. Rosters for site-based roles are a mix of 5/2, 7/7 and 14/14 shifts, which is consistent with those used by other mining operations in Mongolia and with the country's labour regulations which require even time rosters for long-distance commute roles.

Operations leadership will utilise the industry standard roles of General Manager and Deputy General Manager – Operations. The General Manager will have overall accountability and direct responsibility for health, safety, environment, community, logistics, site support, human resources, government and external relations. The Deputy General Manager – Operations will be accountable for mining, processing, technical services, and mobile and fixed plant maintenance. Managers will be designated for each of the areas listed. Total personnel requirements as designed include approximately 760 Kharmagtai employees and 180 contractor personnel during initial Stage 1 operations.

Mining operations are structured as a 3rd party contract miner model. Mineral processing, tailings, on-site infrastructure, general and administrative tasks will be owner operated.



UPSIDE OPPORTUNITIES

The PFS evaluated several upside opportunities that were identified during the 2022 Scoping Study.

The table below outlines those opportunities that are not yet defined to a PFS standard and as such are not built into the PFS economic model. These will be further evaluated and ruled in or out during the next stage BFS.

Opportunity	Description	Progress Made During PFS	Revenue Uplift	Unit Cost Reduction	Inventory Expansion
Pit Slopes	Steeper pit slopes through analysis of improved geotechnical engineering data.	Forward work plan developed.		X	X
Silver	Include Silver in the Resource model to enable quantification of production. Already recovered to concentrate so will enable a cost-free revenue uplift.	Developed plan for future inclusion.	X		
Copper in Flotation	Improvement in copper recovery through rougher and cleaner circuits.	Initial pyrite suppression testwork completed.	X		
Copper in Flotation Tails	11% of Cu is lost through rougher tails and another 8% through cleaner tails. Evaluate potential recovery options.	PFS metallurgy program identified metal flows and target areas.	X		
Oxide Heap Leach	Oxide 20m layer is currently treated as waste pre-strip, with exception of limited gold-rich material. This could conceptually generate cash instead of being an upfront cost. Economics to be determined.	Tests of Cu-Au staged heap leach using GlyCat™ and acid was a technical success. ¹⁶ Need to conduct further study and identify a commercially viable acid supply.	X		
Upgrading Material	Further investigate coarse particle separation to debottleneck post expansion.	Eriez hydrofloat tests confirmed upgrade potential. ¹⁷	X	X	
Mine Fleet	Mine fleet – use of trolley assist and emerging battery technology to reduce carbon emissions, reduce unit cost and expand mine inventory.	NA		X	X
Cost of Capital	Leveraging Zijin cost of capital, that would materially increase NPV versus Project assumption of 8%. See sensitivities.	Xanadu and Zijin as 50-50 JV partners controlling the Project.		X	
Resource Expansion	Drilling to further upgrade the Mineral Resource, converting waste into ore at White Hill and Stockwork Hill and upgrading the resource classification.	Resource definition drilling identified new target areas for drilling.			X
New Discovery at Depth	Mineral Resource open laterally and at depth. Higher grades depth could enable a block cave underground mine.	Drilling identified new prospective areas to target at depth.			X

¹⁶ ASX/TSX Announcement 6 March 2024 – Kharmagtai Oxide Material Recovery Results

¹⁷ ASX/TSX Announcement 23 April 2024 – Kharmagtai Coarse Ore Flotation Results

COPPER MARKET

MARKET AND METALS PRICING ASSUMPTIONS

The 12-month price range for copper included a high of \$5.19/lb and a low of \$3.57/lb. A price of \$4.10/lb has been applied to the calculations for the 2024 PFS, viewed as conservative when balanced against higher market forecasts and exceptionally strong pricing conditions, low inventories, and expectations for continuing increase in medium to long term demand due to international energy transition and carbon reduction policies.

The 12-month price range for gold included a high of \$2,673/oz and low of \$1,820/oz. Gold is a key by-product for Kharmagtai, and a price of \$2,100/oz has been applied to the calculations of the 2024 PFS. This is considered conservative based on long term gold demand growth and market pricing forecasts.

PRICE FUNDAMENTALS

- There are three key thematic drivers for copper demand including traditional industry, energy transition, and digital transformation:
 1. Traditional Industry - copper demand linked to economic growth, electricity consumption and power infrastructure to meet increased requirement.
 2. Energy Transition - demand for copper refers to additional demand to achieve global electrification through advanced technology and low carbon regulations, such as wind, solar, hydro, electric vehicles (EV) and batteries.
 3. Digital - demand for copper refers to further growth expected from the ramp-up in digital infrastructure demand as data creation and consumption continue to rise as well as artificial intelligence enabled technology, all enabled by the processing of vast amounts of data and copper-intensive data centres.
- Declining global copper production and increasing production costs.
- Copper & gold prices reached all-time highs in 2024 at \$5.19/lb Cu and \$2,673/oz Au
- S&P Global Market Intelligence reports consensus copper and gold prices of \$4.40/lb and \$2,040/oz in 2027.¹⁸

¹⁸ S&P Global Research, 15 May 2024

SUPPLY FACTORS

- Copper supply-side experiencing grade reduction and resource depletion.
- Shortage of high-quality copper concentrate projects ready for development.
- Lack of new, large-scale, long-life discoveries
- Reduced exploration by Copper Majors, and increased reliance on acquisitions
- Key global sources are located in less stable countries, notably Panama and Chile
- International Energy Agency warnings that by 2030, the worlds existing copper mines and projects under development will only meet 80% of global demand, with an average of 23 years required to open a new copper mine.¹⁹

DEMAND FACTORS

- Increasing copper demand in response to global industrialisation and rising living standards
- Urbanisation of developing nations including China and India
- Environmental policies drive carbon reduction via 'green' technology, leading to electrification that requires more copper
- Cities moving to smart, green infrastructure, with increased IT systems and energy efficiency, which will require high copper intensity design
- Electrification of transport including electric vehicles which require 2.6x the copper of internal combustion vehicles.
- Growth in renewable energy technology by 30-40% annually requires up to 60% more copper than traditional energy generation²⁰

¹⁹ IEA Global Critical Minerals Outlook 2024, 17 May 2024

²⁰ International Copper Association



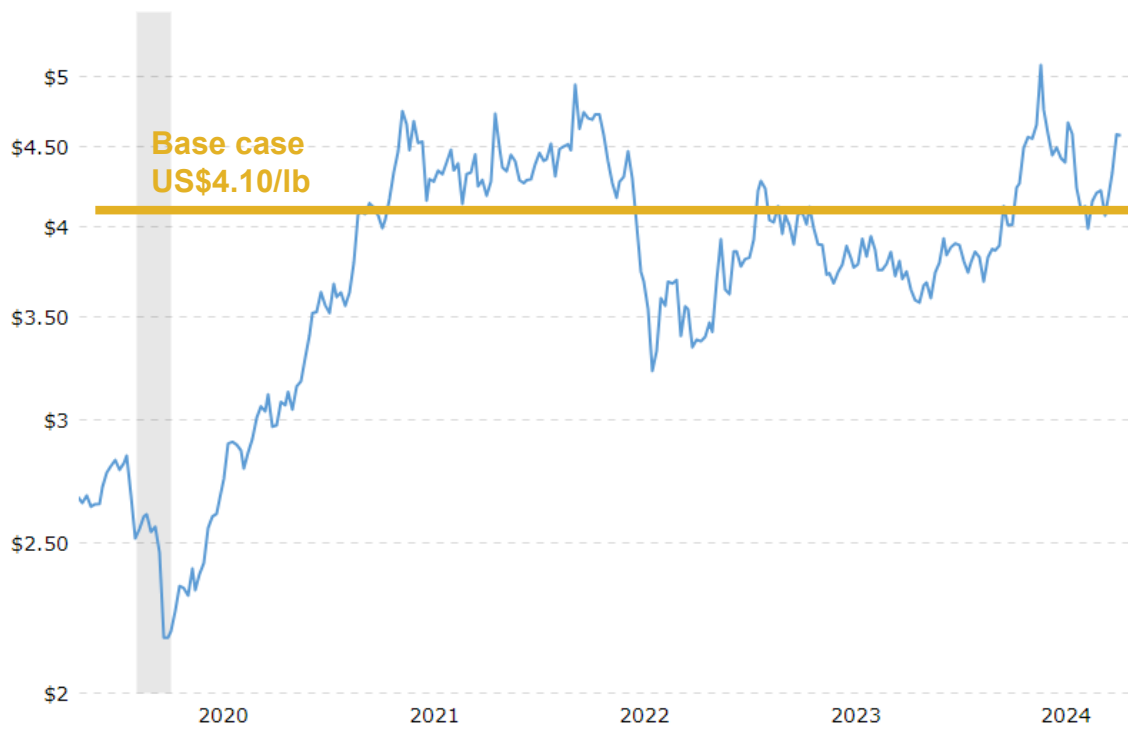


Figure 25: Five Year Copper Price Trend (\$/lb)²¹

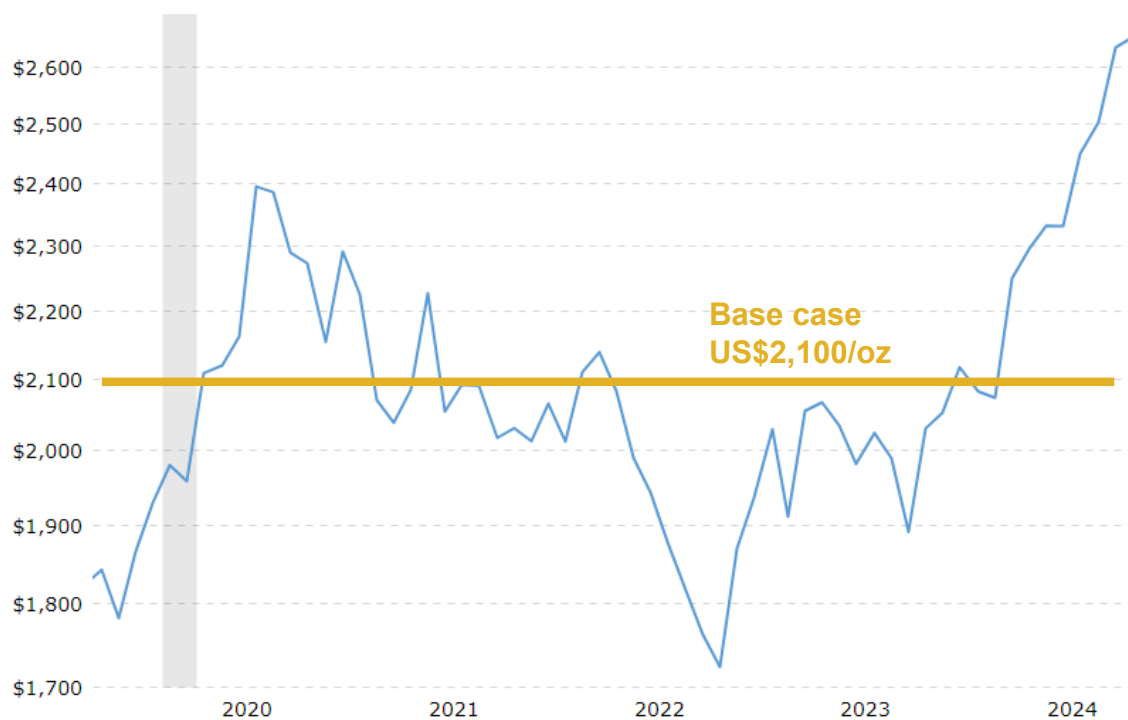


Figure 26: Five Year Gold Price Trend (\$/oz)²²

²¹ Macrotrends.com, 4 October 2024

²² Macrotrends.com, 4 October 2024



RISKS & MITIGATING ACTIONS

INFRASTRUCTURE AND WATER

While the South Gobi is remote from major cities, the rail, water, communications and limited power infrastructure are all established and proximate to Kharmagtai. Much of this was established by the Government of Mongolia to facilitate development of the mining industry in the region, specifically with Kharmagtai and other projects in mind. With relatively flat terrain and low population density, expanding this infrastructure to support Kharmagtai will be relatively low cost and risk.

