



**NiWest Nickel-Cobalt Project**

# **DEFINITIVE FEASIBILITY STUDY**

## **EXECUTIVE SUMMARY**

## **2024**

# CONTENTS

<b>1.0 INTRODUCTION</b>	<b>4</b>
1.1 NiWest Nickel-Cobalt Project	4
1.2 Project Background	4
1.3 Project Description	5
<b>2.0 PROJECT LOCATION AND INFRASTRUCTURE</b>	<b>6</b>
<b>3.0 LAND AND LEGAL</b>	<b>7</b>
<b>4.0 ENVIRONMENT, SOCIAL AND GOVERNANCE</b>	<b>8</b>
4.1 Natural Environment	8
4.2 Flora and Vegetation	8
4.3 Terrestrial Fauna	8
4.4 Subterranean Fauna	8
4.5 Inland Waters	8
4.6 Terrestrial Environmental Quality	9
4.7 Air Quality	9
4.8 Greenhouse Gas Emissions	9
4.9 Environmental Approvals	10
4.10 Aboriginal Heritage	10
4.11 Natural and European Heritage	10
4.12 Native Title	10
<b>5.0 GEOLOGY</b>	<b>11</b>
5.1 Regional Geology	11
5.2 Local Geology	11
5.3 Mineral Resource Estimate	12
<b>6.0 MINING AND ORE RESERVE</b>	<b>13</b>
6.1 Mining	13
6.2 Ore Reserve	14
<b>7.0 METALLURGY</b>	<b>15</b>
<b>8.0 ORE PREPARATION AND HEAP LEACH</b>	<b>16</b>
8.1 Heap Leach	16
8.2 Ore Preparation	17
<b>9.0 REFINERY</b>	<b>18</b>
9.1 Key Specifications	18
9.2 Refinery Circuits	18
9.2.1 Neutralisation, counter current decantation area	18
9.2.2 Residue handling area	18
9.2.3 Solvent extraction area	18
9.2.4 Product purification, crystallisation and handling area	18

<b>10.0 TAILING AND RESIDUE</b>	<b>19</b>
<b>11.0 SULPHURIC ACID AND POWER GENERATION</b>	<b>20</b>
<b>12.0 ENVIRONMENT, SOCIAL AND GOVERNANCE</b>	<b>21</b>
<b>13.0 NON-PROCESS INFRASTRUCTURE</b>	<b>21</b>
<b>14.0 BULK HANDLING LOGISTICS</b>	<b>22</b>
14.1 Import - Reagents	22
14.2 Export - Product	22
<b>15.0 CAPITAL COSTS</b>	<b>23</b>
15.1 Pre-Production Capital Costs	23
15.2 Sustaining Capital Costs	23
<b>16.0 OPERATING COSTS</b>	<b>24</b>
<b>17.0 IMPLEMENTATION</b>	<b>25</b>
<b>18.0 OPERATIONS</b>	<b>26</b>
18.1 Corporate	26
18.2 Mining	26
18.3 Heap Leach	26
18.4 Refinery	26
18.5 Acid Plant	26
<b>19.0 MARKET OUTLOOK</b>	<b>27</b>
19.1 Supply Constraints	27
19.2 Geopolitical Considerations	27
19.3 Nickel Price Recovery	28
<b>20.0 ECONOMIC ANALYSIS</b>	<b>29</b>
20.1 Financial Model Parameters	29
20.2 Financial Model Outcomes	30
20.3 Sensitivity	32
20.4 Financing Structure	33
<b>21.0 RISK AND OPPORTUNITY</b>	<b>34</b>
<b>22.0 PROJECT EXPANSION</b>	<b>35</b>
22.1 Capital Costs	35

# 1.0 INTRODUCTION

## 1.1 NiWest Nickel-Cobalt Project

Alliance Nickel Limited (Alliance or the Company), formerly known as GME Resources Limited, is a publicly listed company on the Australian Securities Exchange (ASX: AXN).

The Company is an emerging integrated battery chemicals producer, focused on developing its high grade, low carbon NiWest Nickel-Cobalt Project ('NiWest' or the 'Project'), located near Leonora, WA, and adjacent to Glencore's Murrin Murrin mining operation. The Murrin Murrin area is globally recognised as an established and well-endowed nickel and cobalt producing region. The Company owns 100% of the Project through its wholly owned subsidiary NiWest Limited.

The Company is targeting sustainable and ethical production of premium end, high purity, Inflation Reduction Act (IRA) compliant nickel sulphate and cobalt sulphate, both direct ship precursor products for battery cathode manufacturers. The Company's strategy is aligned with the Australian Federal Government's critical minerals strategic objectives of building sovereign capability in critical minerals processing and extracting more value from onshore resources.

The Project's construction, commissioning and start of production is ideally timed to meet the forecast demand-supply imbalance expected towards 2030 as governments globally legislate against the continuing production of the internal combustion engine.

The Project will be a major new project for the state of Western Australia and will be at the forefront of Australia's contribution to the continued development and global adoption of electric vehicles. The heap leach operation will take advantage of key recent developments in the treatment of nickel laterite ores without the need for the usual high capital cost HPAL circuits which impose severe operating conditions on the equipment with attendant safety risks to the operations and maintenance personnel.

The focus of the NiWest Project Definitive Feasibility Study (DFS) was for the construction and operation of a project with a production capacity of 20,000 tonnes per annum (t/a) of nickel as high-purity nickel sulphate hexahydrate crystal and around 1,500 t/a of high-purity cobalt as cobalt sulphate heptahydrate crystals.

The purpose of this executive summary is to provide a summary of the key technical, environmental, governance and economic conclusions delivered in the DFS.

## 1.2 Project Background

GME commenced exploring for nickel and cobalt over its tenements comprising the NiWest Project in the mid-1990s. Exploration activity progressed through to the mid-2000s with extensive drilling programs that developed into a series of initial resource estimates. This activity was coupled with an extensive metallurgical testing program that culminated in a focus on 'low capital' cost heap leach technology.

In August 2018, the Company completed a Pre-Feasibility Study (PFS) on the Project that confirmed the technical and financial robustness of a long-life operation directly producing high-purity nickel and cobalt sulphate products to be delivered into the forecast rapid growth lithium-ion battery raw material markets (for full details of the PFS see ASX release dated 2 August 2018).

In July 2022, Alliance completed an update of the PFS financial model to reflect changes to the market and include an assessment of the order of magnitude increase to NiWest Project capital and operating cost estimates (Updated PFS) (for full details see ASX release dated 21 July 2022). This process saw revised estimated costs requested from select suppliers of high-value operational and capital equipment and consumable materials.

The Updated PFS demonstrated that the Project continued to be economically and commercially robust and based on the outcomes of the Updated PFS the Board resolved to commence a Definitive Feasibility Study (DFS).

On 1 November 2022, the DFS commenced with the appointment of Australian engineering company Ausenco Services Pty Ltd. (Ausenco) to deliver the DFS process and non-process infrastructure engineering. This was followed by further appointments for engineering design of the acid plant, specialised design of the heap leach area, site wide water management, mining consultancy, hydrology and resource modelling across all deposits.

In 2023, the Company entered into a binding offtake agreement and share subscription agreement with Stellantis N.V. (NYSE: STLA / Euronext Milan: STLAM / Euronext Paris: STLAP) (Stellantis) relating to future offtake from the NiWest Project.

The binding offtake agreement is for the first five years of operation at the NiWest Project, with Alliance supplying approximately 170,000t of nickel sulphate and 12,000t of cobalt sulphate over this initial five-year period. Conditions Precedent include successful start-up of commercial production, product qualification and other clauses customary for an agreement of this nature. Pricing will be linked to LME index pricing on a take-or-pay basis.

Under the share subscription agreement, Stellantis subscribed for A\$15 million in new equity in Alliance at a subscription price of A\$0.18 per share.

Significantly, the NiWest Project has been granted Major Project Status (MPS) by the Australian Federal Government. MPS is awarded to Australian companies and projects identified by the Australian Government to be strategically significant and have the potential to contribute considerably to the nation's economic growth and employment opportunities.

Through the Major Projects Facilitation Agency, Alliance will receive additional support in navigating and coordinating complex Federal and State regulatory approvals for a period of three years. NiWest was the first Australian nickel project to be granted MPS since nickel was added to the Critical Minerals List in February 2024.

In 2024, following selection by the Australian Federal Government, the NiWest Project was also endorsed as a Mineral Security Partnership (MSP) strategic project. The MSP was officially launched in 2022 as a collaboration of 14 countries (including the Republic of Korea, the US and the European Union), the purpose of which is to catalyse public and private investment in the global supply chains of critical minerals. This endorsement has strengthened the Company's relationship with MSP countries and importantly raised the Company's profile with Export Credit Agencies that are expected to lead the Project's debt financing strategy. The Company has already received

conditional project finance support from Export Finance Australia (EFA), Australia's export credit agency.

## 1.3 Project Description

The NiWest Project is designed as an open pit surface mining operation using conventional mining methods, processing approximately 2.3 million tonnes per annum (Mt/a) to produce high quality nickel and cobalt sulphate crystal products.

The ore will be crushed and then heap leached using an on/off heap leach pad configuration, with sulphuric acid used to leach the nickel and cobalt from the ore. Pregnant liquor solution (PLS) will be recovered from leaching and neutralised prior to recovery of nickel and cobalt through solvent extraction, precipitation and crystallisation.

The Project development and commissioning schedule includes a 22-month on-site construction ramp up period to full operational capacity of 20,000 tonnes per annum (t/a) of nickel metal as high-purity nickel sulphate hexahydrate crystal and 1,500 t/a of high-purity cobalt metal as cobalt sulphate heptahydrate crystals.

The production outcomes reflect the first 12 years of mining at the Mt Kilkenny Site (mining high grade and low grade for stockpiling and future processing) and the overall operating strategy of processing higher grade (HG) ore for the first 27 years of operation followed by an 8-year period of processing previously mined and stockpiled low-grade ore (LG).

Item	Units	First 27 Years (Mt Kilkenny)	First 27 Years	LOM (HG + LG Stockpiles)
Site construction period	Months	22	22	22
Evaluation period	Years	12	27	35
<b>Mining</b>				
Mining activities	Years	12	27	27
Ore mined (99% from Ore Reserve)*	Mt	41.0	85.5	85.5
Waste mined	Mt	108.2	167.4	167.4
Strip ratio	Waste/ore	2.6	2.0	2.0
<b>Processing</b>				
Ore processed	Mt	29.2	65.8	85.5
Processing life	Years	12	27	35
Nickel head grade	% Ni	1.05	1.06	0.94
Cobalt head grade	% Co	0.08	0.07	0.06
Steady-state nickel recovery	%	78	78	78
Steady-state cobalt recovery	%	85	85	85
Contained nickel produced	kt	239.8	529.2	627.3
Nickel sulphate produced (>99.9% purity) (EV battery grade)	kt	1,073.9	2,369.7	2,809.4
Contained cobalt produced	kt	19.6	40.2	47.0
Cobalt sulphate produced (>99.9% purity) (EV battery grade)	kt	94.9	194.4	224.3

**Table 1: Technical Design Parameters and Production Outcomes**

# 2.0 PROJECT LOCATION AND INFRASTRUCTURE

The Project is in central southern Western Australia, approximately 650 km northeast of Perth, in an established mining area. It lies between the towns of Laverton and Leonora, approximately 80 km southwest of Laverton and 50 km southeast of Leonora as shown in Figure 1.

NiWest is also about 35 km south of the existing Murrin Murrin Nickel Operation consisting of a High-Pressure Acid Leach (HPAL) Plant and Nickel Refinery that has been in operation, producing nickel and cobalt product since 2000.

The NiWest Project incorporates seven separate project areas within a 50-kilometre radius of the proposed plant site at Mt Kilkenny and is in close proximity to critical open access infrastructure such as rail and gas lines and sealed arterial roads. Leonora has a domestic airport located 2km from the town centre and flights will be chartered to enable efficient short cycle changeovers for construction and operations personnel.

