



Ardea
Resources Limited

Kalgoorlie Nickel Project Goongarrie Hub

A multi decade nickel-cobalt operation

Andrew Penkethman
Managing Director
and CEO

RIU Explorers
Conference
13 February 2024



Australian Federal Government
- Major Project Status



Digbee ESG



Disclaimer

Important notice

This presentation contains general information only and is, or is based upon, information which has been released to ASX or is contained in the Ardea Resources Limited (Ardea or the Company) prospectus dated 9 November 2016 (including supplementary prospectuses dated 18 November 2016 and 6 January 2017), High-grade nickel-cobalt mineralization extended at Goongarrie (8 October, 2018), Goongarrie Pilot Plant trial produces battery grade crystals (31 October 2018), Emu Lake Discovery (3 December 2021, 14 January 2022, 7 February 2022), Goongarrie Hub Feasibility Study Update (25 January 2022), High-grade Nickel-Cobalt Confirmed at Kalpini with Scandium and Rare Earth Elements (14 March 2022), Kalgoorlie Nickel Project Recognition on All Tiers of Australian Government (21 March 2022), Confirmation of High-Grade Nickel-Cobalt from Goongarrie South Metallurgical Drilling (16 May 2022), Kalgoorlie Nickel Project: Metallurgical Update – Mineralised Neutraliser (16 November 2022), Ardea Completes KNP ESG Accreditation from Independent Leading Global Platform (24 November 2022), Nickel sulphide anomalism from aircore drilling at Kalpini Project (2 May 2023), Mineralised Neutraliser Global Patent Lodged (15 June 2023), Kalgoorlie Nickel Project Mineral Resource Estimate Exceeds 6 Million Tonne Contained Nickel (30 June 2023), KNP Goongarrie Hub Ore Reserve and Feasibility Study Defines +40 Year Operation with Strong Financial Metrics (5 July 2023), Ardea Kalgoorlie Nickel Project – MOU with Sumitomo Metal Mining, Mitsubishi Corporation, and Mitsu & Co., Ltd (5 July 2023), Kalgoorlie Nickel Project Goongarrie Hub Tenement Consolidation (17 July 2023), Ardea Quarterly Activities Report June 2023 (27 July 2023), Successful A\$16M Capital Raising (30 August 2023), Ardea Annual Report 2023 (27 September 2023), Ardea and Japanese Consortium Update on MOU (29 September 2023), Ardea Quarterly Activities Report September 2023 (30 October 2023), Nickel Sulphide Prospectivity Confirmed and Lithium-Caesium-Rubidium bearing intrusives in Highway EIS drillhole (15 December 2023), Ardea and Japanese Consortium: Update on Progress on KNP - Goongarrie Hub (21 December 2023) and Ardea Quarterly Activities Report December 2023 (31 January 2024).

This presentation is not an invitation, offer or recommendation (express or implied) to subscribe for, or apply for the purchase of, or to take any other action in respect of securities of any entity described herein and is not a prospectus, product disclosure statement or disclosure document for the purposes of the Corporations Act 2001 (Cth) and has not been lodged with ASIC. None of Ardea Resources Limited (Ardea or the Company) or its representatives are providing or offering investment advice or services by making this presentation.

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The Goongarrie Project has completed the Pre-Feasibility Study phase and has commenced programs that are part of the Definitive Feasibility Study. Though reasonable care has been taken to ensure that the facts are accurate and/or that the opinions expressed are fair and reasonable, no reliance can be placed for any purpose whatsoever on the information contained in this document or on its completeness. Actual results and developments of projects and the market development may differ materially from those expressed or implied by these forward looking statements depending on a variety of factors. A key conclusion of the Pre-Feasibility Study, which is based on forward looking statements, is that the Goongarrie Project is considered to have positive economic potential.

No stock exchange, regulation services provider, securities commission or other regulatory authority has approved or disapproved the information contained in this news release.