The Project has identified a material risk to the project water supply. The PFS has partially mitigated the risk through exploration and pump testing in a nearby water basin. Water supply will continue to be a core focus of the BFS and will be actioned through a forward work plan in development and prospective areas delineated by the Kharmagtai study team, with important contributions from SRK, senior Mongolian hydrogeologists from Litho Exploration, the Oyut Ulaan government & community relations team, and O2 Mining. The Project has a substantial water resource established nearby which can supply in the range of 50 to 100 l/s of water, but additional make-up water will be required to meet the full Stage 1 demand of 350 l/s.

The work during BFS will include a combination of additional exploration in nearby basins and commercial discussions with holders of regional water resources which are not fully utilised. The Stage 2 demand is anticipated to be met through additional borefield exploration, with a strong risk mitigation through the government's Kherlen Toono project, a major north-south water pipeline. Kherlen Toono is a national industry building program designed to support the mining industry in the Gobi and is currently in Feasibility Study stage. The pipeline will also serve as further risk mitigation for Stage 1.

Operational power supply remains a risk as commercial contracts are not yet in place to deliver the solution identified in PFS. The mitigating action is to open commercial discussions during the BFS with vendors interested in supplying Inner Mongolia grid connection and renewable power energy to the project to further refine the commercial and schedule implications for power supply to the Project.

MINING

Additional geotechnical investigation during BFS has potential to steepen pit slopes but may also flatten some slope angles.

REGULATION, PERMITTING AND ESG

Kharmagtai will be developed to international ESG and operating standards and meet all Mongolian permitting and regulatory requirements. The project team is working with experienced Mongolian engineering and environmental consultants to ensure these regulatory and legal requirements are achieved within this framework.

From a social perspective, the South Gobi is the least populated region in the least populated country in the world. Oyut Ulaan, the operating company for Kharmagtai, has established strong relationships with regional communities, government and regulators as described in Xanadu's Sustainability Report, available on Xanadu's website, www.xanadumines.com.

The Project believes there are reasonable grounds to expect all necessary government approvals will be received as scheduled. However, until an Investment Agreement is signed with the Government of Mongolia, there remains a risk, and indeed potential upside, to achieving the permitting, royalty and tax assumptions in this PFS. This risk is mitigated by the Mongolian government's support for the mining sector, with several public presentations by the government of proposed improvement to its mining and investment regulations.

FUNDING

In early 2023, Xanadu established a strategic partnership with Zijin Mining Group Co Ltd (**Zijin**) and formed a 50-50 JV to control the Project. Zijin provided \$35 million to fund this PFS and associated exploration activities. With the PFS now complete, the Project requires approximately \$890M of pre-production capital.

In consideration of all minority and JV interests and carry agreements, Xanadu and Zijin will be required to jointly provide 90.4% (Xanadu share approximately \$400 million) of the capital cost including BFS and construction.

Xanadu has engaged advisers and is in active discussion with potential funders. Xanadu expects to fund its share 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 or partial asset sale.

REGULATORY, SOCIAL AND ENVIRONMENTAL

APPROVALS AND SUSTAINABILITY

Xanadu maintains strong relationships with its stakeholders, including local communities and local, regional and national government and regulators.

Please refer to Xanadu's annual Sustainability Report available on our website at www.xanadumines.com.

ENVIRONMENTAL ASSESSMENT

Detailed Environmental Impact Assessment (**DEIA**) work was undertaken in 2012 and approved to obtain the existing Kharmagtai mining license, with a key focus on water and biodiversity.

During the PFS, the Mongolian DEIA fieldwork was refreshed to facilitate the next stage of regulatory approvals and permitting for construction. The studies and surveys completed to date have identified no material concerns or risks that would impact the Project timeline and approvals.

Additional Environmental and Social Impact Assessment (**ESIA**) work is planned for first half of 2025 to meet international standard project financing requirements.

MINING TENURE

The Kharmagtai Mining License was granted in September 2013 for 30 years with two, 20-year extensions. The license provides the right to conduct mining activities and construct structures related to those activities.

The Exploration Camp currently sits outside the Mining License under a long-term renewable land use permit. The Project expects to retain this camp which includes a modern core processing facility for use over the life of Kharmagtai.

An additional land use permit will be required for the off-site TSF which commences operation in approximately year 13 of operation. This requires a land use permit from the local government and is not expected to be an impediment to operation. The nearby Oyu Tolgoi copper mine is currently in the early stages of permitting its first off-site TSF, which will establish a precedent for Kharmagtai to follow.

HERITAGE AND ARCHAEOLOGICAL SITES

Kharmagtai is located in a remote area of the South Gobi Desert with very low population density and as a result has limited exposure to heritage and archaeological challenges. Surveys have identified two small burial sites on the mining license area, which will require university assessment and subsequent movement prior to mining operations.

This assessment and relocation process has been well established at other mines and industrial sites in Mongolia and is not expected to create a risk to the Project.

COMMUNITY

While located in a sparsely populated area, Kharmagtai still aims to provide a positive influence on local communities and neighbors. The Xanadu Sustainability Report outlines these efforts including support to community potable groundwater access, economic development, education and medical facilities. Kharmagtai includes a university scholarship program each year for local students as well as an internship program for students who want to gain experience in exploration and mining.



Figure 27: New community water well commissioning - established by Kharmagtai

PERMITTING

The permitting process for Kharmagtai can be broken down into nine key steps, as shown on the figure below. The permitting process commences at the same time as the updated Environmental Impact Study (**EIS**), upon completion of the PFS. The steps are well understood and are anticipated to require nine months from commencement to completion.

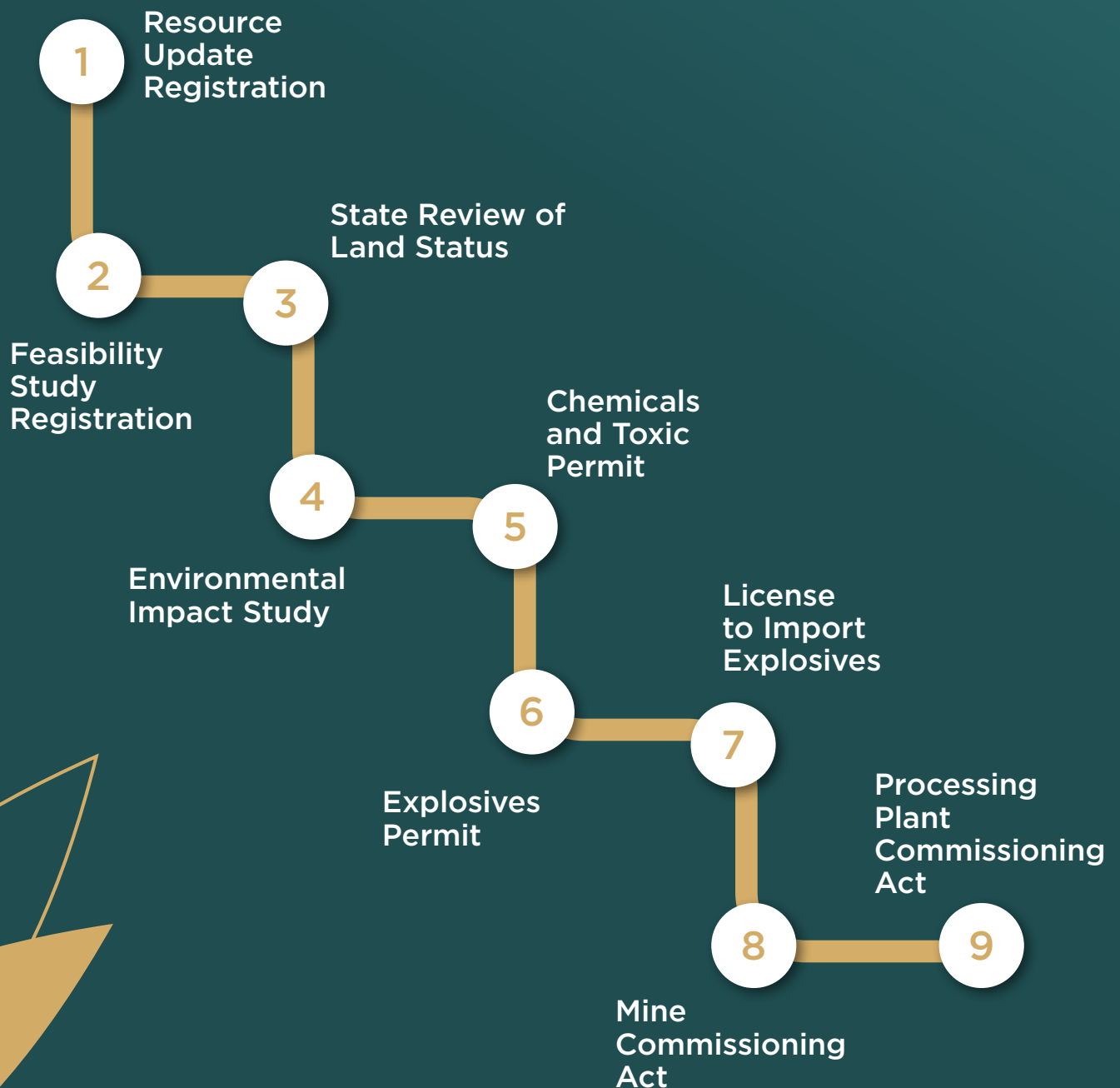


Figure 28: Permitting Steps

(excludes Water Reserve & Extraction which may happen at different points in this chart)

DEVELOPMENT SCHEDULE AND FUNDING

SCHEDULE

The next development stage for Kharmagtai will be an 18-month BFS commencing in Q1 of calendar year 2025. In parallel with the BFS, the Mongolian FS and DEIA will be finalised to facilitate the Mongolian Government's assessment of the Project's strategic status and then initiate negotiation of the Investment Agreement and Stability Terms prior to commencing construction (or Final Investment Decision).

Early works and long lead item orders will commence in the final months of BFS to establish the site infrastructure and obtain major equipment to support full scale construction.

This will be followed by a two-year period to build the remaining infrastructure, the ore processing facility and establish the open pits ready for production in 2028.