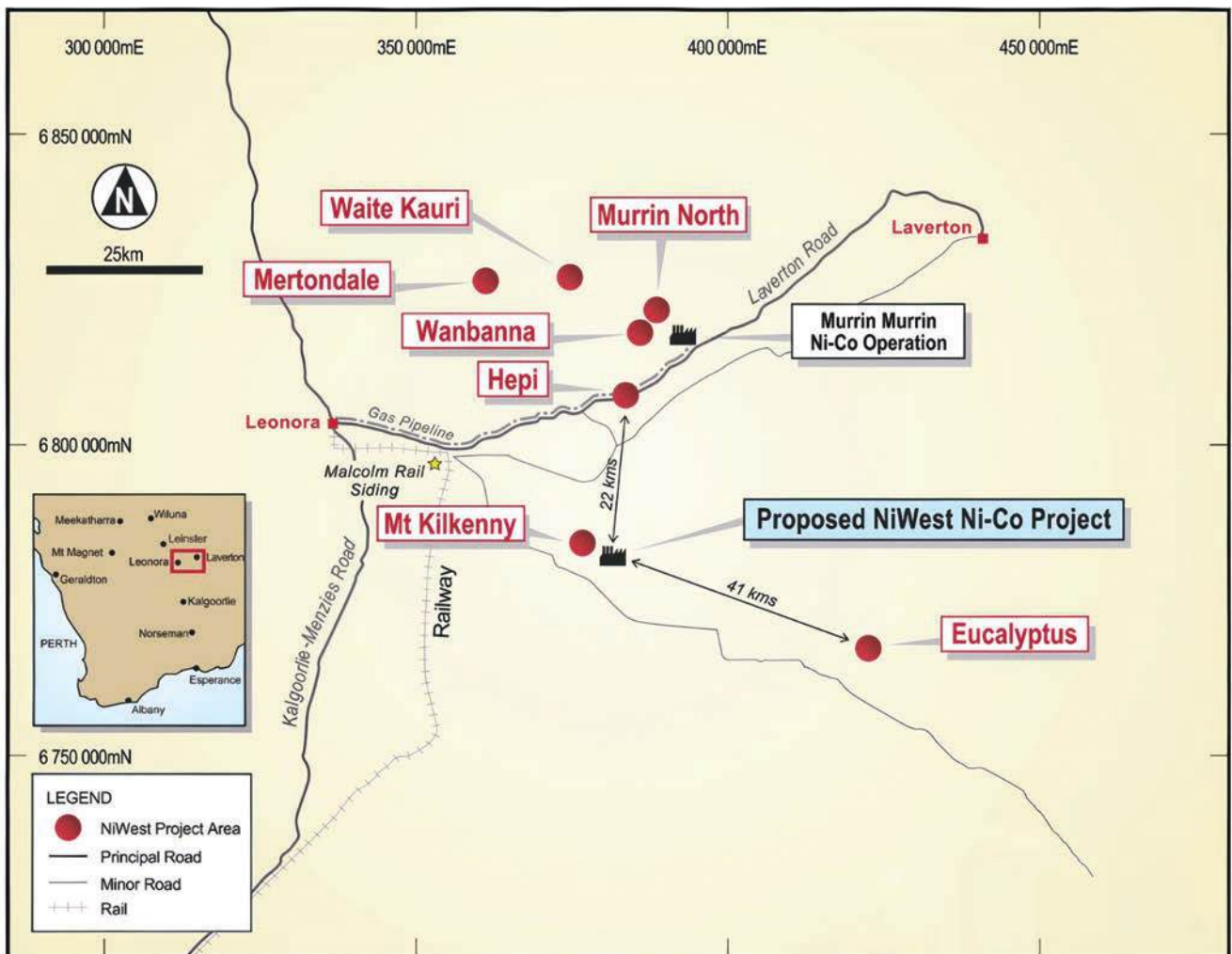


Figure 1: NiWest Project Location

## 3.0 LAND AND LEGAL

NiWest has substantially completed the approval process for the mining tenure required for the mining and processing of nickel and cobalt for the first phase of production from Mt Kilkenny.

The tenure required for the first 12 years of mining operation at Mt Kilkenny, which is also the subject of the EPA Approvals Application submitted for the Project, is summarised in Table 2.

Mining Tenement	Type	Current Status	Primary Purpose	Site
E39/1784	Expiration Licence	GRANTED	Exploration/buffer	Mt Kilkenny
G39/17	General Purpose Lease	GRANTED	Construction and operation of processing infrastructure	Mt Kilkenny
L39/341	Miscellaneous Licence	GRANTED	Road access to G39/37 and ancillary	Mt Kilkenny
M39/878	Mining Lease	GRANTED	Mining of ore body	Mt Kilkenny
M39/879	Mining Lease	GRANTED	Mining of ore body	Mt Kilkenny
P39/6225	Prospecting Licence	GRANTED	Exploration/buffer	Mt Kilkenny
L36/286	Misc Licence	GRANTED	Borefield	DS Borefield
L36/289	Misc Licence	PENDING	Pipeline	DS Pipeline
L36/290	Misc Licence	PENDING	Pipeline	DS Pipeline
L37/277	Misc Licence	PENDING	Pipeline	DS Pipeline
L37/278	Misc Licence	PENDING	Pipeline	DS Pipeline
L37/279	Misc Licence	PENDING	Pipeline	DS Pipeline
L37/280	Misc Licence	PENDING	Pipeline	DS Pipeline
L39/377	Misc Licence	PENDING	Pipeline	DS Pipeline
L57/72	Misc Licence	GRANTED	Pipeline	DS Pipeline

**Table 2: Summary of Mt Kilkenny Mining tenure**

The remaining tenure to be granted for the Project to be 'construction ready' relates to the 7 tenement applications that make up the pipeline corridor between the Depot Springs Borefield and the Mt Kilkenny site. The pipeline corridor comprises 8 miscellaneous licences, one of which has been granted. These are currently progressing through the Mining and Native Title Act requirements. The Company

does not anticipate any material delays in the process for the tenure to be granted and the usual expected timelines for grant are reflected in the Project's corporate schedule.

All existing granted tenure for the LOM deposits in Hepi, Wanbanna and Eucalyptus are in good standing, with no encumbrances.

# 4.0 ENVIRONMENT, SOCIAL AND GOVERNANCE

## 4.1 Natural Environment

The Project site has an arid climate with hot summers and cool winters. The monthly mean temperature ranges from a high in January of 37.0 °C to a low in July of 6.1°C. The highest recorded maximum temperature is 49.0 °C and the lowest recorded minimum temperature is -2.8 °C. Rainfall is generally sparse in the region making the region ideal for heap leach technology.

The project is in the Eastern Murchison subregion in the Murchison Interim Biogeographic Regionalisation for Australia (IBRA) region. The vegetation of the Eastern Murchison subregion is dominated by Mulga Woodlands often rich in ephemerals; hummock grasslands; saltbush shrublands; and samphire shrublands.

Importantly, there are no significant landforms, conservation reserves or surface water bodies that are considered environmentally sensitive areas in or near the project area.

## 4.2 Flora and Vegetation

Field surveys have been conducted for the Mt Kilkenny tenements and desktop surveys, with a buffer of 50km around the four mine sites, have been undertaken for Mt Kilkenny, Hepi, Wanbanna and Eucalyptus tenements. No Threatened Ecological Communities (TECs) or Priority Ecological Communities (PECs) that are in or near any of the four mine areas were noted during the desktop assessment. Similarly, no taxa (a collection of one or more populations of organisms) listed as Threatened under State and Commonwealth legislation was recorded. The desktop survey recorded the possible existence of 27 Priority taxa however, none of these were listed as threatened. The field survey result for Mt Kilkenny confirmed that there were no TECs, PECs or threatened taxa and only one Priority taxa being recorded out of the 27 possible taxa identified during the desktop study.

The survey work to date has identified no vegetation forming an ecological community of conservation significance and no Threatened taxa.

The Company's management of impacts to flora and vegetation will be consistent with industry best practice and include minimising clearing to the maximum extent practicable, and ensuring all clearing is within authorised boundaries and limits and ongoing prior and post-disturbance inspections by environmental personnel.

## 4.3 Terrestrial Fauna

Desktop and field surveys have been conducted for the Mt Kilkenny tenements, and desktop only for the calcrete quarry, Hepi, Wanbanna and Eucalyptus.

The desktop surveys identified certain species of conservation significance that may occur in the surveyed areas, however, there was no evidence during the field survey at Mt Kilkenny of Threatened or Priority fauna that were of conservation significance.

Management of any potential impacts to terrestrial fauna will be consistent with industry best practice.

## 4.4 Subterranean Fauna

Subterranean fauna occur underground in voids above the water table (troglifauna) or in the groundwater itself (stygo fauna). If they are restricted in distribution, they may be of interest to the EPA in terms of their conservation.

A review of data, regional surveys and available literature indicates that the main mine pit areas at Mt Kilkenny are unlikely to contain core troglifauna habitat. There is some evidence from diamond core photographs of an environment which may provide a moderately prospective habitat for stygo fauna and further assessment of the relevance of subterranean fauna at Mt Kilkenny will be required once geological logs and hydrogeological information is obtained from any future drilling programmes.

With regard to the likely subterranean fauna populations at the calcrete quarry and in the borefield operations, detailed surveys will be undertaken in 2025 in accordance with guidelines issued by the Environmental Protection Authority (EPA 2021). Alliance has engaged a leading Western Australian consultancy to conduct the surveys.

## 4.5 Inland Waters

No environmental impacts on surface water are anticipated. Drainage management in relation to Kilkenny Creek will be required to ensure the safe operation of the mining and processing areas. However, there is no proposed discharge of water from site.



## 4.6 Terrestrial Environmental Quality

Soil at Mt Kilkenny is generally suitable for use in rehabilitation and there are no material issues with the management of waste rock. However, ongoing testing of waste rock will be undertaken during operations.

## 4.7 Air Quality

Emissions from mining activity and the process plant have been modelled. The expected emissions include, particulate matter, select trace metals and combustion and operational gases. Management of impacts to air quality will be consistent with industry best practice and will comprise watering the roads to minimise wheel-generated dust and the process plant will be operated in accordance with an Operating Licence issued under Part V of the Environmental Protection Act 1986 which will require regular monitoring of emissions and reporting of performance against selected criteria.

## 4.8 Greenhouse Gas Emissions

The Project's Greenhouse Gas Emissions (GHG) for the first ten years of operations have been modelled. Scope 1 GHG emissions are 17.9 kg CO<sub>2</sub>-e per kg Ni/Co (equivalent to 4.0 kg CO<sub>2</sub>-e per kg of product) with Scope 3 emissions averaging 79,700 t CO<sub>2</sub>-e per year and primarily comprising the transport of reagents to site. No Scope 2 emissions have been identified.

Alliance will need to report emissions under the National Greenhouse and Energy Reporting Act 2007 (NGERS). The NGERS will require the Project to register and annually report GHG emissions, energy production and energy consumption of the NiWest Project.

Under the Commonwealth's Safeguard Mechanism (SGM), the SGM is 'triggered' once the facility has emitted more than 100,000 t CO<sub>2</sub>-e in a single year. The project will be subject to a new facility baseline, set by the Commonwealth and based on international best practice benchmarks that will apply from the financial year in which greater than 100 kt CO<sub>2</sub>e scope 1 GHG emissions arise. This scope 1 trigger, for NiWest, will be exceeded in the first year of operation (consistent with most mining operations). The major source of GHG emissions is via the partial neutralisation of the Pregnant Leach Solution using calcrete.

A number of desktop studies were carried out through the course of the DFS to identify and evaluate potential pathways for the sequestration of carbon dioxide, the majority of which is produced by the neutralisation of the leach liquor prior to extraction of nickel and cobalt. It is proposed to carry out more study work during the FEED and early production stages to design the flow sheet options and carry out sufficient engineering to evaluate a final option for implementation.

Based on a 40% reduction of CO<sub>2</sub> emissions from the neutralisation circuit, Scope 1 GHG emissions would reduce from 17.9 to 9.3 kg CO<sub>2</sub>-e per kg Ni/Co, and a subsequent further 40% decrease would reduce this further to 3.7 kg CO<sub>2</sub>-e per kg Ni/Co.

During the environmental assessment process, Alliance will be required to provide a Greenhouse Gas Management Plan that outlines a pathway for reducing Scope 1 emissions over the life of the project and being net zero by 2050.

This can be achieved either through:

- ✓ The acquisition of Australian Carbon Credit Units ("ACCUs") or their equivalent
- ✓ Reducing emissions through carbon sequestration
- ✓ A combination of these two options

The Project may be able to benefit from Emissions-intensive, trade-exposed ('EITE') treatments, including accessing grant funding and potentially a lower baseline decline rate.



Figure 2: AXN CEO and Managing Director Paul Kopejtko, SRM Project Manager Luc Saulnier and Non-Executive Director Klervi Ménahèze pictured at the NiWest Project site

## 4.9 Environmental Approvals

The primary environmental approval required is a Ministerial Statement under Part IV of the Western Australian Environmental Protection Act 1986 (EP Act). In October 2023, the primary approval pathway commenced with the lodgement of a formal referral and supporting information with the Western Australian Department of Water and Environmental Regulation (DWER). This was assessed by the Environmental Protection Authority (EPA) with the assistance of DWER.

The EPA determined that the Mt Kilkenny project will be assessed based on Referral Information with additional information required under s. 40(2(a)), with four weeks public review (s.40 (5)). This is the lowest level of EPA assessment and supports the Company's opinion that no significant environmental issues exist for the Project at the Mt Kilkenny site, where the first 12 years of mining operations will occur.