Experienced Board, Supportive Shareholders & Tight Capital Structure



Mat Longworth

Non-Executive Chair

Experienced across exploration, project evaluation/development including KNP and corporate management



Andrew Penkethman

Managing Director & CEO

Experienced geologist with strong corporate focus including strategic partner processes and ASX, TSX and AIM listings



Ian Buchhorn

Executive Director

Mineral economist and geologist, with significant Eastern Goldfields of WA, exploration, evaluation, development and operations experience



Maree Arnason

Non-Executive Director

Highly experienced director and executive with over 35 years' experience in the natural resources, energy and manufacturing sectors



Sam Middlemas

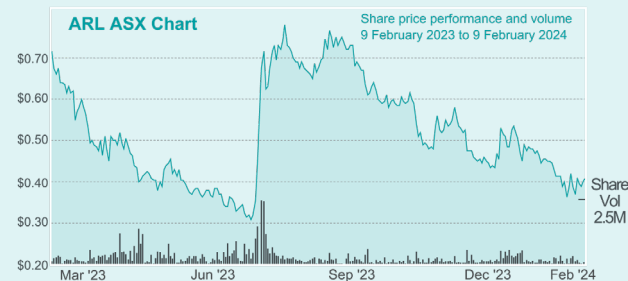
Company Secretary

Chartered Accountant experienced in providing Company Secretary services



Listed on ASX (ARL)

Shares on Issue	197,016,915	Cash (31 Dec 2023)	\$19.6 million
Performance Rights	6,149,400	Market Capitalisation	\$82 million
Options	3,000,000	Debt	Nil
Share Price (9 Feb 2024)	\$0.415	Board and Management	~9% equity
52 week high / low	\$0.80 / \$0.295	Top 40 Shareholders	~60% equity



The Right People – With The Right Expertise



Rebecca Moylan
Chief Financial Officer

Experienced CFO with expertise in financial and corporate management, accounting, project financing and contract negotiation



Matthew Read
Project Director

Experienced in project and commercial leadership roles including leading Project Owner teams, contracts, policies, procedures, systems, development, commissioning and operations



Mike Miller
General Manager –
Technical Services

Proven track record in design, development and operation of hydro-metallurgical operations with a focus on nickel-cobalt production



Alex Mukherji
General Manager –
Land Access

Experienced geologist specialising in geological and environmental compliance, reporting, Native Title and stakeholder engagement, land access and commercial



Matthew McCarthy
General Manager –
Geology & Exploration

Experienced geologist with a successful track record across several commodities including nickel exploration, study management and development



*Australian Federal Government
- Major Project Status*



Digbee ESG™



Eastern Goldfields
EDUCATION GRANT PROGRAM
AN Ardea COMMUNITY INITIATIVE



Kalgoorlie Nickel Project (KNP) – Strong Fundamentals



Granted Mining Lease tenure in premier location for infrastructure, skills and resource project operation



Low-cost Ni & Co production, with strong average annual EBITDA for over 40 years³



6.1Mt Nickel & 386kt Cobalt MRE¹ positions KNP in TOP 10 global nickel resources²



Ardea and Japanese Consortium define DFS Scope of Work, and focused on executing Final Agreements⁴



PFS shows KNP Goongarrie Hub will be a multi-decade operation to meet global demand for ethical Ni & Co³



Ardea have \$19.6M cash-at-bank,⁴ no debt, supportive shareholders and stakeholders. KNP has Australian Government - Major Project Status

1. See 30 June 2023 ARL MRE ASX Announcement.
2. See slide 10 and Appendices in this presentation

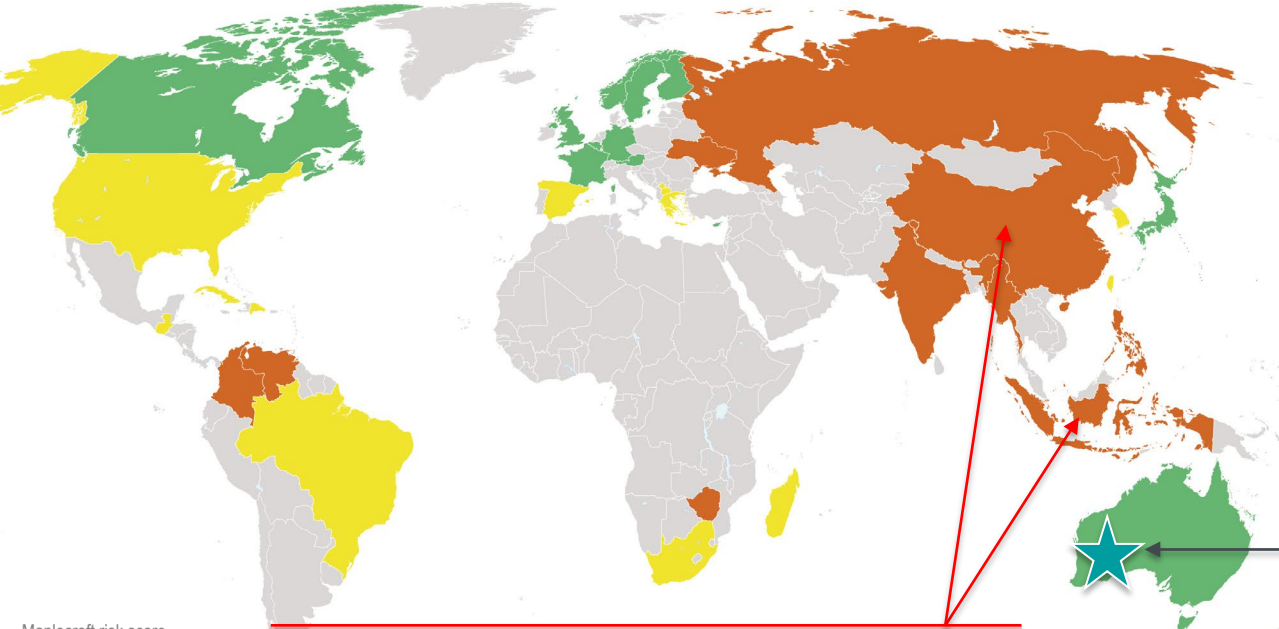
3. See 5 July 2023 ARL PFS ASX Announcement and full Financial Metrics. See Appendices in this presentation
4. See 31 Jan 2024 ARL ASX Quarterly Report to 31 Dec 2023