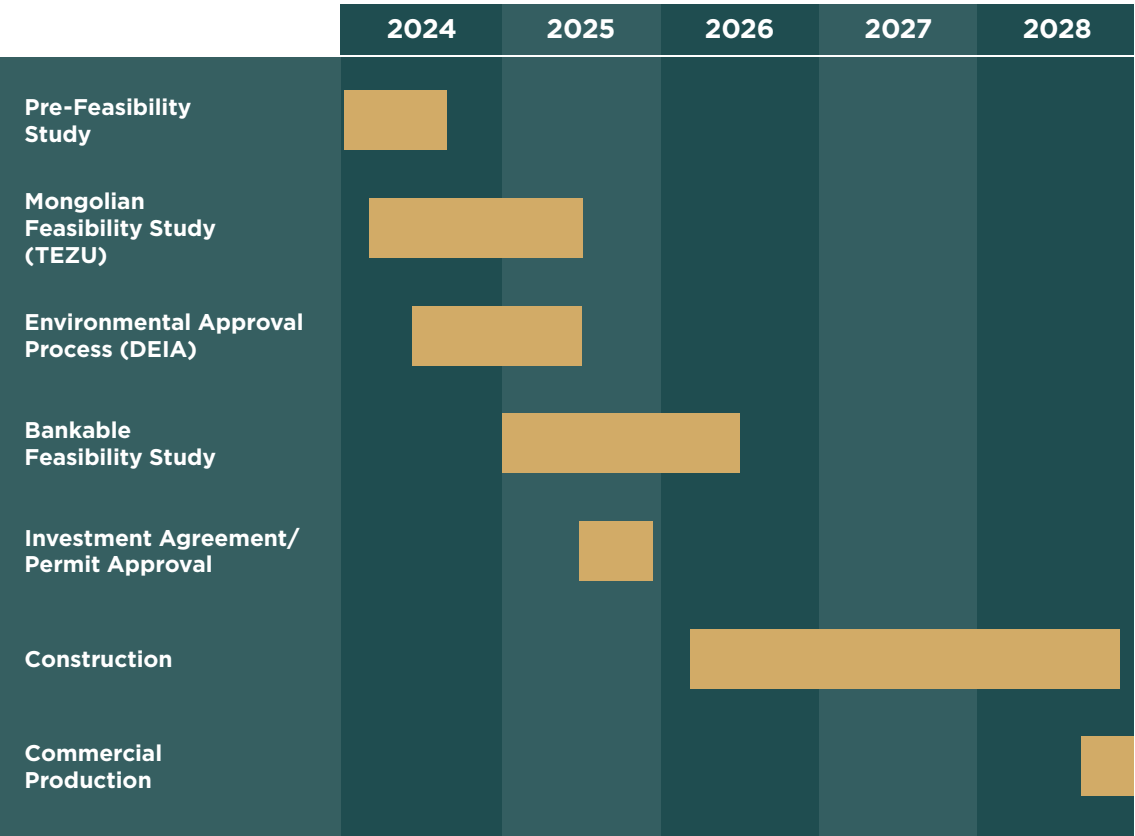


Figure 29: Project Timeline

KHARMAGTAI BANKABLE FEASIBILITY STUDY

The Kharmagtai BFS is expected to commence in the first quarter of calendar year 2025 and be completed in the first half of calendar year 2026, with the study scope to include:

- Environmental and Social Impact Assessment (**ESIA**) fieldwork and community engagement.
- Drilling for sterilisation, geotechnical investigation, and water exploration & reserve definition.
- Metallurgical testing to refine and rule in or out the heap leach option for oxide materials.
- Metallurgical and material properties variability testing to further refine reagent selection and target heap leach upside for oxide materials.
- Feasibility level engineering to prepare for construction of the single go-forward option as defined in the PFS and subsequent work (e.g. heap leach oxide).
- Contracting and procurement strategy finalisation.
- Establishment of power offtake contracts, logistics contracts, and water supply contracts and other commercial agreements and memorandums of understanding.
- Mongolia regulatory requirements including Mongolian Feasibility Study, DEIA submission, negotiation of investment stability agreement, and permitting for construction

FUNDING

Kharmagtai (in 100% terms) is expected to require \$890 million, including approximately \$30 million for BFS and approximately \$860 million for construction and commissioning.

As a result of minority ownership and carry agreements, 90.4% of funding requirements will be split equally by JV partners Xanadu and Zijin. Xanadu share of the funding is therefore approximately \$400 million, including \$15 million for the BFS and \$385 million for construction stages.

As previously disclosed, Xanadu is actively engaged with potential funders via its advisers. Xanadu has engaged Jefferies and Bacchus Capital to explore all forward project funding alternatives in a global market. Xanadu's Board of Directors and Management are experienced and have a successful track record in financing and operating mine exploration, development and operations, funded via equity markets, debt providers, and alternative royalty and streaming. This experience, combined with strong Kharmagtai project economics, significant scale, and a looming global supply deficit, gives Xanadu confidence in its ability to attract appropriate funding and partners to progress its share of this project to the next stage.

FINANCIAL RESULTS

Presented in 100% Terms (Xanadu holds 50% control and 38.25% economic share)

Summary project financial performance results for base, spot, high and low cases are shown in the following tables.

Table 12: Study Outcome Ranges

Project Financial Summary	Unit	Low	Base	High	Spot	2022 PEA ²³
Net Revenue	\$M	26,600	27,900	29,300	32,400	16,100
EBITDA	\$M	7,400	8,500	9,500	12,500	6,800
Post-Tax Net Cash Flow	\$M	3,200	4,600	5,500	7,700	3,400
Post-Tax NPV (8%)	\$M	450	930	1,220	1,880	630
Post-Tax IRR	%	14%	21%	25%	31%	20%
Post-Tax Capital Payback	Yr	5	4	4	3	4
Pre-Tax Net Cash Flow	\$M	5,100	6,300	7,500	10,300	4,900
Pre-Tax NPV (8%)	\$M	1,030	1,400	1,770	2,670	1,030
Pre-Tax IRR	%	22%	27%	32%	40%	25%
Pre-Tax Capital Payback	yr	4	3	3	2	3

Table 13: Economic Range Assumptions

Project Financial Summary	Unit	Low	Base	High	Spot ^a	2022 PEA
Cu price	\$/lb	3.69	4.10	4.51	4.52	4.00
Au price	\$/oz	2,210	2,100	1,990	2,658	1,700
Pre-Production Capex	\$M	930	890	840	890	690
LOM Capex	\$M	2,070	1,970	1,870	1,970	1,880

^a Spot prices at 4 October 2024, per [dailymetalprice.com](https://www.dailymetalprice.com)

The high and low ranges are created to help readers understand potential variances in different economic scenarios by flexing copper price, gold price, and capex. The low case scenario assumes copper price -10%, capex +5%, and gold price +5% which represents an economic environment of slowing industrial activity (copper -10%), higher inflation (capex +5%), and gold acting as a natural hedge (gold -5%). The high case represents the inverse, representing an accelerating industrial environment and reduced inflation.

The spot price scenario above assumes no change to capex and metal prices remaining at the current spot prices per the date in the table.

Capital payback is found to be within the 4th year of operation for the high and base scenarios and the 5th year for the low scenario.

²³ ASX/TSX Announcement 6 April 2022 – Scoping Study Kharmagtai Copper-Gold Project; and ASX Announcement 20 June 2022 – NI43-101 Preliminary Economic Assessment Technical Report

COST ESTIMATES

Capital and operating cost estimates for the PFS have an average confidence range of +/-25% and are appropriate for a typical PFS stage of study. These are based on the following:

- Mine capital and operating cost inputs were developed by Mining Plus which was converted to a contract mining model by O2 Mining. Under the contract mining model all capital expenditure requirements are amortized within operating costs paid to a 3rd party. Cost estimates are based on equipment selection in Table 7, quoted equipment pricing, and Mining Plus database of projects with comparable mining conditions. This differed from the 2022 PEA which used an owner mining model.
- Processing capital and operating cost inputs were developed by DRA Global using major equipment per Table 9 and a combination of quoted equipment and factoring using DRA database of projects with comparable process design. The maximum throughput rate of 52Mtpa is significantly larger than 30Mtpa in the 2022 PEA.
- Tailings capital was developed by Knight Piesold based on tailings volume requirements and terrain in the selected location, noting that testwork indicates lining is not required. Material will be sourced locally from mine pre-strip. Costs incorporated input from Mining Plus and Knight Piesold database of similar tailings storage facilities.
- Infrastructure capital and operating cost inputs were developed by O2 Mining in Mongolia to support a using first principles and benchmarking against previous projects in Mongolia and current market rates. This includes temporary facilities to support construction, shutdown maintenance and other activities early in the project.
- Contingency allowances have been based on typical % values for a PFS and average around 15%.

Table 14: Project Capital Expenditure

Project Capital Expenditure	PFS \$M	2022 PEA \$M ²⁴
Mining ^a	0	105
Process Plant	540	290
Tailings	55	40
Site Infrastructure	80	30
Indirects	90	110
Contingency	110	80
Owners Costs	15	35
Total Project Capital	890	690

^a PFS assumes contractor mining not owner mining; capital cost is within project operating costs.

24 ASX/TSX Announcement 6 April 2022 – Scoping Study Kharmagtai Copper-Gold Project; and ASX Announcement 20 June 2022 – NI43-101 Preliminary Economic Assessment Technical Report

Table 15: Deferred Capital Expenditure

Deferred Capital Expenditure	PFS \$M	2022 PEA \$M
Mining ^a	0	70
Plant & Infrastructure Expansion	530	290
Indirects	75	70
Contingency	100	85
Owners Costs	15	0
Total Project Capital	720	515

^a PFS assumes contractor mining not owner mining; capital cost is within project operating costs.

Table 16: Sustaining Capital Expenditure

Sustaining Capital Expenditure	PFS \$M	PEA \$M
Mine Sustaining ^a	0	300
Plant & Infrastructure Sustaining	260	285
Closure	100	90
Total Project Capital	360	675

^a PFS assumes contractor mining not owner mining; capital cost is within project operating costs.