The final approval under Part IV, a decision by the Minister for the Environment, is following submission by the Company of an environmental impact assessment (expected in 2025) and a final environmental report from the EPA.

Following ministerial approval, the Company will seek secondary approvals for construction works (EP Act), an operating licence (EP Act) and a mining proposal and mine closure plan (Mining Act 1978). Each of these secondary approvals have target timeframes of between 30 and 60 business days.

## 4.10 Aboriginal Heritage

Aboriginal heritage in Western Australia is primarily protected by the Aboriginal and Torres Strait Islander Heritage Protection Act 1984 (Cth) (Commonwealth Heritage Act) and the Aboriginal Heritage Act 1972 (WA) (AH Act). Broadly, it is an offence to impact an Aboriginal site unless a person did not know, and could not reasonably be expected to have known, that the impacted place was an Aboriginal site (AH Defence) or if the person was acting with Ministerial consent (Ministerial Consent).

Prior to undertaking ground disturbing works, the Company's policy is to ensure ethnographic and archaeological survey works are completed. Where the surveys confirm the absence of Aboriginal sites, the Company will have the benefit of the AH Defence.

Where surveys confirm the existence of an Aboriginal site in an area, or an Aboriginal site has previously been registered for an area, NiWest will endeavour to avoid any impact to that Aboriginal site, but if impact is unavoidable, Ministerial Consent will be sought.

Following enquiry with the Department of Planning, Land and Heritage (DPLH), NiWest has determined it will need to seek Ministerial Consent for the Borefield Pipeline Corridor licences which cross some creeks and salt lakes, which have been registered as Aboriginal sites.

Aboriginal heritage and culture may also be protected under the EP Act. Accordingly, when commissioning ethnographic surveys, NiWest requests that the anthropologist additionally address the presence, and potential impact, to aesthetic, cultural, economic and social surroundings. To date, no ethnographic surveys have highlighted the presences of such surroundings.

## 4.11 Natural and European Heritage

There are no known areas of significant natural or European heritage that are expected to be affected by the Project.

## 4.12 Native Title

Native title is legislated by the Native Title Act 1993 (Cth) (NT Act). The Mt Kilkenny tenements lie over three native title areas held by the Nyalpa Pirniku people, the Darlot people and an area where native title remains unclaimed and undetermined (Unclaimed Area). Depot Springs North, a location for expansion case tenure for borefield water supply, is subject to native title held by the Tjiwarl people.

The NT Act gives rise to two primary implications for the Project.

Firstly, applications for mining tenements must comply with the requirements of the NT Act before they may be validly granted by the State (Validation Requirement). With one exception, all Mt Kilkenny Tenements have satisfied the Validation Requirement. The exception relates to one of the eight Depot Springs South pipeline corridor licences which has been objected to by the Nyalpa Pirniku people. NiWest Limited is consulting with the Nyalpa Pirniku People with a view to the objection being withdrawn, failing which the objection will be heard by an independent person in accordance with the NT Act.

The Company is confident that the objection will be resolved well in advance of any hearing by the independent person and does not believe that native title presents any risk to the project:

Secondly, mining tenements granted or renewed after 11 January 1999 may require the tenement holder to pay compensation to the native title holders (NT Compensation).

The Company has not fully resolved the question of NT Compensation payable to any affected native title holders, but it is confident that any claims will be resolved amicably.

# 5.0 GEOLOGY

## 5.1 Regional Geology

The NiWest deposits, which are located within the Yilgarn Craton in Western Australia, are classified as dry climate nickel laterites. They are hosted within lithologies of the Kurnalpi Terrane which, along with the Kalgoorlie Terrane and Burtville Terrane, form the Eastern Goldfields Superterrane.

## 5.2 Local Geology

The NiWest deposits are all hosted within the Murrin Domain which, from the bottom up, consists of the following formations:

- ◉ Welcome Well Formation – andesitic conglomerate, sandstones, and siltstones intercalated with andesitic-basaltic lava flows
- ◉ Minerie Formation – tholeiitic basalts intercalated with lesser amounts of turbiditic sediments and komatiitic basalts
- ◉ Murrin Murrin Formation – ultramafic and komatiitic basalts intercalated with lesser amounts of clastic sedimentary beds (predominantly sandstone).
- ◉ Pig Well Formation – conglomerate and feldspathic sandstones

Elevated nickel and cobalt concentrations occur in the regolith profile that has developed over the serpentinised peridotite cumulates of the Murrin Murrin Formation. The regolith layer, which is typically around 30 m thick, shows distinct grade and textural changes with depth. These changes have resulted from the intense weathering of the serpentinised peridotites. The serpentinised olivines are initially converted to magnesium-rich clays (saponites and chlorites), which in turn are converted to iron-rich, smectitic clays (nontronite), and then to goethite, hematite and kaolinite.

In order to describe and model these characteristics, the profile has been divided into the following sub-horizontal layers (from the top down). These definitions and terminology are similar to those used for other deposits in the region (including Murrin Murrin):

- ◉ Ferruginous zone (FER)
- ◉ Smectite zone (SME)
- ◉ Saprolite zone (SAP)
- ◉ Saprock zone (SPR)



Figure 3: Exploration activity at NiWest Project site

### 5.3 Mineral Resource Estimate

Mineral Resources were declared for seven lateritic nickel deposits in the Project area between 2017 and 2020. As part of the DFS, Alliance engaged independent international consultant SRK Consulting (Australasia) Pty Ltd (SRK) to prepare an update of the mineral resource models and estimates for the Mt Kilkenny, Hepi, Eucalyptus and Wanbanna nickel deposits that form the mineral resources inventory to support the DFS.

SRK prepared new resource models for the Mt Kilkenny, Hepi and Wanbanna deposits that incorporated results from the recent drilling of 180 infill holes for 8,318 metres and 20 geotechnical and sterilisation holes for a total of 808 meters. A new resource model was not prepared for Eucalyptus. Instead, SRK used the results obtained from a 2022 metallurgical sampling program to update the bulk densities, convert the 2018 model to a format consistent with the models for the other three DFS deposits, and conduct sufficient review of the 2018 resource model to enable SRK to report the estimates with the revised densities and different reporting cut-off grades.

The Mineral Resource Estimate (MRE) for the remaining three deposits (Waite Kurri, Mertondale and Murrin North) did not change since the most recent models were prepared in 2017.

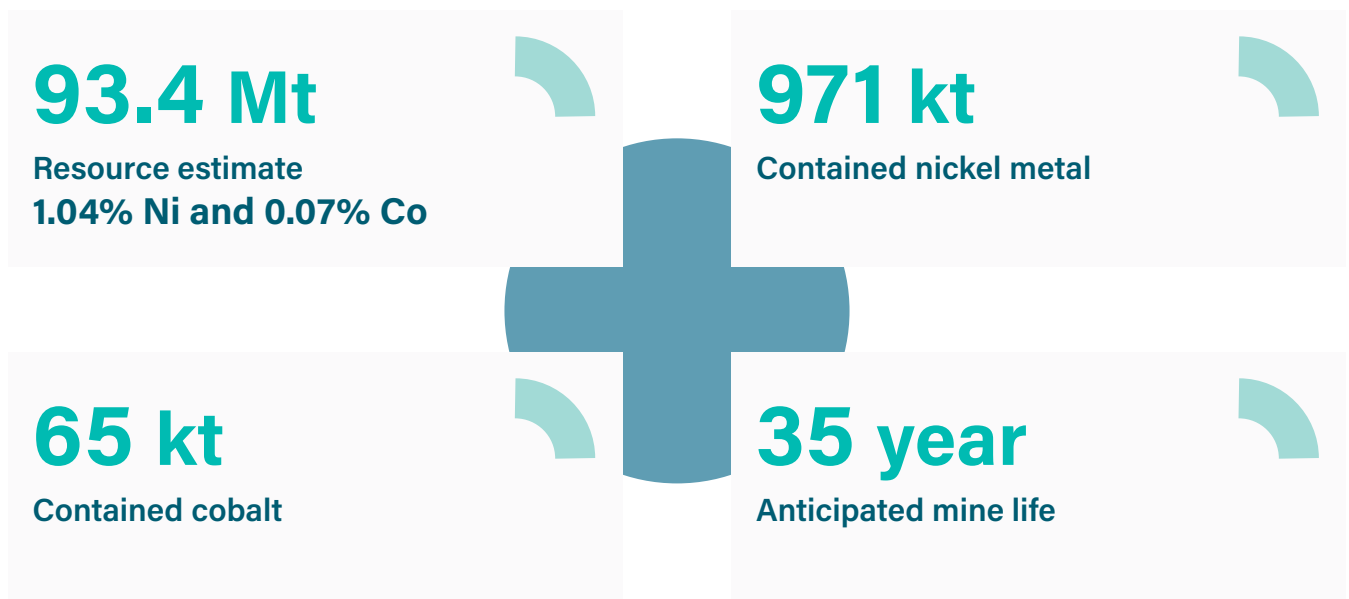
The MRE update resulted in an increase in the global NiWest Resource Estimate to 93.4Mt at 1.04% Ni and 0.07% Co (for 971kt of contained nickel metal and 65kt of contained cobalt metal). Approximately 83% (805kt of contained nickel) of the global MRE is now in the Measured & Indicated JORC category.

The inclusion of results from the infill drilling, conducted primarily to increase confidence in the Mt Kilkenny deposit, has resulted in a 16% increase in the global Measured and Indicated Resource Estimates. This delivered an increased geological confidence in the Mt Kilkenny deposit, the critical first stage of the NiWest mine plan. Table 3 below summarises the Mineral Resource for the Project.

Resource Category	Tonnes (million)	Nickel Grade (%)	Cobalt Grade (%)	Ni Metal (kt)	Co Metal (kt)
Measured	17.77	1.07	0.069	190	12.2
Indicated	58.04	1.06	0.073	615	42.4
Inferred	17.59	0.94	0.060	166	10.6
<b>Total</b>	<b>93.40</b>	<b>1.04</b>	<b>0.070</b>	<b>971</b>	<b>65.2</b>

**Table 3: Mineral Resource Estimate Upgrade Summary**

See ASX announcement 24 October 2023 (Note: Nickel cut-off grade 0.80%). The competent person for the Eucalyptus, Mt Kilkenny, Wanbanna and Hepi MREs was Mr Rodney Brown (SRK). There have been no changes to the MREs for Waite Kauri, Mertondale and Murrin North (See ASX Announcement 21 February 2017).



# 6.0 MINING AND ORE RESERVE

## 6.1 Mining

The mine plan will utilise conventional load and haul open pit mining techniques, with limited blasting. At Mt Kilkenny, a strip mine approach was adopted advancing along strike in regular cutbacks, with the pit voids being partially back-filled by waste from successive cut-backs to 1m above the pre-mining water table. After waste has been backfilled into the pit, ripios and process residue will also be backfilled into the Mt Kilkenny pit. This method has the advantages of reducing waste haulage distances and therefore costs, minimising the size and footprint of the (temporary) waste dump, avoiding the need for a separate residue or tailings dump and reducing ongoing and final rehabilitation and environmental works.

The Project will mine a total of 252.8 Mt (dry) of material over 27 years, comprising 85.5 Mt (dry) of crusher feed and 167.4 Mt (dry) of waste materials.

Commencement of ore mining activities is scheduled approximately seven months prior to first heap stacking operations, however mining activities for clearing and pre-strip will commence earlier to support bulk earthworks requirements for construction activities. The LOM plan incorporates four deposits (Mt Kilkenny, Wanbanna, Hepi and Eucalyptus) with mining initially focused on the Mt Kilkenny Deposit, which is predominately mined out over the initial 12 years following mine startup. Mining of the Hepi, Wanbanna and Eucalyptus deposits commences from year 11, year 12 and year 16 respectively, with these ores being trucked to the Mt Kilkenny site for processing.

In order to achieve the DFS production target of 20,000 tpa contained nickel, higher grade ore is preferentially treated for the first 27 years of operation with lower grade ore

stockpiled for processing during the next eight years. The mine plan also considers the minimisation of acid use, with high-acid consuming ore being blended or stockpiled for later treatment when suitable low-acid consuming ore is available for blending. All ore will be stockpiled on the Run of Mine (ROM) pad and allowed to partly dry before being fed as a blend to the crusher.

Execution of the mine production plan will be undertaken by a mining contractor with Alliance responsible for grade control, mine planning, mining supervision, and the supply of fuel. The mining contractor activities will also include feeding the crusher with blended ore by front end loader, haulage of ripios and processing residue from the heap and plant area, ore haulage by road train from Hepi, Wanbanna and Eucalyptus and management of all in-pit dewatering.