Nickel and Cobalt Market – Demand for Ethical Supply

- **Global nickel and cobalt demand is increasing**, driven by stainless steel, electric vehicle (EV) and energy storage applications
- US Inflation Reduction Act (IRA) includes Foreign Entity of Concern (FEOC) condition which, from 2025, will mean vehicles with batteries containing certain Critical Minerals, including nickel, extracted by an FEOC, will be ineligible for the IRA tax credit
- The rise in Chinese controlled nickel production from Indonesia has resulted in the nickel market being in surplus, but this trend is expected to reverse, with the nickel market moving back to deficit
- Increased demand, along with FEOC and EU Critical Raw Materials Act (CRMA) considerations, will accelerate supply chain diversity and security from jurisdictions, such as Australia
- **End users will look to preferred Australian nickel supply making the KNP a strategic and important part of the nickel supply chain which meets the high ESG standards expected by society**



All Nickel Supply Chains are NOT Equal



Maplecroft risk score
Low risk 7.5-10.0
Medium risk 5.0-7.5
High risk 2.5-5.0
Extreme risk 0.0-2.5

After Source: Maplecroft; Wood Mackenzie

Chinese funded nickel production in Indonesia

- ✗ High Risk/Of Concern ESG Jurisdictions¹
- ✗ Significant number of nickel projects will not comply with IRA, FEOC, EU CRMA making them less desirable to OEMs³



Kalgoorlie Nickel Project Goongarrie Hub

- ✓ Low Risk/Low Concern ESG jurisdiction¹
- ✓ Large resource, multi-decade operation, robust financial metrics, low Opex - strategic asset attractive to OEMs²
- ✓ Meets IRA, FEOC, EU CRMA conditions
- ✓ 100% Offtake available as part of Strategic Partner process
- ✓ Secure, battery mineral supply chain with high ESG standards

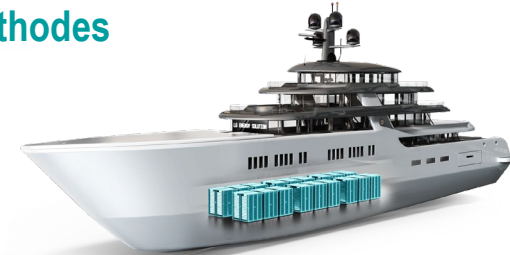
1. Wood Mackenzie LME Metals Forum Oct 2022. Benchmark Minerals World Tour Aus 2024
2. ARL PFS ASX Announcement, July 5 2023
3. US Inflation Reduction Act (IRA), Foreign Entity of Concern (FEOC) & EU Critical Raw Materials Act (CRMA)



Why Nickel in EV Batteries is the Ideal Choice

- **Nickel** batteries have nearly **twice the energy density of other materials**. Nickel-based lithium-ion batteries, such as Nickel-Cobalt-Manganese (NCM) help increase driving power and range
- A nickel-based battery **will weigh less and take up less room than other battery types**
- Nickel-based lithium-ion batteries continue to hold a large share of the EV landscape. Popular 2023 EV models using nickel batteries¹:
 - Tesla S (650km), Hyundai Ionic 6 (580km), Mercedes Benz EQS (560km), Tesla X (560km), VW ID.4 (530km), Tesla Y (530km) and GMC Hummer (530km)