Table 17: Operating Costs

Unit Operating Costs	Units	Stage 1 (8 years)	Stage 2 (21 years)	PFS Avg LOM	2022 PEA Avg LOM ²⁵
Mining (incl. pre-strip, excl. stockpile reclaim)	\$/t material mined (ore+waste)	2.20	2.00	2.00	2.10
Mining	\$/t ore processed	8.10	4.20	4.90	4.40
Processing	\$/t ore processed	7.10	6.50	6.60	5.30
General & Administration	\$/t ore processed	1.40	0.70	0.90	1.10
Corporate Overheads	\$/t ore processed	0.20	0.10	0.10	0.40
Total Operating Costs	\$/t ore processed	16.80	11.50	12.50	11.20

Table 18: C1 Cash Costs

C1 Cash Costs (\$/lb Cu)	Payback (4 years)	Stage 1 (8 years)	Stage 2 (21 years)	PFS Avg LOM	PEA Avg LOM
Mining	1.60	1.60	1.25	1.30	1.10
Processing	1.30	1.30	1.70	1.65	1.30
General & Admin	0.25	0.30	0.20	0.20	0.30
Concentrate Transport	0.10	0.10	0.10	0.10	0.10
TC/RC	0.20	0.20	0.25	0.25	0.25
Byproduct Revenue	-2.90	-2.80	-2.00	-2.20	-1.70
C1 Cash Costs	0.55	0.70	1.50	1.30	1.35

Table 19: All-In Sustaining Costs

All-In Sustaining Costs (\$/lb Cu)	Payback (4 years)	Stage 1 (8 years)	Stage 2 (21 years)	PFS Avg LOM	PEA Avg LOM
Mining	1.60	1.55	1.25	1.30	1.10
Processing	1.30	1.30	1.70	1.60	1.30
General & Admin	0.25	0.25	0.20	0.20	0.25
Corporate Overhead	0.05	0.05	0.05	0.05	0.10
Sustaining Capital	0.05	0.10	0.10	0.10	0.20
Site Costs	3.25	3.25	3.30	3.25	2.95
Concentrate Transport	0.10	0.10	0.10	0.10	0.10
TC/RC	0.20	0.20	0.25	0.25	0.25
Royalties	0.45	0.50	0.45	0.45	0.25
Total Unit Operating Costs	4.00	4.05	4.10	4.05	3.55
Byproduct Credits	-2.90	-2.80	-2.05	-2.15	-1.65
Net Unit Costs	1.10	1.25	2.05	1.90	1.90

²⁵ ASX/TSX Announcement 6 April 2022 – Scoping Study Kharmagtai Copper-Gold Project; and ASX Announcement 20 June 2022 – NI43-101 Preliminary Economic Assessment Technical Report

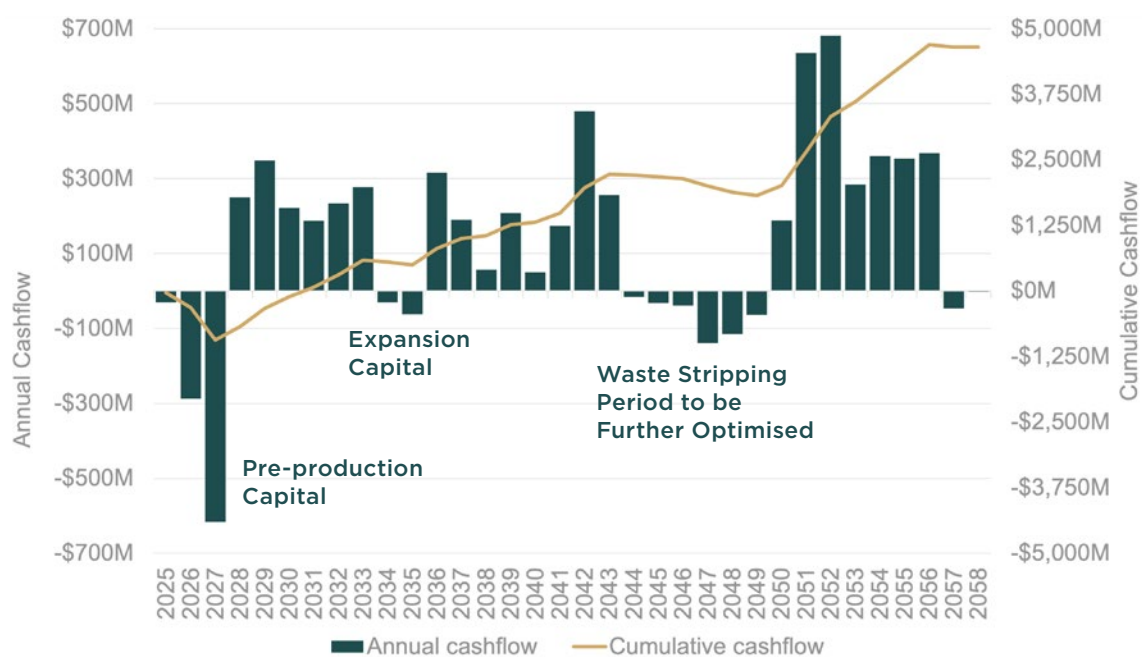


Figure 30: Annual Cashflow

NPV SENSITIVITY ANALYSIS

Project economics will vary according to the realised copper and gold prices. The chart below illustrates how the estimated base case NPV of \$930M varies using 20% higher and 20% lower assumptions for metal prices, capital and operating costs, noting base case assumptions for the PFS were a gold price of \$2,100/oz and copper price of \$4.10/lb.

The project is most sensitive to copper prices, followed by gold price, cost of capital, capital expenditure, and least sensitive to operating costs. However, the Project NPV remains positive under any of these sensitivity conditions.

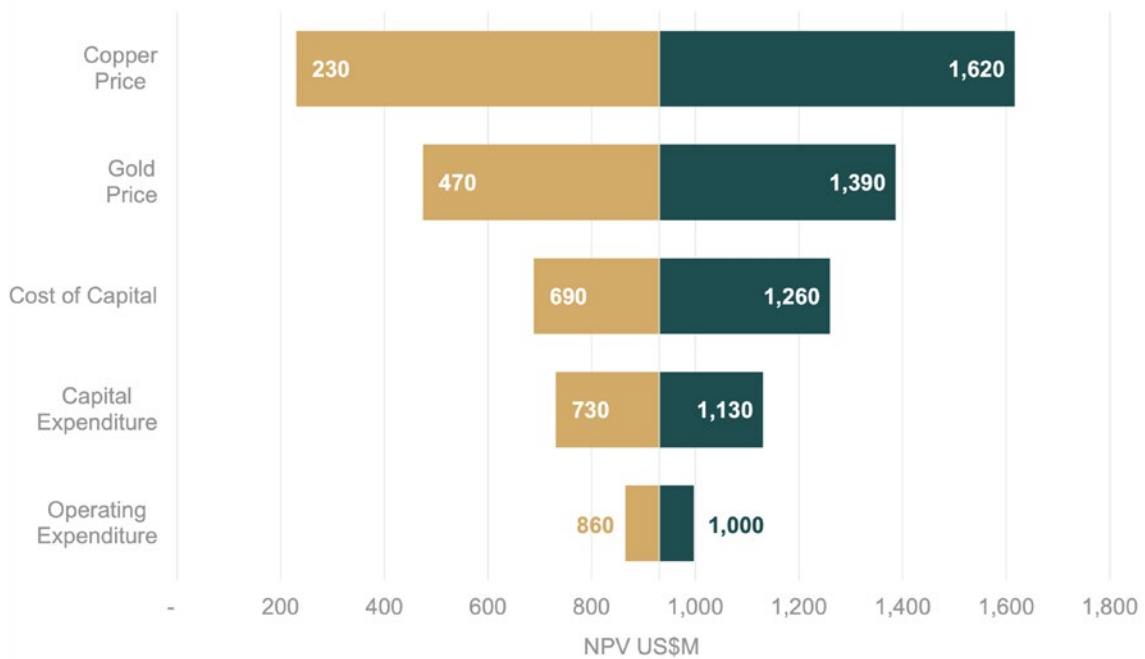


Figure 31: Sensitivities

Additional sensitivity analysis was undertaken on different royalty and cost of capital scenarios on both a pre-tax and post-tax basis. Royalties are generally negotiated in investment stability agreements, which Kharmagtai will undertake in its next phase. For the PFS, royalties were benchmarked against the government owned Erdenet Copper Mine (high case), which matches existing legislation, the Rio Tinto owned Oyu Tolgoi Copper Mine (low case) and current draft legislation published by the Government of Mongolia (base case). A cost of capital at 5% was used to illustrate the potential value of the Project to a large organization which has access to the Chinese banking system. This effectively doubles the base case NPV.

Table 20: Royalty and Cost of Capital Scenarios

Financial Summary	Unit	High Royalty with High Metals Prices (+10%)	PFS Base Case	Low Royalty & Base Case Metals Prices	Low Cost of Capital & PFS Base Case	2022 PEA ²⁶
Net Revenue	\$M	30,700	27,900	27,900	27,900	16,100
EBITDA	\$M	8,700	8,500	9,100	8,500	6,800
Post-Tax Net Cash Flow	\$M	4,800	4,600	5,100	4,600	3,400
Post-Tax NPV (8% discount)	\$M	1,020	930	1,070	1,650	630
Post-Tax IRR	%	22%	21%	22%	21%	20%
Post-Tax Capital Payback Period	yr	4	4	4	4	4
Pre-Tax Net Cash Flow	\$M	6,500	6,300	6,900	6,300	4,900
Pre-Tax NPV (8% discount)	\$M	1,520	1,400	1,580	2,350	1,030
Pre-Tax IRR	%	29%	27%	29%	27%	25%
Pre-Tax Capital Payback Period	yr	3	3	3	3	3

Table 21: Royalty and Cost of Capital Scenarios

Financial Summary	Unit	High Royalty & High Metals Prices	PFS Base Case	Low Royalty & Base Case Metals Prices	Low Cost of Capital & PFS Base Case	2022 PEA
Discount Rate	%	8.0%	8.0%	8.0%	5.0%	8.0%
Royalty Rate	%	20.0%	8.4%	5.0%	8.4%	5%
Cu price	\$/lb	4.51	4.10	4.10	4.10	4.00
Au price	\$/oz	2,310	2,100	2,100	2,100	1,700

a. High Royalty case consistent with government owned Erdenet Copper mine

b. Low Royalty case consistent with Rio Tinto owned Oyu Tolgoi mine

c. Base Royalty case consistent with Mongolia published draft legislation

d. Low cost of capital case simulating project funded by Chinese mining major

²⁶ ASX/TSX Announcement 6 April 2022 – Scoping Study Kharmagtai Copper-Gold Project; and ASX Announcement 20 June 2022 – NI43-101 Preliminary Economic Assessment Technical Report

MATERIAL MODIFYING FACTORS

The PFS considered modifying factors in the mining, processing, infrastructure (including power and water), marketing, development schedule and economic areas to produce the optimised mine production schedules.

The PFS considered modifying factors in the mining, processing, infrastructure (including power and water), marketing, development schedule and economic areas to produce the optimised mine production schedules.

The mining modifying factors included operating costs, pit slopes, minimum mining width, maximum annual mining rates, vertical rate of bench advance and haulage distances to the plant, stockpile and waste dumps. No additional estimate was made for mining dilution and loss due to the gradational nature of the porphyry mineralisation. It was also assumed that due to the style of mineralisation the geological model incorporates some level of dilution.

The ore processing assumed an annual ore processing rate, ramp up rate, recovery rate for gravity gold, recovery of copper and gold by flotation to concentrate and operating costs. Realisation charges included concentrate freight, treatment and refining charges, payable terms and deductions.

The infrastructure modifying factors included supply of power and water. For power, this included 3rd party offtake contracts in exchange for building, owning and operating renewable power facilities and high-capacity grid connections. For water this included potential for both additional exploration and negotiation with third parties who have underutilised water resources in the region, as well as local pipeline construction. An additional water modifying factor is the risk mitigation provided by the high capacity Kherlen Toono water pipeline which is a government project currently in feasibility study stage, with the study being funded by Oyu Tolgoi and Tavan Tolgoi, which will be constructed by a 3rd party.