The mining contractor will also mine, crush and haul calcrete from the calcrete quarry to the Mt Kilkenny processing plant.

The mining contractor will supply all contract mining infrastructure and mining and support equipment, operating and maintenance labour and supervision. The operation will include drilling, blasting, and 130 to 200 t excavators will load 90 – 140 t haulage trucks. The Company will provide technical and management control over mining operations.

Pit optimisations, mine planning and scheduling works was conducted by Linton Kirk from Kirk Mining Consultants and Harry Warries from Mining Focus Consultants Pty Ltd.

Mining costs were developed from a Request for Quotation sent to a number of accredited mining service providers with evaluation and operating costs estimates compiled by Kirk Mining Consultants.

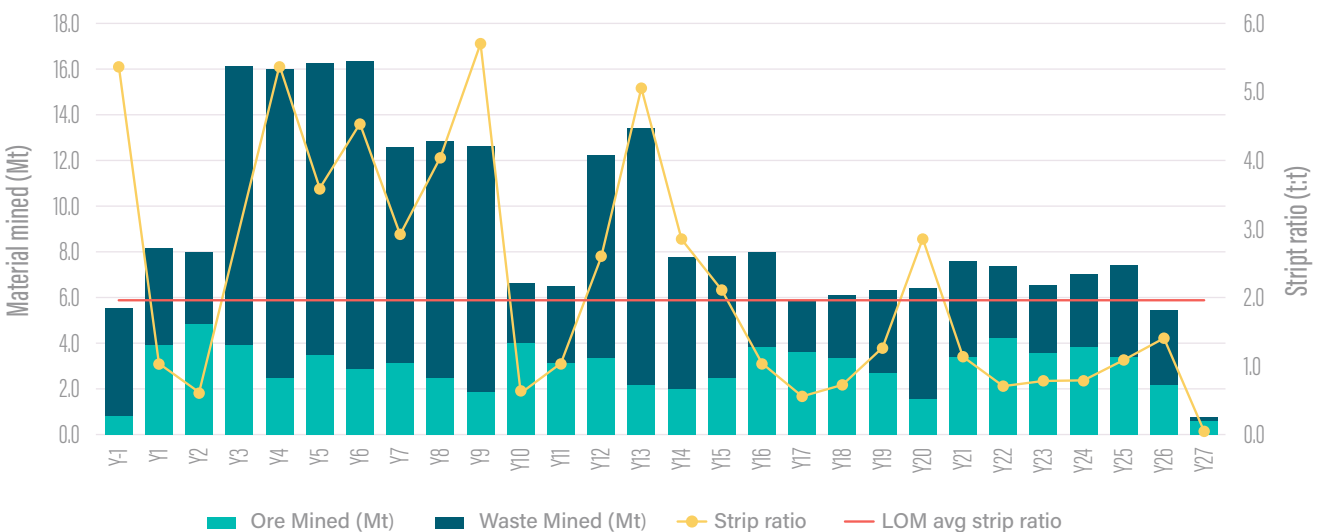


Figure 4: Consolidated Mining Schedule (First 27 Years of Operation)

## 6.2 Ore Reserve

A statement of Ore Reserves under the JORC 2012 Guidelines has been prepared with the results summarised in Table 4 below.

The reported Ore Reserves have been compiled by Mr Harry Warries and Mr Linus Sylwestrzak, both of whom are relying on Mr Rodney Brown who is the Competent Person for the Mineral Resources. Mr Sylwestrzak is responsible for metallurgy aspects of the Ore Reserves and Mr Warries is responsible for mining and other aspects of the Ore Reserves apart from Mineral Resources, metallurgy and processing.

The material assumptions and outcomes include several modifying factors (see Additional Information Required Under ASX Listing Rules Chapter 5.9 attached to the announcement), the JORC Table 1 attached to this announcement and the assumptions detailed in Tables 1, 6 and 7. All stated Ore Reserves are completely included within the quoted Mineral Resources and are quoted in dry tonnes. JORC Table 1 is included as an appendix and Competent Persons Statements are attached to this announcement

Deposit	Classification	Tonnes (Mt dry)	Ni (%)	Co (%)
Mt Kilkenny	PROBABLE	37.4	0.94	0.07
Hepi	PROBABLE	4.2	0.99	0.06
Wanbanna	PROBABLE	12.5	0.93	0.06
Eucalyptus	PROBABLE	31.4	0.93	0.06
<b>Total</b>	<b>PROBABLE</b>	<b>85.5</b>	<b>0.94</b>	<b>0.06</b>

Table 4: Ore Reserve Summary @ 0.5% Ni Cut Off



Figure 5: NiWest Project site activity

## 7.0 METALLURGY

Metallurgical testwork programs have been conducted on a range of ore samples from the Mt Kilkenny, Hepi, Wanbanna and Eucalyptus deposits to determine leach responses and select the final flowsheet for the NiWest Project.

The outputs from the extensive testwork programs (conducted over 10 years) have provided data for Ausenco to undertake process design as part of the DFS. More recent testwork has provided data to optimise key process parameters such as heap height, crush size and demonstrate the leach performance using saline water sources.

The project basis has advanced from 2 m high heap leach lifts to 4 m high lifts, and the project water source has changed from fresh water to moderately saline water. To mitigate precipitation in the heap leach due to higher total dissolved solids (TDS), the last 2 stages of the heap leach are designed to operate at an elevated temperature.

The metallurgy and process design was informed by the following testwork:

- ✓ Bulk column leach test work using 2 m high columns and fresh water to generate PLS
- ✓ Downstream PLS neutralisation, thickening, precipitation and SX testwork using PLS generated from the bulk testwork and fresh water supply
- ✓ Heap leach variability tests using 4 m high columns and fresh water
- ✓ 4 m high confirmatory column heap leach tests, using a synthetic saline leach solution based on closed circuit water balance simulations and operated at elevated temperature to demonstrate mitigation of precipitation in the heap, in progress

The testwork programs have independently tested and verified elements of the flowsheet and metallurgical response. The Company continues with the confirmatory closed circuit testwork which is expected to be completed in January 2025. This work includes:

4 m high columns at large diameter with closed circuit piloted leach solutions based on project water sources at design heap leaching temperature

During FEED, the Company shall undertake further optimisation works to review:

- ✓ Processing saline PLS solutions through the downstream unit operations of neutralisation, residue thickening and filtration, solvent extraction (Ni, Co and Zn)
- ✓ Purification of Ni and Co to saleable product specifications as part of the Customer Qualification sample program

Ausenco will assess the impact of these results against the DFS design and, if required, incorporate any changes upon commencement of the detailed Front End Engineering Design (FEED) design.



Figure 6: Completed columns being disassembled from column leaching workframe

# 8.0 ORE PREPARATION AND HEAP LEACH

## 8.1 Heap Leach

The NiWest Project utilises Heap Leach (HL) technology to leach nickel and cobalt metals from ore. HL is technically straight forward, quick to implement and cost effective when compared to the significantly more capital-intensive alternative of High-Pressure Acid Leach (HPAL) used for most laterites.

The heap leach pad is designed as a load-on/load-off type pad, with a maximum heap height of 4 m. The individual cells are designed based on topographic and stacking constraints, 227 m long and 50 m wide, equating to an overall leach pad size of 227 m wide and 1,050 m long.

The leach pad location and orientation was selected primarily to utilise the natural topography to minimise cut and fill volumes, reduce construction costs and minimise the hauling distance from the open pit to the heap leach pad and from the heap leach pad to the residue storage facility (assuming in-pit backfilling operations).

A summary of the heap leach parameters selected for the DFS is shown in Table 5.

Parameter	Units	Value
Heap height	m	4.0
Agglomerate crush size (P95)	mm	50
Stacked ore bulk density dry	t/m <sup>3</sup>	1.0
Leaching rate	m <sup>3</sup> solution / t ore	9.4
Irrigation rate	L/h/m <sup>2</sup>	14.0
Leach irrigation time	days	105
Nickel heap leach recovery	% Ni	80
Cobalt heap leach recovery	% Co	87
Acid consumption	kg/t	720

**Table 5: DFS Parameters for Heap Leach Pad Design**



**Figure 7: Heap leach conveyor stacker example**



## 8.2 Ore Preparation

The ore preparation area is located between the Run of mine (ROM) pad and the HL pad and includes the following sub areas:

- ⦿ Ore sizing
- ⦿ Agglomeration
- ⦿ Heap feed conveying

The objective of the ore preparation area is to produce moist, crushed ore at a P100 of 50 mm, pre-conditioned with acid, available for stacking in a 4 m high lift

ROM ore from the open cut mine is either delivered to the ROM pad or the low-grade stockpiles by rear-dump trucks. ROM ore, with a top size of 600 mm, is fed into the ROM bin by a CAT 990 front-end loader (FEL) or equivalent. A static grizzly is installed on top of the ROM bin to screen out any oversized ore. Oversized ore (more than 600 mm) or sticky clay particles that accumulate on the static grizzly are to be scraped off and removed with the FEL bucket.

ROM ore is reclaimed at a controlled rate from the ROM bin by a variable speed low-profile belt feeder. The belt feeder discharges the ROM ore into Ore sizer 1. Ore Sizer 1 discharge reports to Ore Sizer 2 Feed Conveyor which feeds Ore Sizer 2. The ROM and crushing circuit is shown in Figure 8.

In the agglomerator circuit, shown in Figure 9, crushed ore discharges onto the Crushed Ore Transfer Conveyor. The Crushed Ore Transfer Conveyor discharges onto the agglomerator Feed Conveyor. The ore is weighed by the weightometer and sampled by the cross-belt sampler before it is fed to the agglomerator. Sulphuric acid is added to the crushed ore in the drum via a spray manifold. Raffinate is also added to provide additional moisture as required.

Agglomerated ore is conveyed to an overland heap feed conveyor. The heap feed conveyor has a tripper which can move along the full length of the heap leach pad and can deposit the agglomerated ore at any point along the conveyor. The ore deposited from the tripper is conveyed via a retractable conveyor and radial stacker for placement onto the heap leach pad. The heap leach stacking is carried out in retreat.



Figure 8: Run of Mine (ROM) and crushing circuit diagram

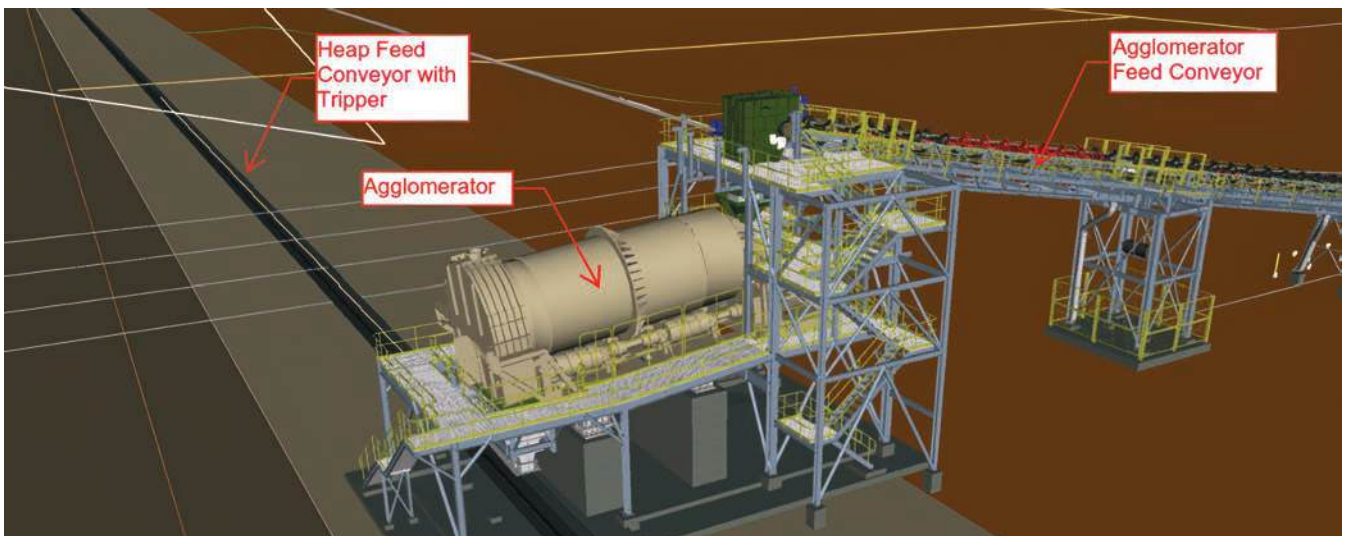


Figure 9: Agglomerator circuit diagram

# 9.0 REFINERY

## 9.1 Key Specifications

The processing refinery that will produce the Project's nickel and cobalt sulphates has been designed for the LOM and the treatment of 2.3 – 2.5 Mt/a of ore at a LOM average feed grade of 1.05% Ni (excluding the low grade ore treated after year 26). The process plant operating time is 95% (8,322 hours per annum) for downstream heap solution and 80% (or 7,008 hours per annum) for ripios and neutralisation reclaiming and transport.