- **Nickel batteries are leading EV applications** in Commercial and Public transport including bus, truck, utility, tractor and marine sectors
- Lithium-ion battery producers are favouring **high Ni (>90%) cathodes**



Nickel lithium-ion batteries will continue to be pivotal to EV performance

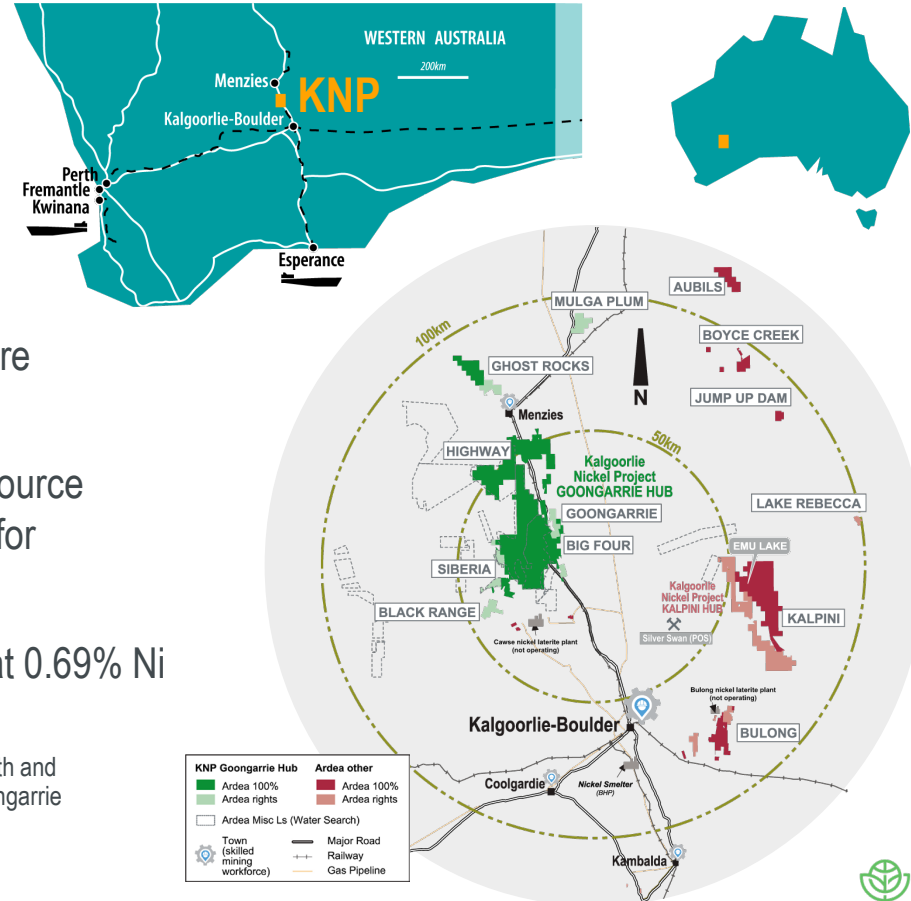
Photograph Source: LG Energy Solutions – “Leaders in creating the most advanced batteries in the world”
<https://www.lgensol.com/en/business-automotive-battery>