The development schedule considered study, permitting and construction periods. Environmental, Social and Governance (ESG) modifying factors include the assumption that strong relations with local communities and government will be maintained and there will be no material environmental or related ESG issue that impacts the development schedule.

Economic modifying factors include the assumption that there will be no unforeseen cost impediments or negative metal price fluctuations that impact the development of the project.

Dassault Systèmes Geovia Whittle™ software used these modifying factors to determine the inventories to be mined in a sequence of pit shells for each deposit and the optimal cutback phases in each pit. The Resource in each phase was then scheduled on an annualised basis over the LOM using Whittle Consulting's proprietary Prober-ETM software for a variety of scenarios. The parameters are based on deposits and operations of similar properties providing confidence in the applicability.

KEY CONTRIBUTORS TO THE STUDY

The study engaged high quality international and Mongolian contractors as outlined below.



Figure 32: Key contributors to the Kharmagtai PFS

FORWARD LOOKING STATEMENTS

Certain statements contained in this PFS, 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 PFS or to reflect the occurrence of unanticipated events, other than as 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 PFS 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 PFS.

To achieve the range of Kharmagtai Copper-Gold Project outcomes indicated in this PFS, funding in the order of approximately \$890 million will likely be required by the owners of the project. As a result of minority ownership and carry agreements, Xanadu and Zijin are jointly accountable for 90.4% of this total based.

Based on current market conditions and the results of studies undertaken, there are reasonable grounds to believe Xanadu’s share of 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 PFS 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 PFS.

COMPETENT PERSON STATEMENTS

The information in this Study 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. He 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 Qualified Person as defined in the CIM Guidelines and National Instrument 43-101 and as a Competent Person under JORC Code 2012. 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.

The information in this Study that relates to Ore Reserves is based on information compiled by Mr Colin McVie and Mr Simon Grimbeek, who are responsible for the Ore Reserve. Both Mr McVie and Mr Grimbeek are full time Managers and Mining Engineers employed by Mining Plus and are both Fellows of the Australasian Institute of Mining and Metallurgy. They both have 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 and as a Competent Person under JORC Code 2012. Mr McVie and Mr Grimbeek consent to the inclusion in the report of the matters based on this information in the form and context in which it appears.

The information in this Study that relates to open pit geotechnical analysis for the project has been reviewed by Dr John Player, BEng (Mining) (Hons) MEngSc (Mining Geomechanics) PhD MAusIMM(CP) RPEQ (Geotech). Dr Player is not an employee of the Company but is Director and Principal Engineer with MineGeoTech. Dr Player is a Member and Chartered Professional of the Australasian Institute of Mining and Metallurgy; has sufficient experience relevant to the style of mineralisation and type of deposit under consideration and to the activity undertaken to qualify as the Qualified Person as defined in the CIM Guidelines and National Instrument 43-101 and as a Competent Person under JORC Code 2012. Dr Player consents to the inclusion in this report of the contained technical information in the form and context as it appears.

The information in this Study that relates to processing, metallurgy and metallurgical testwork has been reviewed by Graham Brock, BSc (Eng), ARSM. Mr Brock is not an employee of the Company but is employed as a contract consultant. Mr Brock is a Fellow of the Australasian Institute of Mining and Metallurgy; he has sufficient experience with the style of processing response and type of deposit under consideration, and to the activities undertaken, to qualify as the Qualified Person as defined in the CIM Guidelines and National Instrument 43-101 and as a Competent Person under JORC Code 2012. Mr Brock consents to the inclusion in this report of the contained technical information in the form and context as it appears.

The information in this Study that relates to marketing and concentrate logistics was reviewed by Albert de Sousa, MAusIMM, BA, Graduate Diploma International Business. Mr de Sousa is not an employee of the Company but is employed as a contract consultant. Mr de Sousa is a member of the Australasian Institute of Mining and Metallurgy. He has sufficient experience the style of mineralisation, type of deposit, and concentrate production and logistics, and to related activities undertaken, to qualify as the Qualified Person as defined in the CIM Guidelines and National Instrument 43-101 and as a Competent Person under JORC Code 2012. Mr de Sousa consents to the inclusion in this report of the contained technical and commercial information in the form and context as it appears.

The technical and scientific information contained in this document related to Kharmagtai PFS was reviewed by Julien Lawrence, MEngSc (PM), FAusIMM, B Eng Mining (Hons). Mr Lawrence is not an employee of the Company but is employed as a contract consultant. Mr Lawrence is a Fellow of the Australasian Institute of Mining and Metallurgy. He has sufficient experience the style of mineralisation and type of deposit, and to the activities undertaken, to qualify as the Qualified Person as defined in the CIM Guidelines and National Instrument 43-101 and as a Competent Person under JORC Code 2012. Mr Lawrence consents to the inclusion in this report of the contained technical information in the form and context as it appears.

MINERAL RESOURCE AND ORE RESERVES REPORTING REQUIREMENTS

The 2012 Edition of 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 Study has been presented in accordance with the JORC Code 2012. The information in this Study relates to the exploration results previously reported in ASX Announcements which are available on the Xanadu website at: **<https://www.xanadumines.com/site/investorcentre/asx-announcements>**

The Company is not aware of any new, material information or data that is not included in those market announcements.

Xanadu is also subject to certain Canadian disclosure requirements and standards, as a result of its secondary listing on the Toronto Stock Exchange (TSX), including the requirements of NI 43-101. Investors should note that it is a requirement of Canadian securities law that the reporting of Mineral Reserves and Mineral Resources in Canada and the disclosure of scientific and technical information concerning a mineral project on a property material to Xanadu comply with NI 43-101. Xanadu intends to release a NI 43-101 technical report on Kharmagtai within 45 days of this release.



ABOUT XANADU MINES

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 jointly control a globally significant copper-gold deposit in our flagship Kharmagtai project. Xanadu holds 50-50 JV share with Zijin Mining Group in Khuiten Metals Pte Ltd, which controls 76.5% of the Kharmagtai project.

**For further information on Xanadu, please visit:
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This Study Report was authorised for publication by Xanadu's Board of Directors.



KHARMAGTAI TABLE 1 (JORC CODE 2012)

The following Table sourced from the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (2012 Edition) (JORC Code (2012)) presents the assumptions on which this Study is based.

This table is not being used to report Mineral Resources or Ore Reserves. Please refer to separate announcement dated 14 October 2024 – Xanadu Mineral Resources and Ore Reserves.

Instead, as per the ASX Interim Guidance “Reporting Scoping Studies” dated November 2016, this table is being used as a framework to disclose underlying study assumptions.

Section 4 - Estimation and Reporting of Ore Reserves - This table is modified for a Pre-Feasibility Study which includes a Production Target and/or Forecast Financial Information.

(Criteria listed in the preceding sections, contained in the ASX Announcement 14 October 2024 – Kharmagtai Mineral Resources & Ore Reserves, also apply to this section).

Pre-Feasibility Study JORC Table 1, Section 4

Criteria	JORC Code (2012) Explanation	Commentary
Mineral Resource estimate for conversion to Ore Reserves	<ul style="list-style-type: none"> • Description of the Mineral Resource estimate used as a basis for the conversion to an Ore Reserve. • Clear statement as to whether the Mineral Resources are reported additional to, or inclusive of, the Ore Reserves. 	<ul style="list-style-type: none"> • The JORC Code (2012) Ore Reserve Estimate has been classified and reported as a conventional bulk open cut mine feeding a copper concentrator. • The MRE Update used as a basis for the conversion to an Ore Reserve is detailed in this announcement. • The Mineral Resources are reported inclusive of the Ore Reserves.
Site visits	<ul style="list-style-type: none"> • Comment on any site visits undertaken by the Competent Person and the outcome of those visits. • If no site visits have been undertaken indicate why this is the case. 	<ul style="list-style-type: none"> • Julien Lawrence, overall study Competent Person, visited site and labs in 2023 and 2024 • Colin McVie, one of the Competent Persons for Mining and estimated Ore Reserve visited site on 15-16 April 2024 to ensure the data used for the study matches the field observations. • Numerous other members of the study team including Xanadu employees and technical consultants have visited site during the completion of the PFS study used as the basis of the support for the estimated Ore Reserve.

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Study Status	<ul style="list-style-type: none"> The type and level of study undertaken to enable Mineral Resources to be converted to Ore Reserves. The JORC Code (2012) requires that a study to at least PreFeasibility Study level has been undertaken to convert Mineral Resources to Ore Reserves. Such studies will have been carried out and will have determined a mine plan that is technically achievable and economically viable, and that material Modifying Factors have been considered. 	<ul style="list-style-type: none"> The study presented is developed to a Pre-Feasibility Study level. This includes a mine plan that is technically achievable and economically viable. Mine optimisation and strategic guidance for project configuration was undertaken by Whittle Consulting. Mine design and mine engineering were undertaken by Mining Plus. The PFS was undertaken by a team of industry professionals focused on technical areas including infrastructure, approvals, environmental, governance, community, local considerations, operations readiness, geochemistry, hydrogeology, geotechnical engineering, metallurgical, and PFS discounted cashflow model. The Pre-Feasibility Study shows that the mine plan is technically achievable and economically viable taking into consideration all material Modifying Factors
Cut-Off Parameters	<ul style="list-style-type: none"> The basis of the cut-off grade(s) or quality parameters applied. 	<ul style="list-style-type: none"> A breakeven cutoff of 0.22% CuEq was adopted based on economic parameters and recoveries determined as part of the PFS study. The marginal cut-off was 0.13% CuEq. Breakeven and marginal cut-off grades for the Ore Reserve were calculated based on copper equivalent grades that account for the relative value of the recovered copper and gold. This calculation used a copper price of \$4.0/lb and gold price of \$1,900/oz. Recovery and unit cost assumptions matched PFS stage 1 and stage 2 outcomes. The copper equivalent cut off grades vary over time with stockpiling of lower grade material for processing later to maximise net present value (NPV).

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Mining factors or assumptions	<ul style="list-style-type: none"> • The method and assumptions used as reported in the PreFeasibility or Feasibility Study to convert the Mineral Resource to an Ore Reserve (i.e., either by application of appropriate factors by optimisation or by preliminary or detailed design). • The choice, nature and appropriateness of the selected mining method(s) and other mining parameters including associated design issues such as pre-strip, access, etc. • The assumptions made regarding geotechnical parameters (e.g., pit slopes, stope sizes, etc), grade control and pre-production drilling. • The major assumptions made and Mineral Resource model used for pit and stope optimisation (if appropriate). • The mining dilution factors used. • The mining recovery factors used. • Any minimum mining widths used. • The manner in which Inferred Mineral Resources are utilised in mining studies and the sensitivity of the outcome to their inclusion. • The infrastructure requirements of the selected mining methods 	<ul style="list-style-type: none"> • Kharmagtai is a project at PFS stage based on a conventional open pit, truck and shovel operation feeding a copper concentrator. The Ore Reserve is supported by this PFS Study, and the Project is progressing to the Feasibility Stage. To support the Ore Reserve evaluation within the PFS a separate Whittle 4X open pit optimisation evaluation was completed with no value given to the inferred classified material within the Mineral Resource Estimate for all deposits. Following this a PFS level mine design, mine scheduling, mining costing and overall project economic model evaluation was completed to confirm positive economic outcomes for the Ore Reserve. • There are no inferred Resources reported in the Ore Reserves estimation or valued in the mine schedule and financial evaluation to support the Ore Reserve Estimation. • The copper-gold mineralisation at Kharmagtai Project is relatively shallow therefore open pit mining is considered appropriate. Oxide mineralisation at Stockwork Hill, White Hill and Copper Hill is exposed at surface and sulphide mineralisation commences 25m to 45m below surface. At Golden Eagle, Zephyr and Zaraa oxide mineralisation is under 20m to 35m of cover and sulphide mineralisation commences 40m to 60m below surface. • The mining method was based on conventional drill, blast, load and haul open pit operation, utilising large electric rope shovels and hydraulic excavators loading electric drive diesel ultra class haul trucks as a well-proven, flexible and efficient match suited to the planned scale of operations. The PFS assumes a contract miner model for mining operations.