The total acid consumption is 767 kg/t ore (including neutralisation and solvent extraction), with an overall nickel recovery as nickel sulphate of 78.0% (nominally 20,000 tonnes of contained nickel metal per annum) and an overall cobalt recovery as cobalt sulphate of 84.8% (nominally 1,500 tonnes of contained cobalt metal per annum).

## 9.2 Refinery Circuits

The processing refinery comprises 4 circuits described below.

### 9.2.1 Neutralisation, counter current decantation area

The purpose of the neutralisation circuit is to precipitate most of the ferric ( $\text{Fe}^{3+}$ ) ions, aluminium, zinc and copper and neutralise all of the free excess acid with a target product pH of 3.5. This area includes re-leach, PLS neutralisation, neutralised slurry thickening and counter-current decantation (CCD) washing.

The 2018 PFS included two stages of PLS neutralisation. This has been retained in the DFS design as no opportunity has been found to remove the second stage of neutralisation with the higher PLS concentrations.

### 9.2.2 Residue handling area

The residue handling area includes neutralised residue filtration, residue conveying and reclaim. The thickening and filtration circuit washes the majority of aqueous Ni from the residue and dewateres the residue for dry disposal.

### 9.2.3 Solvent extraction area

The solvent extraction area is split into the following major circuits:

- ⦿ Pre-extract circuit
- ⦿ Primary circuit
- ⦿ Zinc circuit
- ⦿ Cobalt circuit

The process objectives of the solvent extraction circuit are:

- ⦿ Remove impurities to achieve Ni and Co product specifications
- ⦿ Increase the Ni and Co concentrations prior to crystallisation
- ⦿ Minimise Ni and Co losses in the raffinate streams by optimising extraction efficiency
- ⦿ Minimise organic loss through entrainment

### 9.2.4 Product purification, crystallisation and handling area

The objective of the nickel purification is to remove any residual impurities to achieve the Ni product specification,

Nickel sulphate crystals are produced via a mechanical vapor recompression (MVR) forced circulation crystallisation system. Once crystallisation is complete, the slurry (40 to 50 %w/w solids) flows by gravity to centrifuges where crystals are separated from solution and demineralised water is used to wash the crystals. The wet cake is directed to the drying system, after which the product is bagged and packaged.



Figure 10: Alliance Nickel is positioned to deliver critical minerals for battery manufacturing

# 10.0 TAILINGS AND RESIDUE

Based on an ore processing rate of 2.3- 2.6 Mt/a plus the additional inputs to the process plant (sulphuric acid and neutralising agents) the total tonnage of residue generated by the project will be 4.1 Mtpa.

These residues comprise leached ore and neutralisation precipitates generated during the processing of liquors from the heap leach pad.

The heap leach depleted ore (ripios), neutralisation precipitates residue (residue) and evaporation pond solid residue will be deposited into a combined Residue Storage Facility (RSF).

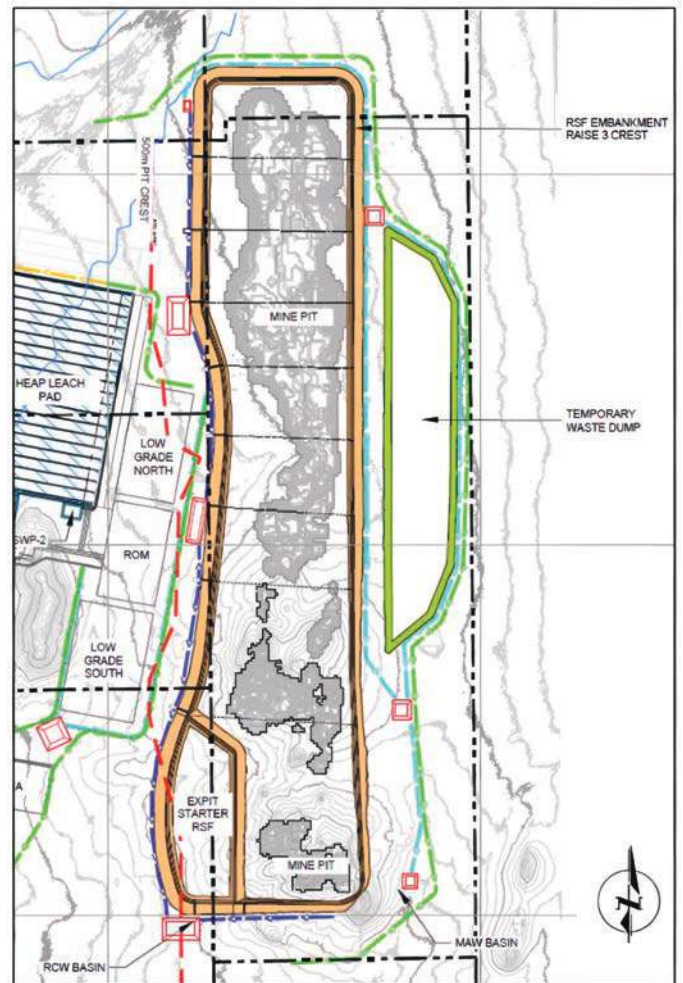
Disposal of the ripois and residues will be performed through dry stacking with truck haulage as the preferred residue disposal option. This is due to its lower initial capital cost requirements and the higher technical and environmental benefits.

The RSF is designed to utilise mined-out Mt Kilkenny partially back-filled pit voids and the space above them by constructing embankments surrounding the pits. Following removal of ore and mine waste from each pit, the pits will be backfilled with mine waste materials (waste rock generated in mining operations) up to the pre-mining groundwater level to reduce the risk of groundwater contamination caused by the residue materials. The residues will then be placed on top of mine waste materials within the pit void, continuing on top of the pit footprint and surrounding area. A low permeability layer (Zone A) will be placed on top of the mine waste materials within the pits and on top of the stripped natural ground outside the pits to minimise the seepage potential from residue materials.

A starter facility will be built in the southwest corner of the RSF, outside the pit area to provide storage for the initial stages of the operation prior to pit voids being available for residue storage.

The surrounding RSF embankment will be constructed from mine waste material and will act as a waste dump, erosion protection and contamination barrier for stacked residue.

The RSF has a capacity of 111 million m<sup>3</sup> to store residues generated by the process plant over a period of 27 years at a rate of approximately 4.1 Mt/a after the initial ramp up period. The RSF will be expanded via additional raises to accommodate the additional low-grade ore that will be processed once open pit mining is completed.



**Figure 11: Residue Storage Facility Life of Mine General Arrangement**

# 11.0 SULPHURIC ACID AND POWER GENERATION

The NiWest operations will be supported by a sulphur burning sulphuric acid plant with a design capacity of 5,100 t/d of sulphuric acid (100 wt.% H<sub>2</sub>SO<sub>4</sub> basis).

Commercial grade 98.5 wt.% sulphuric acid will be produced for the heap leaching process. Steam recovered from the waste heat in the sulphuric acid plant will be used in the process plant and for power generation to supply electricity to the site and process plant. Up to approximately 30 MW of total power can be produced by a Turbine Generator (TG) set which will allow the entire site to operate independently of the Western Australian power grid.

Key design parameters for the sulphuric acid plant are:

- Production of 5,100 t/d sulphuric acid (100 wt.% H<sub>2</sub>SO<sub>4</sub> basis) for the heap leaching process
- The generation approximately 22 MW of power to support the operation of the processing facility using high pressure steam (40 barg, 430°C) raised in the sulphuric acid plant
- Providing up to 45.5 t/h of low-pressure steam (6 barg, 175°C) for the process plant while also providing the internal steam requirements for both the sulphur melting area and general sulphuric acid plant, e.g. deaerator

Various technology options for production of sulphuric acid from sulphur were considered ranging from variations of the single absorption process including tail gas scrubbing through to double absorption double contact (DCDA) technology and isothermal based processing such as the Chemetics CORE- H<sub>2</sub>SO<sub>4</sub> technology. Ultimately, a DCDA sulphuric acid plant was selected as the preferred technology.

The NiWest site will not be connected to the Western Australian power grid and will be self-sufficient for power supply, operating in so-called island mode giving the Project an advantage when compared to other nickel projects which require power from external sources (with an associated carbon footprint penalty).

The Turbine Generator Set (TG set) will use superheated steam raised in the sulphuric acid to generate power for the site. Assuming an isentropic efficiency of 76% for the turbine and 97% for the generator, power generation of up to 29.3 MW is possible if all available HP steam in excess of the requirements of the main air compressor turbine drive and process plant is used at the TG set. This provides in excess of 30% headroom to the maximum power demand of the project (21.8 MW).



Figure 12: Sulphuric stockpile example

## 12.0 WATER DEMAND, SUPPLY AND DISTRIBUTION

The Project will use approximately 6.5 Gl per annum of raw water within the heap leach circuit with the highest demand components being natural evaporation and water bleed streams which are required to control the amount of magnesium within the circulating flows.

The majority of the Project's total raw water demand, approximately 5.2 Gl per annum, will be supplied from a dedicated borefield hosted within extensive paleochannel systems to the north-west of the Project area (Depot Springs South). The remaining 1.3 Gl per year will be supplied from a smaller borefield centred on the fractured rock Mt Kilkenny deposit which hosts potable quality water.

NiWest currently has an extraction licence over this water volume.

The Project has applied for and has been granted Miscellaneous Licences at both Depot Springs South and Sandstone South (around 200 km NW of Mt Kilkenny) for the extraction of water, which has sufficient supply to meet the life of mine water demand for the Project (and for the conceptual expansion described in section 22).

Process modelling and simulation work has been carried out to determine that the heap leach system can operate with raw water Total Dissolved Solids (TDS) of up to 20,000 ppm. Potable water requirements for specific areas such as the sulphur off gas boilers, reagent make up water and product washing will be supplied from the Mt Kilkenny borefield.

## 13.0 NON-PROCESS INFRASTRUCTURE

The following non-process infrastructure works that are required to execute the construction works onsite and operate and maintain the Project site during operations are:

- ⦿ Site preparation (including construction of pads, roads and site fencing)
- ⦿ Water management (including drainage, ponds, site water balance and raw water storage)
- ⦿ Power reticulation
- ⦿ Mining camp infrastructure
- ⦿ Communication infrastructure
- ⦿ Fuel storage and distribution, sewage, and temporary construction facilities
- ⦿ Fire systems, vehicles and mobile equipment
- ⦿ Non-process infrastructure including:
  - Mining Infrastructure Area
  - Administration
  - Crib room
  - Plant maintenance workshop
  - Process plant stores
  - Ablutions/toilet block
  - Security hut
  - Laboratory
  - Weighbridge

# 14.0 BULK HANDLING LOGISTICS

The Project's main transport logistics requirements comprise the import of bulk elemental sulphur and magnesia (approximately 600,000 t/a and 21,500 t/a respectively) and the export of nickel and cobalt sulphates (approximately 90,000 t/a and 7,600 t/a respectively).

The Project has access to an existing extensive network of transport infrastructure with access to a loading and unloading facility at Malcolm Siding 35 km from the Project.

## 14.1 Import – Reagents

Bulk sulphur will be imported through Esperance Port, approximately 630 km from the Project. The port currently imports bulk sulphur and has existing storage and inloading facilities with capacity to increase to volumes that will accommodate Alliance Nickel's requirements. Further, the port is connected to state rail infrastructure that connects through Kalgoorlie to the Malcolm Siding. A small fleet of 3-4 side tipping trucks will be required to transport and discharge sulphur to the Project's sulphur stockpile area.

The Company has signed a memorandum of understanding with Southern Ports Authority providing a basis for future contract discussions.

Other process plant reagents will be imported to Fremantle Port and transported in standard shipping containers via rail to site using the regular Fremantle-Kalgoorlie-Malcolm Siding rail service. The Company has held extensive discussions with two rail logistics companies with capacity to support the Project.

## 14.2 Export – Product

Nickel and cobalt sulphate products will be packaged in plastic lined bulk bags each containing 1,000 kg of material. Two bags will be packed and strapped onto a wooden or plastic pallet and will be shrink wrapped, 10 pallets (20 tonnes of product) will be packed into a standard 20-foot container.

The shipping containers will be delivered via the state intermodal rail link at Leonora directly to Fremantle Port, a gateway for trade and commerce in the region, approximately 850 kilometers from the Project site.



Figure 13: Esperance Port approximatel 630km from the NiWest Project

# 15.0 CAPITAL COSTS

## 15.1 Pre-Production Capital Costs

The pre-production capital cost is estimated at A\$1,651 million based on the exchange rates adopted for the financial model and includes a 10% contingency of A\$149 million. The capital cost estimate has been prepared with an inherent accuracy range of -10% to +15%.