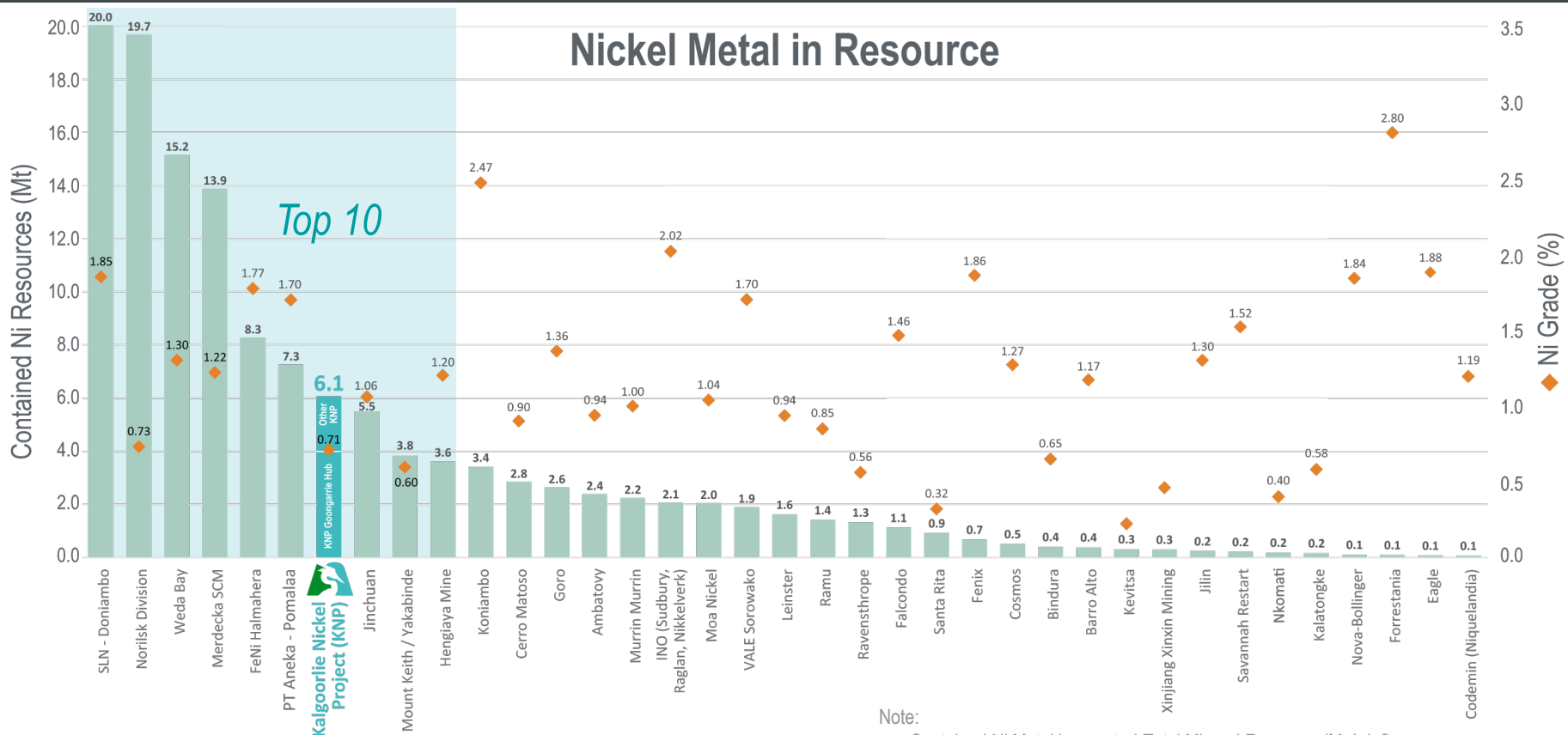
Kalgoorlie Nickel Project – Globally Significant Nickel & Cobalt Resource

- KNP – Goongarrie Hub, 70km northwest of the City of Kalgoorlie-Boulder is in the best operating jurisdiction in the world
- Ready access to skilled personnel, and key infrastructure, including road, rail, power and gas. Two port options, being Esperance and Kwinana, that are well serviced by the KNP road and rail network
- The Kalgoorlie Nickel Project (KNP) global Mineral Resource Estimate¹ (MRE) is 854Mt at 0.71% Ni and 0.045% Co for **6.1Mt contained nickel and 386kt contained cobalt**
- The KNP Goongarrie Hub MRE¹ now stands at 584Mt at 0.69% Ni and 0.043% Co for **4Mt of nickel and 250kt of cobalt**

KNP Goongarrie Hub MRE includes Goongarrie Hub deposits Ghost Rocks, Siberia South and Black Range that were not considered in the PFS and are expected to add to future Goongarrie plant feed and further extend the mine life.



Kalgoorlie Nickel Project Resource in Top 10 Globally



Note:

- Contained Ni Metal is reported Total Mineral Resource (M+I+Inf)
- See References for Global Nickel Resource chart in Appendices



KNP Goongarrrie Hub Ore Reserve¹

- 1.36Mt of nickel metal
- 99kt of cobalt metal
- Resource defined by >5,000 drill holes for >250km of drilling