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Mining factors or assumptions (continued)		<ul style="list-style-type: none"> • Geovia Whittle pit optimisation software was used to generate a series of potentially viable pit shells for the deposits, based on the 2023 Mineral Resource. A validation check optimization run was also performed in 2024 with the updated resource model as part of final project checks and completion which confirmed location of final pits and staging. • The Ore Reserves estimate was created from a detailed mine-design. Pit optimisations were performed to determine the inventories to be mined, and to develop pit phasing strategies. The process generates a set of nested pit shells by varying the "Revenue Factor" (i.e. metal price assumption). Selected shells are used for the intermediate phases and ultimate pits. The resulting phases (or cutbacks) were designed and scheduled using Deswik software, aiming to closely approximate the optimised shells with a mine design and PFS level engineering. Deswik determined the multi-mine mining sequence and rate, elevated cutoff to the plant varying over time, and stockpiling of lower grade material for processing later, to maximise NPV using Study assumptions and constraints. • A 10-metre bench height was used consistent with the resource estimate block height and based on the required production rate and appropriately sized equipment. • No additional estimate has been made for mining dilution and loss for the PFS assessment due to the gradational nature of the deposit, other than the inherent dilution within the regularised resource model (20m x 20m x 10m) used for mining planning. It was also assumed that due to the style of mineralisation the geological model and mine schedule incorporates some level of dilution.

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Mining factors or assumptions (continued)		<ul style="list-style-type: none"> • A minimum mining width appropriate for the proposed equipment and consideration of the geometry of mining areas was considered (of nominal 80m, and the intermediate pit shells adjusted as required. • Grade control will be undertaken from sampling of blasthole cuttings assayed in the on-site laboratory and also planned targeted grade control drilling during operation. • The geotechnical analysis was completed by external consultants, which included evaluation of geological, structural and alteration environments, material strength, in-situ stress estimate and rock mass classification from 48 drill holes. The geotechnical data was analysed for the geological and weathering wireframes to undertake bench configuration. The resultant design was tested for overall slope stability analysis using 3D finite element modelling. Slopes recommended were typically 39 degrees in transition zones. By deposit in fresh material the slope ranges were from 36 to 48 degrees in Stockwork Hill, 39 to 48 degrees at White Hill, 39 to 52 degrees at Copper Hill, and 39 to 59 degrees at both Golden Eagle and Zephyr. • The PFS design (also used for the reserve mine schedule) for the concentrator was based on a Stage 1 throughput rate of 26mtpa, which would be increased to 52mtpa in Stage 2, both utilising conventional comminution and flotation technologies, with Stage 2 based on a full duplication of Stage 1 flowsheet. <p>The following preliminary inputs were used to select the pit shells and prepare preliminary production schedules for the six deposits:</p> <ul style="list-style-type: none"> • Metal Prices Copper price \$4.00/lb; Gold price \$1900/oz.

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Mining factors or assumptions (continued)		<ul style="list-style-type: none"> • Mining operating costs were based on the costs built up from first principles in the 2024 PFS: \$1.70-2.00/t mined. (Variation dependent on material source pit and destination (Plant, Stockpile or Waste Dump)). • Processing cost \$6.17/t milled for 26Mtpa operation and \$6.04/t milled for 52Mtpa. • General and administration cost \$1.2/t milled for 26Mtpa operation and \$0.72/t milled for 52Mtpa operation. • Corporate overheads \$1.42/t milled for 26Mtpa operation and \$0.81/t milled for 52Mtpa operation. • All costs are in USD. • 25% Cu concentrate grade in Stage 1 and 22% Cu concentrate grade in Stage 2 with 8% moisture. • Concentrate transport costs of \$44.8/wmt. • Concentrate treatment of \$75/dry tonne. • Concentrate refining charge of \$0.075/lb Cu and \$4.50/ oz Au. • Concentrate payment terms: 96.5% Cu payable, 1% Cu deduction, 97.5% Au payable. • A progressive royalty averaging 8.2% is assumed. • Cu recovery 81%. • Au recovery 80%. <p>Additional Information is below:</p> <ul style="list-style-type: none"> • The infrastructure requirements for open pit mining includes maintenance workshop for mobile equipment, offices, crib rooms and amenities, explosive storage and explosive contractor infrastructure, fuel farm, geotechnical monitoring, electrical infrastructure for electric rope shovels, drills and de-watering systems.

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Mining factors or assumptions (continued)		<ul style="list-style-type: none"> The PFS project has identified a material risk to the project water supply. The PFS has partially mitigated this risk to its water supply and this will continue to be a core focus of the BFS with a forward work plan developed. This plan was developed by a team of competent persons & experts with contributions from SRK, a qualified Mongolian hydrogeologists from Litho exploration, the Kharmagtai government & community relations team, and O2 Mining. The project has a substantial water resource established nearby, but significant amounts of additional make-up water will be required to be identified to meet the full Stage 1 demand. Current predictions Kharmagtai requires approximately 350ML/s make-up water supply for Stage 1, which is roughly doubled for Stage 2.

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Metallurgical factors or assumptions	<ul style="list-style-type: none"> • The metallurgical process proposed and the appropriateness of that process to the style of mineralisation. • Whether the metallurgical process is well-tested technology or novel in nature. • The nature, amount and representativeness of metallurgical test work undertaken, the nature of the metallurgical domaining applied and the corresponding metallurgical recovery factors applied. • Any assumptions or allowances made for deleterious elements. • The existence of any bulk sample or pilot scale test work and the degree to which such samples are considered representative of the orebody as a whole. • For minerals that are defined by a specification, has the ore reserve estimation been based on the appropriate mineralogy to meet the specifications? 	<ul style="list-style-type: none"> • The proposed metallurgical process is a simple comminution circuit comprising a primary crusher, semi-autogenous mill and recycle crusher, ball mill, a gravity circuit to recover coarse free gold and a flotation circuit to produce a copper-gold concentrate. The gravity gold will be tabled and smelted to produce bullion. • These processing techniques are all well tested and techniques currently in use in similar operations globally. • Pre-Feasibility confidence level variability testwork has been completed on samples representing the major mineralisation styles using techniques commonly applied to similar copper/gold porphyry deposits. • Based on the testwork results and experience with similar mineralisation the copper recovery has been estimated at 81% and the gold recovery at 80%. Copper concentrate grades assumed 23% copper for S:Cu ratio below 7.5 and 22% copper for ratios above 7.5. • Further PFS sampling and test work to date have not shown any deleterious element that would have a material detrimental effect on the selling price or project viability. • A market assessment on concentrate assays from the PFS metallurgical assessment of metallurgical composites in 2024 indicated that any potential penalties will be limited and will not have a material impact on the marketability of the concentrate. • No bulk or pilot scale testwork has been carried out to date.

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Environmental	<ul style="list-style-type: none"> The status of studies of potential environmental impacts of the mining and processing operation. Details of waste rock characterisation and the consideration of potential sites, status of design options considered and, where applicable, the status of approvals for process residue storage and waste dumps should be reported. 	<ul style="list-style-type: none"> Mongolian certified EIA consultant Eco Trade LLC undertook a preliminary baseline environmental survey in 2003 and prepared the Mongolian Detailed Environmental Impact Assessment (DEIA) in 2011 as part of the Mining Licence application. The Mining Licence was granted in 2013. Xanadu initiated a review of the approved DEIA in 2019 that identified supplementary studies to be undertaken in the PFS. The approval for this initial DEIA has since lapsed and is no longer valid Mongolian Certified EIA consultant Sublime LLC undertook subsequent baseline environmental surveys in 2024 and are preparing a new DEIA as part of permitting requirements, as a prerequisite for Mongolian Investment Agreement discussions in 2025. Waste rock characterisation was undertaken by SoilTrade LLC in 2024 as part of the PFS. The PFS identified a site in the northeast corner of the Mining License for a tailings storage facility (TSF) in a shallow depression ~6km to the east of the proposed plant site. Design capacity is 350Mt over 12 years on lease and 760Mt off lease over the remaining LOM, sufficient for the proposed operation. Testwork indicated limited acid formation such that dam liner is not required. For the waste rock from the mining operation, a waste rock characterisation study was completed as part of the PFS. An environmental geochemical assessment was conducted based on the available environmental geochemistry data to allow for an initial Acid Rock Drainage (ARD) classification of the waste rock material which was used to inform the design of waste management facilities, waste handling and management.

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Environmental (continued)		<ul style="list-style-type: none"> • The exploration assay data set was used for the preliminary classification of the Kharmagtai waste rock material. This is a large data set and was deemed to be of a very good quality for this stage of study. The acid-base properties of the rock samples were calculated from the sulphur and calcium assays. This dataset consists of assay data for about -133,000 samples taken at 2 m intervals from exploration boreholes. The sulphur content and the Neutralisation Potential Ratio (NPR) were used for the waste classification with the mine scheduling model. • The PFS mine schedule indicated that approximately 63% of the waste rock material is classified as high sulfur waste rock or PAF-MS. Material earmarked for encapsulation (low sulfur, NAF-MS, pNAF_MS) comprises approximately 37% of waste rock. During the PFS checks completed have confirmed, there is overall adequate material to achieve required encapsulation with recommendations for further detailed scheduling of waste rock, and dump design recommended in further studies in the BFS. • The waste dumps will be constructed such that Potentially Acid Forming (PAF) materials will be encapsulated by Non-Acid Forming (NAF) material. The as-built waste dumps are designed with a slope of 37 degrees and the final landforms with a shallower slope of 22 degrees. Further analysis of the final slope angle is planned as part of further work in the BFS. • A conceptual-level cost estimate of earthworks associated with the closure and rehabilitation of planned waste rock dumps, stockpiles and infrastructure, was completed as part of the PFS. The estimate is developed as part of an estimate of potential financial obligations following the immediate cessation of mining activities should this occur during planned mining activities. This estimate has been included within the PFS evaluation.