The Project cash flow has been generated based on the start and finish date of each work or equipment package in accordance with the project execution schedule. Cost expenditure distributions over time were applied based on Ausenco's assessment of the most appropriate curve for each cost element. No allowance was included for retentions on any vendor and/or contractors in lieu of retention for performance guarantees and warranty period guarantees.

All capital items are assumed to be purchased outright, without any deferred capital, outsourced infrastructure or equipment leasing. Opportunities for leasing and vendor financing are being investigated by Alliance Nickel.

The pre-production capital cost is summarised in Table 6 below.

The capital cost estimate has increased by 31% compared to the capital cost estimate in the Updated PFS completed in 2022. This is primarily from an increase in water infrastructure costs of ~A\$310 million as water cannot be sourced locally in either the volume or quality required. A main groundwater borefield will be constructed approximately 200km to the north west of Mount Kilkenny. In addition, as with many other resource projects in Australia, and as noted above, the increase in capital cost estimate reflects the post COVID inflationary environment with significant cost increases in the costs of labour, materials and consumables.

Facility	Total Cost (A\$M)	Total Cost (USD\$M)
Mining	43	29
Mineral Process Plant	502	335
Sulphuric Acid Plant	290	193
Infrastructure	453	302
Construction Indirects	34	23
Engineering Costs	94	63
Owners Costs	86	57
Contingency	149	99
	<b>1,651</b>	<b>1,101</b>

**Table 6: Capital Cost - Level 1 WBS**

## 15.2 Sustaining Capital Costs

Sustaining capital costs of \$332 million are incorporated in the financial analysis over the life of the Project. The processing plant and associated infrastructure sustaining capital is included in operating costs. The majority of the sustaining capital estimates (provided by Knight Piesold) relate to the costs involved with subsequent lifts over 33 years of the residue storage facility, site drainage and evaporation ponds.

# 16.0 OPERATING COSTS

The operating cost estimate was compiled by Ausenco and has been derived using a first principles approach to build up of costs.

The estimate includes cost elements provided by Alliance for mine operating costs and owners general and administration costs.

The operating cost estimate is presented in Australian dollars (A\$) and uses prices obtained in, or escalated to, the third quarter of 2024 (Q3 2024). The estimates prepared by Ausenco are considered to have an accuracy of 10% to +15%.

Operating costs cover all onsite costs directly associated with mining, processing, and administrative activities and include costs related to sustaining production of the Project over the life of the project including royalties and logistics costs.

A summary of the average annual LOM operating costs is shown in Table 7 below.

Item	A\$M/Year	A\$/lb Nickel	A\$/t Nickel
Mining and haulage	75.4	1.96	4,328.74
Process and infrastructure	248.3	6.46	14,251.66
General and administrative	12.2	0.32	702.77
Logistics	7.1	0.18	405.91
<b>Total</b>	<b>343.0</b>	<b>8.92</b>	<b>19,687.98</b>

Table 7: Average annual operating costs (A\$)

Item	A\$M/Year	A\$/lb Nickel	A\$/t Nickel
Mining and haulage	50.3	1.31	2,887.27
Process and infrastructure	165.6	4.31	9,505.86
General and administrative	8.1	0.21	468.75
Logistics	4.7	0.12	270.01
<b>Total</b>	<b>228.7</b>	<b>5.95</b>	<b>13,131.89</b>

Table 8: Average annual operating costs (US\$)



# 17.0 IMPLEMENTATION

The Project implementation strategy supports the Company's vision to develop and deliver a project that meets the needs of the shareholders and the community with zero accidents and minimal impact on the environment.

Further the Company's implementation objectives are to minimise initial capital expenditure, ensure high purity and low carbon product specifications are achieved and to protect or improve on the targeted feasibility project production timeline.

The implementation strategy assumes an Engineering and Project Construction Management (EPCM) implementation. The head contract is between the Owner and the EPCM contractor who then manages firm price horizontal and vertical construction packages as outlined and a number of smaller secondary EPC or Design and Construct (D&C) packages where either local contractor or specialist

technology suppliers have demonstrated cost benefits to the project. During the early works phase opportunities will be explored to increase the portion of the project that could be undertaken by EPC/D&C contractors (on a fixed price basis), including vertical construction packages for areas of the process plant and acid plant.

The full project execution plan and schedule will be finalised as part of the early works phase. The early works phase of the Project will commence following the completion of the DFS and will comprise critical path activities such as completion of formal tender and award of the EPCM package, confirmatory testwork, approval of environmental and regulatory permits, early works engineering to progress the camp, acid plant and mining pre-strip and bulk earthworks programs.

The Project will then progress to full execution comprising final detailed engineering and procurement, construction and commissioning.



Figure 14: Previous exploration activity at NiWest Project site

# 18.0 OPERATIONS

The Project will operate 24 hours per day, seven days per week and the operations personnel required will be located at the Project site and housed in the permanent camp. A description of the key process and operating areas is below.

## 18.1 Corporate

The corporate management office is established in Perth and headcount will be expanded in 2025 to assume responsibility for the executive, financial, product marketing, payroll and human resources functions.

## 18.2 Mining

Alliance will appoint a suitably qualified and experienced mining contractor for a minimum term of 5 years, which will be responsible for the following key activities:

- ✓ Provision, operation and maintenance of the mining and haulage fleet
- ✓ Short term mine planning
- ✓ Drill and blast where required
- ✓ Mining of ore and haulage to the ROM pad located adjacent to the heap leach pads
- ✓ Feeding ore to the crusher feed bin on the ROM pad
- ✓ Reclaiming of the ripios material after each leach cycle and transport and discharge to the pit voids and ex-pit permanent storage areas
- ✓ Transport of plant residue (filter cake) to pit voids
- ✓ Development and operation of the calcrete quarry and haulage to the process plant area

## 18.3 Heap Leach

The heap leach operation will run on an 18-week on/off cycle of successively building heap leach modules, leaching and reclaiming the ripios for disposal in the exhausted pit voids. Each module will have a capacity of around 45,000 tonnes. The cycle for each module is as follows.

- ⦿ Prepare pad area and underdrainage
- ⦿ Load crushed and agglomerated ore onto pad.
- ⦿ Install irrigation system
- ⦿ Leach (105 days)
- ⦿ Flush
- ⦿ Drain down
- ⦿ Remove ripios

The operation of the heap leach will be dominated by materials handling activities with constant moving of overland conveyors and installation and removal of irrigation systems. This will all be carried out on a 24/7 basis. The heap leach operation will produce the PLS loaded to the required nickel/cobalt concentration which is the feed to the refinery.

## 18.4 Refinery

The refinery will operate continuously 24 hours a day, 7 days a week and will consist of the following key areas:

- ✓ Neutralisation
- ✓ Nickel solvent extraction
- ✓ Cobalt solvent extraction
- ✓ Nickel and cobalt crystallisation
- ✓ Product drying and bagging

## 18.5 Acid Plant

The acid plant will provide sulphuric acid for the heap leach process and produce power, utilising the heat generated from burning sulphur, to meet the electrical requirements of the operation. The plant will operate whenever the heap leach area is operating (which requires acid) and must also generate electrical power for the refinery.

# 19.0 MARKET OUTLOOK

## 19.1 Supply Constraints

It is the view of the Company that the nickel market is on the brink of a resurgence, underpinned by diminishing supplies from key Indonesian nickel producers.

Nickel demand exceeded 3mt in 2023 and it is expected to rise sharply over the coming years to 4.5mt in 2030 – driven by clean energy applications and expansion in the EV market.

Whilst Indonesia has dominated the global nickel market for some time, analysts believe future nickel supply from the country will be significantly reduced due to depleting ore reserves in the Philippines, which Indonesia heavily relies on.

According to global investment bank UBS, the Philippines' H1 2024 ore production fell 20% year on year with reserves at the lowest level since 2019, mimicking Indonesia's production statistics, leading to an anticipated 3-9% global annual supply loss between 2025 and 2029.

In addition, significant Chinese-backed investment in High Pressure Acid Leaching (HPAL) refining infrastructure in Indonesia over the past six years helped rapid development of production rates to the point the nation now accounts for half global nickel production.

However, much of this infrastructure is starting to age, requiring significant future capital investment to maintain and repair.

HPAL also produces significant tailings waste and industry observers such as Wood Mackenzie have noted the outlawing of deep-sea tailings disposal across Indonesia, coupled with reducing on-land waste management options is fast becoming an issue.

Together, these factors will likely drive-up production costs and limit future development of HPAL infrastructure. An example was German chemical producer BASF exiting a US\$2.6 billion HPAL and Base Metal Refinery plant project in Weda Bay this June.

This is welcoming news for nickel miners in other regions, as nickel supplies will need to be sourced from elsewhere to meet the rising demand.

## 19.2 Geopolitical Considerations

While the outcome of the US Election is still relatively fresh, the Trump administration victory could bring into question certain elements of the Inflation Reduction Act 2022 (IRA) with potential to impact critical mineral producers and suppliers in non-US jurisdictions.

Since being introduced, the IRA has attracted US\$110 billion in the EV and battery sectors, with close to 60% of that in battery manufacturing alone.

Although President elect Trump has mooted repealing parts of the IRA that favour the EV manufacturing market, Tesla CEO Elon Musk has emerged as one of his closest allies and is likely to bear influence over policy decisions that impact the US' largest EV company.

EV sales have also grown steadily since the IRA was activated, and interestingly the majority of investment has landed in Republican states, meaning their respective Governors would likely push back against proposed repeals.

The President will also need to find a balance between any wind back of EV-based incentivisation and how it impacts the US race to catch up with China's booming EV sector.

From a European perspective, EU battery regulations coming into force mean battery-grade material suppliers will need to demonstrate how their material meets stringent low-carbon production criteria.

This forms part of new battery passport policy being introduced in February 2027, tracing lifecycle carbon emissions of all EV and industrial batteries on the EU market and a trend towards 'green nickel' supply options.

In the case of Indonesia-sourced nickel, work done by the Institute for Energy Economics and Financial Analysis forecasts its carbon emission profile is forecast to reach 38.5mt by 2028 which would account for close to 5% of the nation's total CO<sub>2</sub> emissions and drastically impair their ability to enter circulation in the EU.

## 19.3 Nickel Price Recovery

Despite downward pressure on the nickel price in early 2024, analysts expect it to recover longer term due to Indonesia's depleting ore reserves, reducing grade and increasing production costs.

Forecast pricing from leading financial forecaster Macquarie Bank (Desk Strategy – Commodities report September 2024) shows London Metals Exchange (LME) nickel prices improving to US\$18,250/t in 2025 and increasing to US\$23,000/t by 2028 before settling at a long-term forecast price of US\$20,000/t.

The LME nickel price is a reference or “base price” against which the majority of nickel products from intermediates to nickel metal to nickel chemicals are priced. Alliance expects based on offtake discussions to date that a market premium to LME will be paid for Australian battery grade, precursor nickel sulphate,



**Figure 15: Electric vehicles will represent more than 60 per cent of vehicles sold globally by 2030, according to IEA.**

# 20.0 ECONOMIC ANALYSIS

## 20.1 Financial Model Parameters

The economic analysis has evaluated a life of mine (LOM) of 35 years from the beginning of commercial operations with average annual production of 19,500 tonnes of nickel metal as nickel sulphate hexahydrate (c.87,000 tonnes per annum) and 1,500 tonnes of cobalt metal as cobalt sulphate heptahydrate (c.7,000 tonnes per annum) over the first 27 years of operations. Pre-production capital costs, sustaining capital costs and operating costs are consistent with the costs presented in sections 15, and 16 above.

The valuation of the Project is based on the discounted cash flow method. The key attributes of the financial analysis are as follows.

- ✓ The NPV base date for the Project is 1 January 2026.
- ✓ The model spans 35 years (2026 to 2062 with 22 months of construction and commissioning before commercial operations, followed by 35 years and 3 months of operations).
- ✓ The financial model presents real after-tax ungeared Project cash flows which are discounted at a real rate of 8% to calculate the NPV (referenced as NPV8).
- ✓ Cash flows are discounted annually and assumed to be incurred evenly across each period.

Key assumptions used in the financial model are summarised in Table 9.