Criteria	JORC Code (2012) Explanation	Commentary
Infrastructure	<ul style="list-style-type: none"> The existence of appropriate infrastructure: availability of land for plant development, power, water, transportation (particularly for bulk commodities), labour, accommodation; or the ease with which the infrastructure can be provided or accessed. 	<ul style="list-style-type: none"> The mine site is currently connected to a 32kV power line. In the future the Kharmagtai project will build a new 220kV substation, powered by 2 lines from the SS switch station. The new line will extend approximately 140×2 km, with two additional 220kV lines connecting the Inner Mongolia 500kV Bazhong substation to the SS switch station, each about 175×2 km in length. This phase includes two main transformers, with plans for a future expansion to add one more. The project focuses primarily on renewable energy, emphasising wind and solar power. Wind power will have an installed capacity of 169 MW, providing an annual equivalent full-load hour of 3180 hours. Solar power will have a DC installed capacity of 102 MWp and an AC capacity of 83 MW, with an average utilization of 1760 hours over 25 years. The site is located within 15km of the new railway line connecting Tavan Tolgoi to Sainshand on the Trans-Siberian railway. The site access road is planned to connect to this road and the railway. The Trans-Mongolian railway crosses the Mongolia-China border approximately 420 km east of Kharmagtai, traversing the country from southeast to northwest through Ulaanbaatar, to the border with Russia. Road access to site from Ulaanbaatar is via the Ulaanbaatar-Delgertsogt-Mandalgobi-Tsogt-Ovoo route, a 461 km asphalt-paved road. From Tsogt-Ovoo to the Tsogttsetsii-Kharmagtai site, the road is 145 km long and unpaved. The 71 km dirt road from Tsogttsetsii to Kharmagtai needs upgrading to accommodate increased project traffic volumes, loads, and road standards.

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Infrastructure (continued)		<ul style="list-style-type: none"> • A permanent mining camp, heavy and light vehicle (HV/LV) workshop, and warehouse will be constructed in two phases. This phased approach minimises start-up capital expenditure, with initial construction supporting early operations, followed by expansion as operations ramp up and the process plant is expanded. • The camp will be located northeast of the existing exploration camp, adjacent to the main access road. Other key facilities will include the main office, mine dry change facility, and security guard houses. Workshops and warehouses will consist of a general warehouse, chemical warehouse, and processing workshop, positioned near the processing plant and ore stockpiles to optimize efficiency. • The Study assumes workforce from both Ulaanbaatar and nearby regional centres. Commuting to site from regional centres will be via bus. Commutes to regional centres from Ulaanbaatar will be via plane. • Water supply for the project will primarily come from the Zagiin Usnii Khudag (ZUK) groundwater basin, approximately 20 km northeast of the site. A 20 km pipeline with a capacity of up to 150 l/s will be installed. Additionally, a 50 km double pipeline, designed to transmit up to 700 l/s, will be used for a more distant groundwater basin and has been costed into the project. The project will require approximately 350 l/s during the first nine years, increasing to approximately 700 l/s following expansion. Stage 2 water supply will come from groundwater exploration in regional basins and will be augmented and derisked by the option to use the Mongolian Government Kherlen Toono water pipeline currently in Feasibility Study stage. This alternative water supply is to address the water supply risk and identify the make-up water requirements, with costs considered in the PFS, with further technical definition planned in the BFS.

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Infrastructure (continued)		<ul style="list-style-type: none"> The TSF strategy includes two phases: an on-lease two-cell paddock facility with a capacity of 350Mt for the first 12 years of operation, followed by an off-lease two-cell paddock facility with a capacity of 760 Mt for the remaining 17 years.
Costs	<ul style="list-style-type: none"> The derivation of, or assumptions made, regarding projected capital costs in the Study. The methodology used to estimate operating costs. Allowances made for the content of deleterious elements. The source of exchange rates used in the Study. Derivation of transportation charges. The basis for forecasting or source of treatment and refining charges, penalties for failure to meet specification, etc. The allowances made for royalties payable, both Government and private. 	<ul style="list-style-type: none"> The capital cost estimates were based on a mixture of quotations and factoring, PFS stage engineering, as well as benchmarking with similar operations, targeting accuracy of +/- 25%. DRA prepared the capital cost of the ore processing facility based on a first principles mechanical equipment list, supported by quotations for major equipment and factoring balance of plant. Xanadu estimated the EPCM rate of 10% for the ore processing plant using its JV partner Zijin Engineering as the EPCM provider. The capital cost of the majority of the non-processing infrastructure was estimated by Mongolian based O2 Mining. The methodology involves using detailed parametric costing and first principles costing. This estimate is based on analysing relevant costs from previous projects in Mongolia and current market rates to accurately assess costs for facilities and project components. It includes all direct and indirect costs, with 30% owner costs considered under the 3rd party Build, Own, Operate, Transfer (BOOT) arrangement. In this study, the direct costs include temporary facilities to support construction as these will be utilised for shutdown maintenance and other activities early in the project life. Process operating costs were built up by DRA from first principles.

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Costs (continued)		<ul style="list-style-type: none"> • Mining operating costs were built up by Mining Plus from first principles based on pricing from Mongolian based equipment & consumable suppliers and input from established in-country mining contractors and also cross-checked against a database of comparable bulk copper mines. • No contingency was applied to operating costs. • No allowances were made for deleterious elements as they are not considered material. • Realisation charges were based on market analysis undertaken by Zijin Trading Company and Albert de Sousa independent Competent Person. • The PFS assumes Mongolian royalties will be set as part of the Investment Stability Agreement. Copper royalties are assumed to match draft legislation for copper royalties published by the Government of Mongolia. Sensitivities are run in this study at higher and lower benchmarks (high = government owned Erdenet Copper Mine; low = Rio Tinto and government owned Oyu Tolgoi Copper Mine. Gold bullion is assumed to attract a 5% royalty.

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Revenue Factors		<ul style="list-style-type: none"> • The Company has not established any contracts or committed any of its production pursuant to offtake agreements at this time. • The copper market outlook is based on research reports by S&P Global Research (15 May 2024) and IEA Global Critical Minerals Outlook 2024 (17 May 2024). • The sale price is derived from estimated commodity prices based on the market outlook and from benchmarking comparable copper project study prices. • This study assumes sale in China. Freight, handling and insurance are included in the cost of shipping. • A breakeven cutoff of 0.22% CuEq was adopted based on economic parameters and recoveries determined as part of the PFS study and Ore Reserve mine schedule. A marginal cutoff of 0.13% CuEq was adopted.

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Market Assessment	<ul style="list-style-type: none"> The demand, supply and stock situation for the particular commodity, consumption trends and factors likely to affect supply and demand into the future. A customer and competitor analysis along with the identification of likely market windows for the product. Price and volume forecasts and the basis for these forecasts. For industrial minerals the customer specification, testing and acceptance requirements prior to a supply contract. 	<p><u>Market and Pricing Assumptions</u></p> <ul style="list-style-type: none"> The 12-month price range for copper reached a low of \$3.57/lb and a high of \$5.19/lb. A price assumption of \$4.10 has been applied to the calculations for the 2024 PFS, in the lower half of this 12-month price range. The \$4.10/lb price assumption is conservative when balanced against higher forecasts based on exceptionally strong pricing conditions year to date (YTD), low inventories, momentum shifts in economic recovery, stimulus packages and expectations of increased medium-term demand due to carbon reduction energy policies. The 12-month price range for gold reached a low of \$1,820/oz and a high of \$2,673/oz. A price assumption of \$2,100/oz has been applied to the calculations for the 2024 PFS, near the low point for the period. <p><u>Price Fundamentals</u></p> <ul style="list-style-type: none"> Demand for copper is increasing with growing electrification, smart buildings, electric vehicle (EV) demand. Copper prices are near 10-year highs, currently \$4.60/lb Forecast to remain well above \$4.50/lb S&P Global Market Intelligence, as of 30 April 2024, compiles consensus price forecasts which remain above \$4.44/lb Cu beyond 2028 <p><u>Supply Factors</u></p> <ul style="list-style-type: none"> The copper industry is experiencing declining grade, depleting resources in ageing major projects, and increasing production costs as mines go deeper. There is an emerging shortage of high-quality copper concentrate producers There have been major disruptions including the closure of Cobre Panama.

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Market Assessment (continued)		<ul style="list-style-type: none"> • RFC Ambrian (and others) highlights 75 new mines must come online in the next 8 years to balance the market, with supply deficit valued at 10 times the total forecast value of the global lithium market in 2028 • New projects can take 15 years from discovery to production in many jurisdictions. • Jurisdictions previously seen as historically reliable (Chile) are now experiencing a trend towards resource nationalism • Lack of major new, long-life discoveries • Lack of exploration success resulting in shortage of quality assets <p><u>Demand Factors</u></p> <ul style="list-style-type: none"> • Copper metal demand is in response to rising living standards globally • Environmental policies (carbon reduction) drive electrification and displace fossil fuel use • Urbanisation of developing nations populations including China and India • Electrification of transport including electric vehicles • Growth in renewable energy technology

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Economic	<ul style="list-style-type: none"> The inputs to the economic analysis to produce the net present value (NPV) in the Study, the source and confidence of these economic inputs including estimated inflation, discount rate, etc. NPV ranges and sensitivity to variations in the significant assumptions and inputs. 	<ul style="list-style-type: none"> The inputs to the NPV analysis are tabulated in this Study. The NPV was determined using the Discounted Cash Flow method of valuation using a discount rate of 8%, noting that one of the JV partners Zijin Mining Group will most likely have access to much lower cost capital through its scale and the Chinese banking system than the other partner Xanadu Mines. The financial model is in real terms based on yearly increments. No escalation was applied. Mongolian Corporate tax rate of 25% taxable income has been applied. Mongolian Customs Duty of 5% has been applied to all imported materials and equipment. Mongolian VAT of 10% has been applied to both capital and operating costs. Inflation was not included PFS outcomes using full mine inventory (including Inferred Resource) include a NPV range is between approximately \$450M and \$1,220M with base case NPV of \$930M. The PFS ranges include a low case based on a 10% reduction in copper price, a 5% increase in capex and a 5% increase in gold prices as a natural by-product hedge. The high case is the inverse scenario. The project is most sensitive to copper price, followed by gold price and capital expenditure. Further detail on sensitivity is presented in the Study.