Assumption		
<b>Key Financial Inputs</b>		
LOM forecast average LME nickel price	\$USD/t	20,216
LOM forecast average cobalt price (real)	\$USD/t	32,556
AUD/USD exchange rate	\$USD	0.667
Corporate tax rate	%	30
WA State royalty	%	2.5
Discount rate - Real	%	8
<b>Mining and Processing</b>		
Construction Period	Months	22
Mine life	Years	35
Ore mined	Mt	85.5
Total waste tonnes mined	Mt	167.4
LOM strip ratio	Waste/Ore	2.0
Nickel head grade	% Ni	0.94
Cobalt head grade	% Co	0.06
Steady-state nickel recovery	%	78
Steady-state cobalt recovery	%	85
Contained nickel produced	kt	627.3
Nickel sulphate produced	kt	2,809.4
Contained cobalt produced	kt	47.0
Cobalt sulphate produced	kt	227.5

**Table 9: Key Assumptions Summary**

## 20.2 Financial Model Outcomes

The Project is forecast have a post-tax NPV of A\$1,504 million at a real 8% discount rate and a post-tax IRR of 15.75% calculated over the LOM. The after-tax payback occurs in year 5 of operations.

The project is forecast to generate LOM revenue of A\$23,298 million, comprising revenue from sales of nickel sulphate of A\$20,995 and cobalt sulphate of A\$2,303. Nickel sulphate sales comprise approximately 91% of total project revenue with the remaining 9% being cobalt sulphate revenue.

Financial Outcomes		
<b>Valuation, Returns and Key Ratios</b>		
NPV <sub>8</sub> (pre-tax ungeared, real basis)	A\$ Million	2,230
NPV <sub>8</sub> (post-tax ungeared, real basis)	A\$ Million	1,504
IRR (pre-tax ungeared, real basis)	%	21.12
IRR (post-tax ungeared, real basis)	%	17.64
Payback period (post tax)	Years	5
<b>Key Financial Results (LOM)</b>		
Revenue	A\$ Million	23,298
Operating Cashflow	A\$ Million	10,366
Project free cashflow – pre-tax	A\$ Million	8,307
Project free Cashflow – post tax	A\$ Million	6,089
Total royalties & corporate taxes	A\$ Million	2,800

**Table 10: Financial Outcomes**

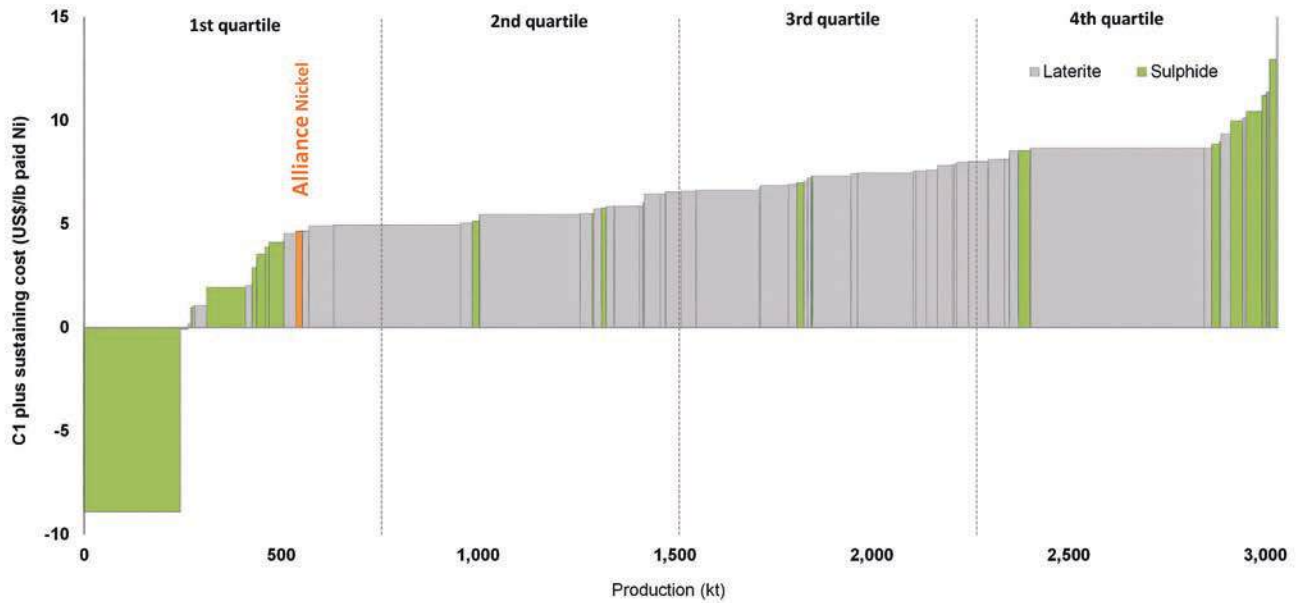
The LOM unit cash operating costs are shown in Table 11. The operating parameters reflect the operating strategy of processing higher grade (HG) ore for the first 27 years of operation followed an 8-year period of processing previously mined and stockpiled low-grade ore (LG).

Unit Cash Operating Costs	Units	First 27 Years	LOM
Mining and haulage costs	AUD/lb	2.04	1.96
Processing costs	AUD/lb	5.90	6.46
General and administrative costs	AUD/lb	0.29	0.32
<b>C1 Cash Cost</b>	<b>AUD/lb</b>	<b>8.23</b>	<b>8.74</b>
Product transport costs	AUD/lb	0.18	0.18
Royalties	AUD/lb	0.42	0.42
Sustaining capital	AUD/lb	0.27	0.24
<b>AISC (excluding cobalt credits)</b>	<b>AUD/lb</b>	<b>9.10</b>	<b>9.58</b>
Cobalt credits	AUD/lb	(1.68)	(1.67)
<b>AISC (including cobalt credits)</b>	<b>AUD/lb</b>	<b>7.42</b>	<b>7.91</b>
<b>Net All-in Sustaining Cost (AISC)</b>	<b>USD/lb</b>	<b>4.95</b>	<b>5.28</b>

**Table 11: Unit Cash Operating Costs**

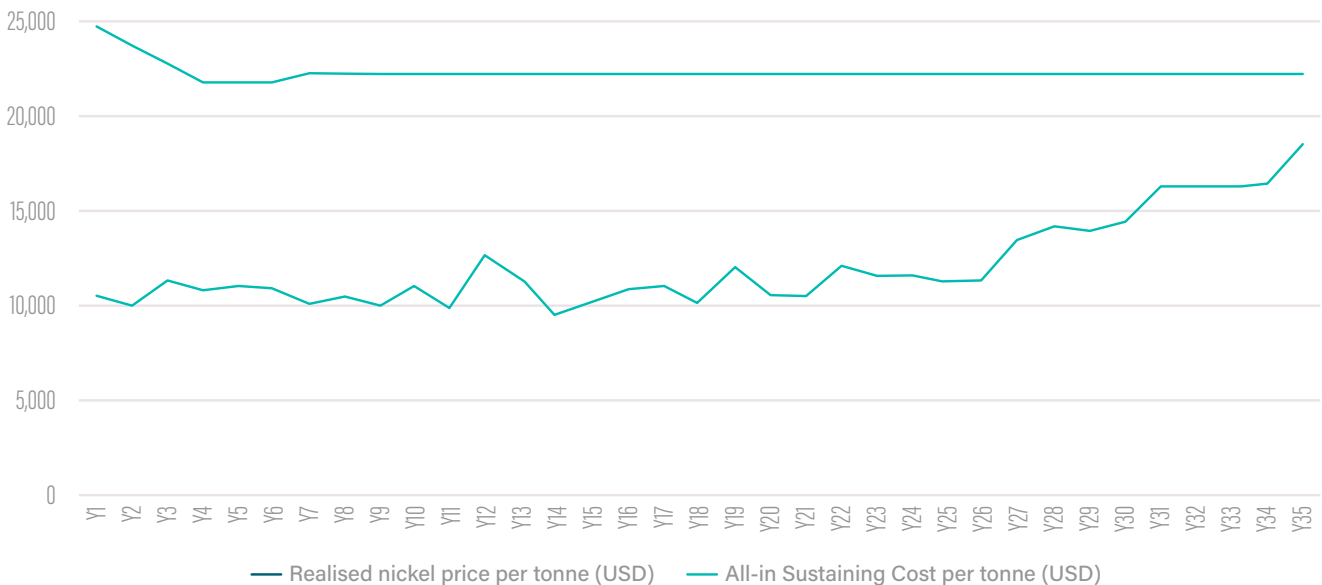
The C1 Cash Cost has increased by 10% compared to the Updated PFS. This cost increase reflects design modifications, and the escalation experienced in Australia from the post COVID inflationary environment and resultant significant cost increases in the costs of labour, materials and consumables.

Figure 16 below shows the NiWest Project AISC cost firmly within the first cost quartile compared to domestic and international nickel producers. The operations with costs below that of those projected for Alliance are predominately polymetallic producers with significant by-product credits arising from copper and platinum group metals production. Norilsk in particular produces over 300kt of copper and 120 tonnes of platinum group metals together with 220kt of nickel (source: Wood Mackenzie commentary).



**Figure 16: Cash Cost Comparison**  
 Source: Wood Mackenzie. 2024 C1 plus sustaining costs (US\$/lb) paid nickel net of by product credit 2024 real terms

Total EBITDA is forecast at A\$10.4 billion, with annual average EBITDA of A\$343 million over the first 27 years of operations. Figure 17 shows the LOM average realised nickel price per tonne compared to the LOM average annual AISC per tonne (including cobalt credits).



**Figure 17: Realised nickel price per tonne (US\$/tonne, real and AISC per tonne (US\$))**

Figure 18 shows the annual and cumulative Project cash flows (post all capital and tax).

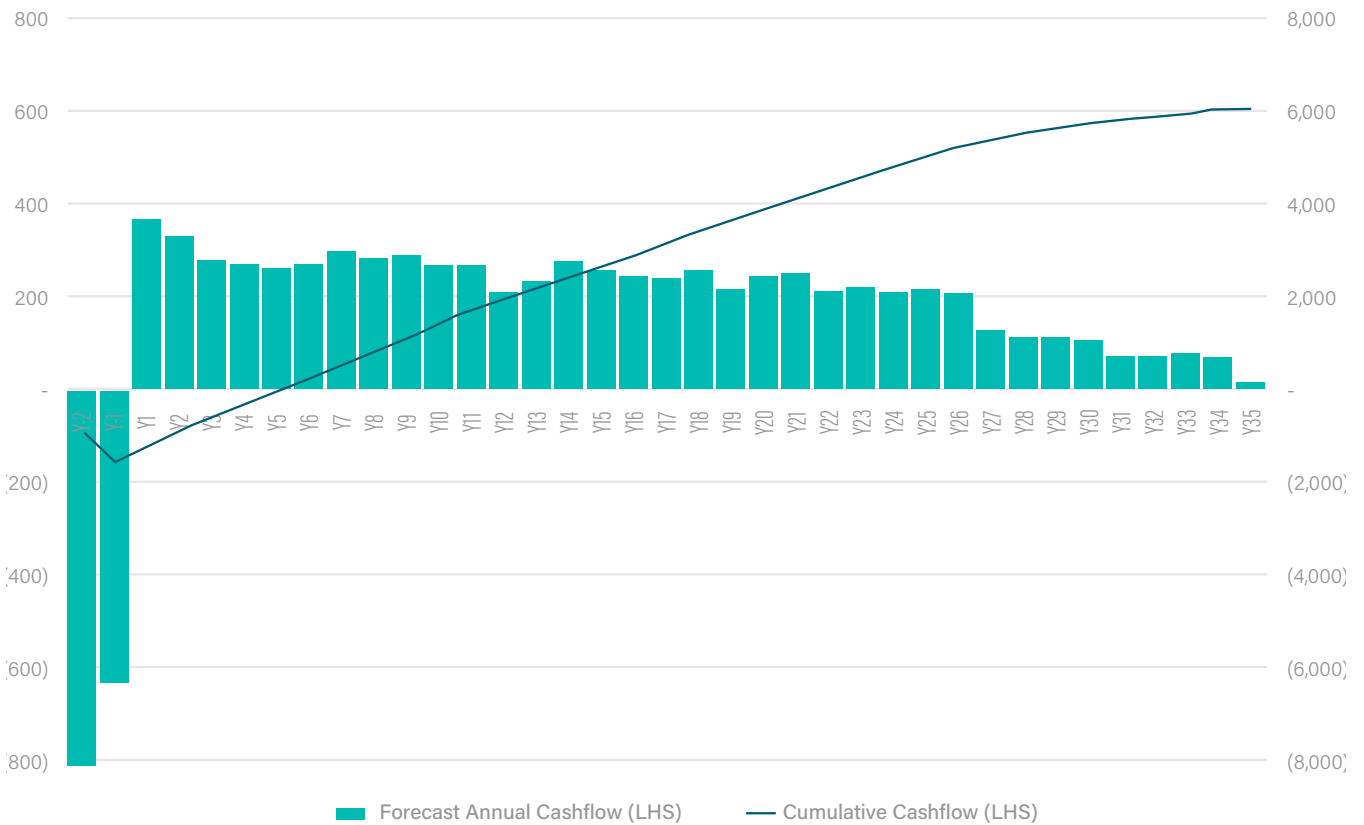


Figure 18: Annual and Cumulative Net Project Cash Flow

### 20.3 Sensitivity

Sensitivity analysis have been carried out to demonstrate the impact and sensitivity of the financial results to changes in key assumptions and variables. The analysis in Figure 19 shows the Project is most sensitive to changes in nickel price, foreign exchange and nickel recovery.