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		<div><ul style="list-style-type: none">The PFS Ore Reserve Schedule (including only Indicated Resource) was determined through the project financial model to have NPV of \$650M with a range between approximately \$350M and US\$950M). All model assumptions were per the PFS discounted cash flow model other than the mining schedule which was changed to the Ore Reserve Schedule. Ore Reserve Schedule economic results are below.</div> <table><tr><th>RESERVE KEY FINDINGS</th><th colspan="4">RESERVE</th><th>PFS</th></tr><tr><td>Project Financial Summary</td><td>Low Scenario</td><td>Base Case</td><td>High Scenario</td><td>Spot Prices</td><td>Base Case</td></tr><tr><td>Net Revenue (\$M)</td><td>16,555</td><td>17,305</td><td>18,055</td><td>20,145</td><td>27,925</td></tr><tr><td>EBITDA (\$M)</td><td>4,683</td><td>5,298</td><td>5,902</td><td>7,886</td><td>8,455</td></tr><tr><td>Net Cash Flow (\$M) After CITax</td><td>1,340</td><td>2,333</td><td>2,870</td><td>4,275</td><td>4,631</td></tr><tr><td>NPV (8% discount) After CITax</td><td>236</td><td>666</td><td>901</td><td>1,465</td><td>931</td></tr><tr><td>IRR after CITax</td><td>12%</td><td>20%</td><td>24%</td><td>31%</td><td>21%</td></tr><tr><td>Capital Payback Period (years) After CITax</td><td>6</td><td>4</td><td>4</td><td>3</td><td>4</td></tr><tr><td>Net Cash Flow (\$M) Before CITax</td><td>2,505</td><td>3,224</td><td>3,931</td><td>5,811</td><td>6,280</td></tr><tr><td>NPV (8% discount) Before CITax</td><td>739</td><td>1,047</td><td>1,351</td><td>2,114</td><td>1,405</td></tr><tr><td>IRR Before CITax</td><td>21%</td><td>26%</td><td>31%</td><td>39%</td><td>27%</td></tr><tr><td>Capital Payback Period (years) Before CITax</td><td>4</td><td>3</td><td>3</td><td>2</td><td>3</td></tr></table> <table><tr><th>RESERVE HIGH-LOW-BASE SENSITIVITY SCENARIOS</th><th colspan="4">RESERVE</th><th>PFS</th></tr><tr><td>Project Financial Summary</td><td>Low Scenario</td><td>Base Case</td><td>High Scenario</td><td>Spot Prices</td><td>Base Case</td></tr><tr><td>Cu price (\$/lb) +/-10%</td><td>3.69</td><td>4.10</td><td>4.51</td><td>4.52</td><td>4.10</td></tr><tr><td>Au price (\$/oz) +/-5%</td><td>2,205</td><td>2,100</td><td>1,995</td><td>2,658</td><td>2,100</td></tr><tr><td>Ag price (\$/oz) +/-10%</td><td>26</td><td>25</td><td>24</td><td>32</td><td>25</td></tr><tr><td>Establishment Capex (\$M) +/-5%</td><td>929</td><td>885</td><td>840</td><td>885</td><td>885</td></tr><tr><td>LOM Capex (\$M) +/-5%</td><td>1,973</td><td>1,879</td><td>1,785</td><td>1,879</td><td>1,970</td></tr></table>	RESERVE KEY FINDINGS	RESERVE				PFS	Project Financial Summary	Low Scenario	Base Case	High Scenario	Spot Prices	Base Case	Net Revenue (\$M)	16,555	17,305	18,055	20,145	27,925	EBITDA (\$M)	4,683	5,298	5,902	7,886	8,455	Net Cash Flow (\$M) After CITax	1,340	2,333	2,870	4,275	4,631	NPV (8% discount) After CITax	236	666	901	1,465	931	IRR after CITax	12%	20%	24%	31%	21%	Capital Payback Period (years) After CITax	6	4	4	3	4	Net Cash Flow (\$M) Before CITax	2,505	3,224	3,931	5,811	6,280	NPV (8% discount) Before CITax	739	1,047	1,351	2,114	1,405	IRR Before CITax	21%	26%	31%	39%	27%	Capital Payback Period (years) Before CITax	4	3	3	2	3	RESERVE HIGH-LOW-BASE SENSITIVITY SCENARIOS	RESERVE				PFS	Project Financial Summary	Low Scenario	Base Case	High Scenario	Spot Prices	Base Case	Cu price (\$/lb) +/-10%	3.69	4.10	4.51	4.52	4.10	Au price (\$/oz) +/-5%	2,205	2,100	1,995	2,658	2,100	Ag price (\$/oz) +/-10%	26	25	24	32	25	Establishment Capex (\$M) +/-5%	929	885	840	885	885	LOM Capex (\$M) +/-5%	1,973	1,879	1,785	1,879	1,970
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Social License to Operate	<ul style="list-style-type: none"> The status of agreements with key stakeholders and matters leading to social license to operate. 	<ul style="list-style-type: none"> The South Gobi Desert is the least populated region in Mongolia, the least populated country in the world. Xanadu has strong relationships with remote communities closest to Kharmagtai, providing support to education, health and economic development. This will continue into future stages of project development. The potential social impacts of the Project, both positive and negative, have been subject to an initial assessment to assist in scoping of social baseline studies and identifying affected communities for stakeholder engagement. These studies were commenced in 2024 to support both national environmental and land use approvals and the ESIA requirements for project financing. Xanadu's Annual Sustainability Report is available on its website An initial Environmental and Social Impact Assessment (ESIA) was completed for the grant of mining license in 2012. The 2012 DEIA approval has expired and is no longer valid. The new DEIA is being prepared for submission to the Mongolian authorities in 2024. Baseline environmental studies will be completed in 2025 to support a Mongolian Detailed Environmental Impact Assessment (DEIA) which is required for the Mongolian permitting process. Additional baseline environmental studies are underway to support an international standard ESIA, with requirements as defined by Ramboll to meet project lender requirements. The baseline ESIA social studies will be completed in 2025.

Criteria	JORC Code (2012) Explanation	Commentary
Other	<ul style="list-style-type: none"> • To the extent relevant, the impact of the following on the project and/or on the estimation and classification of the Ore Reserves: • Any identified material naturally occurring risks. • The status of material legal agreements and marketing arrangements. • The status of governmental agreements and approvals critical to the viability of the project, such as mineral tenement status, and government and statutory approvals. There must be reasonable grounds to expect that all necessary Government approvals will be received within the timeframes anticipated in the Pre-Feasibility or Feasibility study. Highlight and discuss the materiality of any unresolved matter that is dependent on a third party on which extraction of the reserve is contingent. 	<ul style="list-style-type: none"> • No natural occurring risks have been identified. Mongolia has harsh winters with temperatures down to -40C, as well as dust storms in the spring. The mine, facilities and business processes have been designed with personnel and operational safety and resilience in mind. • Xanadu has a marketing agency agreement with Tailai, a subsidiary of Noble Resource International Pte Ltd, for 30% of production for 20 years. For clarity this is not offtake, and to secure their marketing rights further discussions will be needed against competitive offers. No other marketing agreements are currently in place. • Xanadu holds a Mining License at Kharmagtai, granted in 2012 for 30 years, and extendable twice for an additional 20 years each • As part of this Mining License, a registered Water Resource was established within 15km of the project • Applications for land access and water usage are not expected to affect the timelines outlined in this Study. The critical path for project timeline will be success of water exploration and timing of commercial negotiations. • The next stage of approvals is to submit Mongolian DEIA and Feasibility Study (which will be based off this PFS). Once those are approved, discussions will commence for investment stability agreement. Following that, a well structured and understood permitting process will be followed.

Criteria	JORC Code (2012) Explanation	Commentary
Classification	<ul style="list-style-type: none"> • The basis for the classification of the Ore Reserves into varying confidence categories. • Whether the result appropriately reflects the Competent Person's view of the deposit. • The proportion of Probable Ore Reserves that have been derived from Measured Mineral Resources (if any). 	<ul style="list-style-type: none"> • Kharmagtai has no Measured Mineral Resources, only Indicated and Inferred. • As a result, all Ore Reserves have all been classified as Probable Ore Reserves, with no Proven Ore Reserves. • Probable Ore Reserve was declared based on the Indicated Mineral Resources contained within the optimised pit design and the latest financial metrics from the PFS work and the reserve schedule economic model evaluation. • To support the Ore Reserve evaluation within the PFS a separate Whittle 4X open pit optimization evaluation was completed with no value given to the Inferred Resource within the Mineral Resource Estimate and mine plan for all deposits. Following this a PFS level mine design, mine scheduling, mining costing and overall project economic model evaluation was completed to confirm positive economic outcomes for the Ore Reserve. • The estimated Ore Reserve provided appropriately reflects the Competent Person's view of the deposit based on the modifying factors derived from the PFS and the updated Mineral Resource received and referred to in this announcement.

Criteria	JORC Code (2012) Explanation	Commentary
Audits or reviews	<ul style="list-style-type: none"> The results of any audits or reviews of Ore Reserve estimates. 	<ul style="list-style-type: none"> The Ore Reserve was developed by Mining Plus and subject to its internal review and audit process. Enthalpy conducted an Independent Review of all sections of this PFS other than Mineral Resource and Geotechnical. Mineral Resources Estimate was further reviewed by Ted Coupland consulting. Geotechnical assumptions were reviewed by PSM during development of mine parameters. O2 Mining, a Mongolia based consultancy, provided review of all study work packages. Graham Brock undertook review of the DRA process engineering and design work.

Criteria	JORC Code (2012) Explanation	Commentary
Discussion of relative accuracy/confidence	<ul style="list-style-type: none"> Where appropriate a statement of the relative accuracy and confidence level in the Ore Reserve estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the reserve within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors which could affect the relative accuracy and confidence of the estimate. The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used. Accuracy and confidence discussions should extend to specific discussions of any applied Modifying Factors that may have a material impact on Ore Reserve viability, or for which there are remaining areas of uncertainty at the current study stage. It is recognised that this may not be possible or appropriate in all circumstances. These statements of relative accuracy and confidence of the estimate should be compared with production data, where available. 	<ul style="list-style-type: none"> The Ore Reserve applied procedures include numerous levels of review, benchmarking comparison and risk assessment, to determine accuracy within the stated confidence limits. The level of accuracy of the PFS is +/- 25%. <p><u>Considerations in favour of a high confidence in the Ore Reserves include:</u></p> <ul style="list-style-type: none"> Detailed analysis and consideration of local Mongolian costs at a PFS level to best reflect the costs during the operations The process flowsheet is relatively simple producing a saleable concentrate and gold doré. The study team comprises an experienced team of experts with various background and expertise, with a mix of Mongolian and international experience in similar projects, to ensure identification of the most appropriate approach for project development as determined in the PFS. <p><u>Considerations in favour of a lower confidence in the Ore Reserves include:</u></p> <ul style="list-style-type: none"> Commodity prices and exchange rate assumptions are subject to market forces and present an area of uncertainty. There is a degree of uncertainty associated with geological estimates. The Reserve classifications reflect the levels of geological confidence in the estimates. There are risks associated with impacts of natural phenomena including geotechnical assumptions, hydrological assumptions, and the modifying factors, commensurate of the PFS level detail of the study. The Ore Reserve is based on a global estimate. Modifying factors have been applied on a local scale.

Criteria	JORC Code (2012) Explanation	Commentary
<p>Discussion of relative accuracy/confidence</p> <p>(continued)</p>		<ul style="list-style-type: none"> • The PFS project has identified a material risk to the project water supply. The PFS has partially mitigated this risk to its water supply, and this will continue to be a core focus of the BFS with a forward work plan developed. This plan was developed by a team of competent persons & experts with contributions from SRK, a qualified Mongolian hydrogeologists from Litho exploration, the Kharmagtai government & community relations team, and O2 Mining. The project has a substantial water resource established nearby, but significant amounts of additional make-up water will be required to be identified to meet the full Stage 1 demand. Current predictions Kharmagtai requires approximately 350ML/s make-up water supply for Stage 1, which is roughly doubled for Stage 2. Additional pumps and water pipelines are included in the PFS costing assuming water will be required to be pumped from other sources to site for the make-up water. • A BFS is planned to commence in Q1 2025.



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OCTOBER 2024

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