#### Post-tax NPV - Base case A\$1,504m

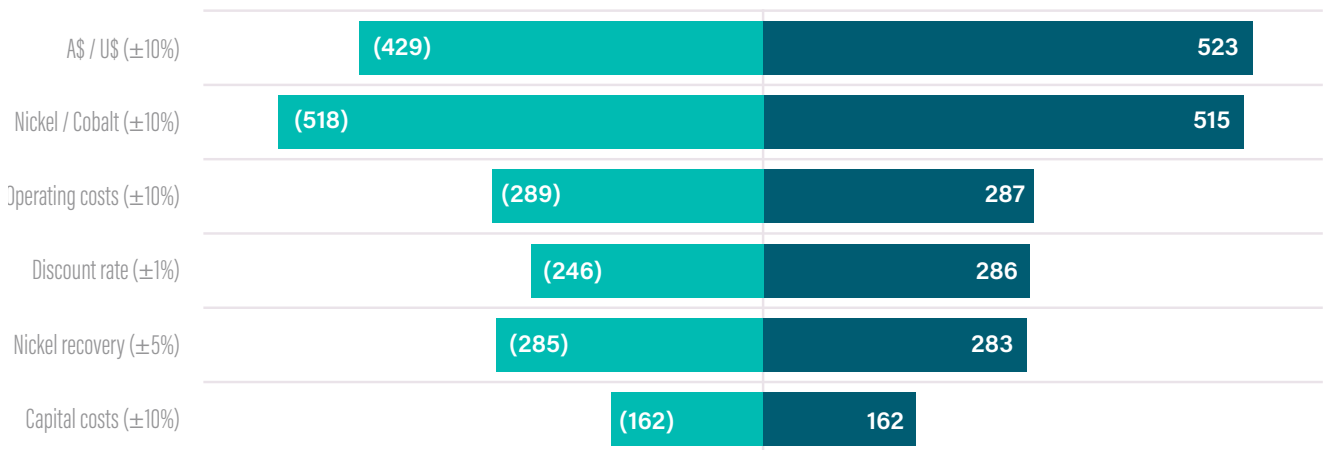


Figure 19: Sensitivity analysis of key assumptions



## 20.4 Pathway to Financing

In 2023, the Company appointed specialist natural resource financial advisor, Blackbird Commodity Partners Pty Ltd (Blackbird Partners) to support the Company's funding strategy and arrange a project debt facility for the Project. Projects of this scale and nature are typically funded by a mixture of equity and project debt finance that is sourced from various third parties. Initial modelling indicates that the project cashflows would support a gearing level of up to 60% of the total funding requirement.

### Debt funding

The target debt strategy is one of project finance comprising both Government backed ECA lenders and leading commercial bank lenders. As nickel and cobalt are listed as either critical or strategic minerals by many governments, including Australia, the Project has strong strategic alignment with the global ECAs including members of the Minerals Security Partnership Finance Network announced in September 2024. Specifically for the Project, there are strong opportunities for ECA participation via product sales, reagents (with particular reference to sulphur) and capital asset procurement. Numerous positive discussions continue with the target ECAs.

In addition, Blackbird Partners together with the Company has received a positive response to its debt funding process through the issuance of an Expression of Interest and subsequent meetings with thirteen domestic and international commercial banks. Similar to the ECAs, the main driver for the interest of commercial banks is the direct linkage of the Project's premium product to the EV battery sector, development of new and additional nickel supply chains outside of China and Indonesia, and their respective banking relationships with Automotive Original Equipment Manufacturers (Auto OEMs).

As announced on 19 September 2023, the Company has also received a letter of support from Export Finance Australia (subject to conditions) to participate alongside commercial lenders. This has provided the Company with support for its debt funding process and the Company believes that this, together with the other factors outlined, is a reasonable basis for believing that the required debt financing for the Project will be available.

### Equity and strategic partner

The Company's primary equity strategy is to target strategic investors to invest at either the Company level or Project level through a combination of strategic offtake and/or joint venture partnerships to fund the portion of the Project funding which is not debt financed. Given the Project's production of nickel sulphate and cobalt sulphate are both precursor products for battery cathodes, Auto OEMs and battery manufacturers are the key target market for this strategy. The Company has been engaging with detailed discussions with target strategic investors over the last 2 years regarding equity funding structures.

A strategic investment at the project level through a joint venture partnership will typically comprise an upfront payment from a potential joint venture partner to acquire a share of NiWest. It is anticipated that the Company would divest up to 50% of the Project on this basis. This upfront payment would substantially contribute to the Company's pro-rata equity requirement. If required, any shortfall in the Company's pro-rata equity requirement will be financed through the issue of ordinary shares in the Company.

Given the significant progress completed to date by the Company and its advisors, the Company has formed the view that there is a reasonable basis to assume that future funding for the Project's development will be available, based on:

- The Company announced on 19 September 2023 that it had received a letter of support from Export Finance Australia (subject to conditions) to participate alongside commercial lenders.
- Ongoing detailed discussions with current and potential strategic partners contemplating a joint venture project level investment into NiWest (up to 50% project sell-down).
- Binding offtake and cornerstone equity investment with Stellantis announced on 1 May 2023. Stellantis currently hold an 11.5% shareholding in Alliance and Stellantis' representative, Klervi Menaheze, was appointed to the Alliance Board with effect from 14 February 2024. The binding offtake agreement is for the first five years of operations (with rollover to extend this period) representing (at least) approximately 170,000t of nickel sulphate and 12,000t of cobalt sulphate over this period. The strategic partnership also incorporated a share subscription agreement, whereby Stellantis subscribed for A\$15 million in new equity in Alliance at a subscription price of A\$0.18 per share.
- A non-binding term sheet signed with Samsung SDI Co., Ltd (Samsung SDI) for future offtake of battery grade nickel sulphate and cobalt sulphate for an initial six-year period was announced on 8 February 2024. This non-binding term sheet also provides that Samsung SDI and Alliance will discuss a potential acquisition by Samsung SDI of an equity interest in a project company to be formed by Alliance that will hold the Project. Discussions with Samsung SDI have progressed positively in relation to a potential binding offtake agreement and associated equity investment.
- The strong production and economic outcomes delivered by the DFS are considered by the Company's Board to be sufficiently robust to continue both the equity and debt discussions to date; and
- The Project is located in Western Australia in an established nickel and cobalt producing region with significant legacy infrastructure. Western Australia is considered one of the world's leading and low risk mining investment destinations.

There is no certainty that the Company will be able to source the required funding when required and it is possible that such funding may only be available on terms that may be dilutive to or otherwise affect the value of the Company's shares.

# 21.0 RISK AND OPPORTUNITY

A rigorous risk assessment process was undertaken as part of the NiWest DFS to identify risks that may prevent the Project from achieving its strategic, business and operational objectives, and to identify opportunities to improve overall project performance.

The risk assessment process was used to identify the key design, operational, safety, financial and environmental risks of the Project and establish potential control measures to mitigate the identified risks to acceptable levels.

Two project risk workshops were held as part of the DFS that focussed on reviewing the extreme and high risks and opportunities and identifying preliminary mitigation plans. The workshops were attended by the Alliance Nickel, Ausenco and all contributors to the DFS. The workshops were run in accordance with ISO 31000:2009 (International Standard for Risk Management). At the conclusion of the workshops, there were no extreme risks identified by the study team.

The risk assessment methodology that was adopted for each identified risk considered the current risk rating including any existing controls, and then assessed the residual (or target) assuming the successful operation of the proposed mitigating strategies.

Each risk in the register is assigned a current risk rating reflected as a function of the likelihood of the risk arising (rare to almost certain) and the consequence (minor to critical). Similarly, each opportunity in the register reflects the likelihood and consequence of the opportunity materialising.

The ratings for the ninety-two (92) active items in the NiWest Project Risk Register are displayed in Figure 20.

The risk items in the prefeasibility study report were transferred into Ausenco’s risk template and rated based on the likelihood and consequence rating previously allocated. Comparing the current feasibility study register to the pre-feasibility study register, the number of high risks has decreased from 28 to 22, medium risks have increased from 30 to 37. The current register has 15 low risks and an additional 18 opportunities. No extreme risks were identified in the final pre-feasibility study or current feasibility study register. The 5 extreme risks identified during Workshop 1 were mitigated and removed from the current register.

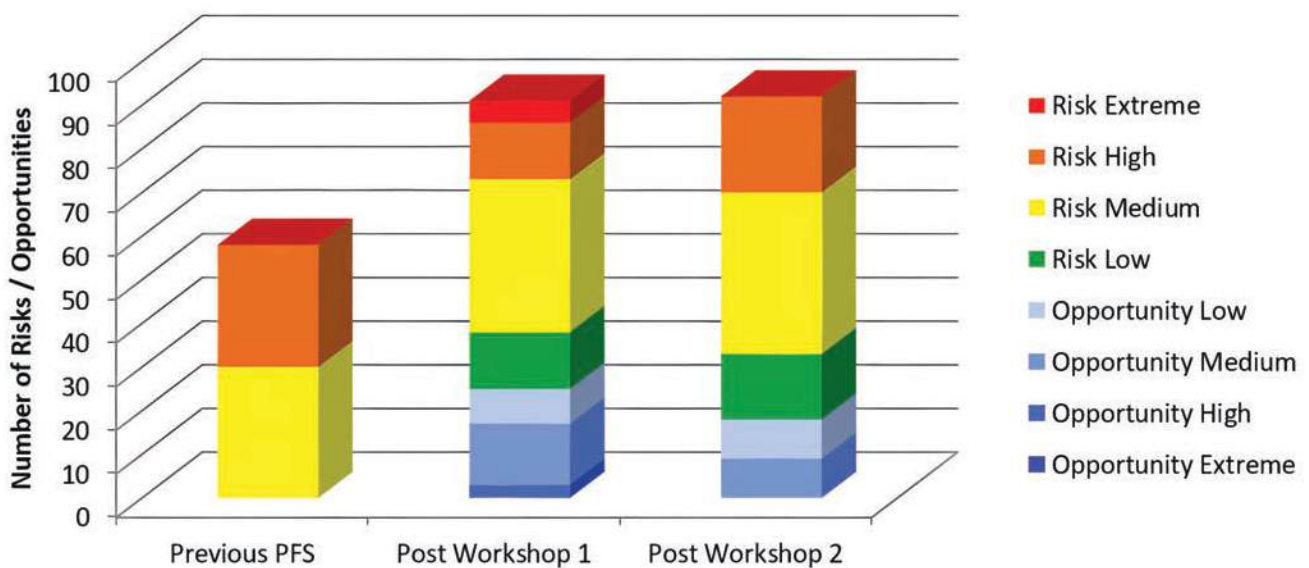


Figure 20: Ratings Distribution

# 22.0 PROJECT EXPANSION

The DFS is prepared assuming the Project produces nominally 20,000 t/a of nickel metal with mining schedules and process plant designs for a process plant feed rate of 2.3 – 2.5 Mt/a.

At this production rate, the life of mine is 27 years excluding the low-grade ore which will be segregated into separate low-grade stockpiles for treatment in the future (8 years of feed at the process design rate).

The Company has prepared preliminary plans to approximately double production through increasing the mining rate and expansion of the processing facilities.

The assessment has been carried out as follows:

- ✓ An accelerated mining schedule has been prepared from the DFS mine schedule noting that the expansion option has not been optimised (with resulting lower costs) for the increased mining rates and uses the same pit shells and costs as the DFS.
- ✓ Expansion capital costs have been developed using the DFS capital cost estimates.

It is assumed that the expansion pre-production capital will be financed from Project cash flows with a refinancing of the base case debt facilities. Production from the expanded facility will commence in year 6. Figure 21 shows the increase in process plant feed ore in Year 6 and the resulting nickel production from that time.

EPA approvals will be required for the expansion case, with doubling of project water and calcrete demands and greenhouse gas emissions. The expansion would be subject to new planning approvals and a new feasibility study which would seek to use as much of the existing plant and infrastructure as possible, which in turn will reduce the impact on approvals required.

Expansion



Figure 21: Expansion Feed Ore and Nickel Production

## 22.1 Capital Costs

Expansion capital costs were developed using the DFS capital cost estimates and assuming potential synergies from building on the existing mining operation footprint, are estimated indicatively at A\$882 million.



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