Cross Section
669 7260mN

Highway

RAIL LINE

Goongarrrie Hill

Cross Section
666 9600mN

Goongarrrie South

GOONGARRRIE HUB
PROCESSING FACILITY

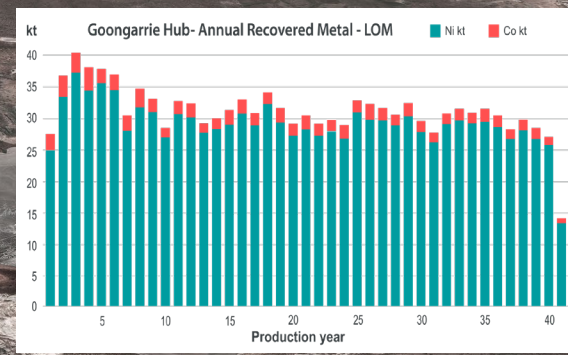
Big Four /
Scotia Dam

Siberia North



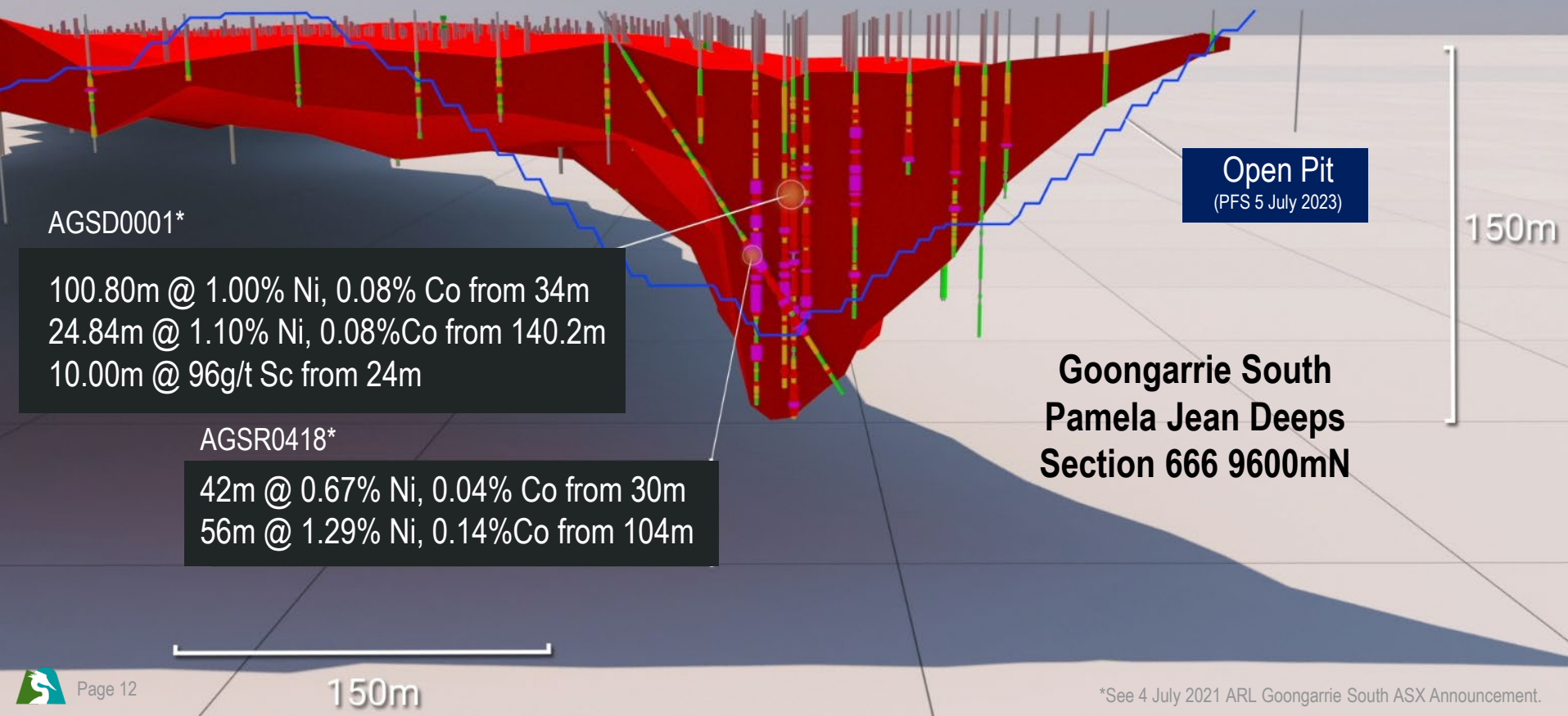
70km to Kalgoorlie-Boulder

GOLDFIELDS HWY



1. See full tables in Appendix and 5 July 2023 ARL ASX Announcement.

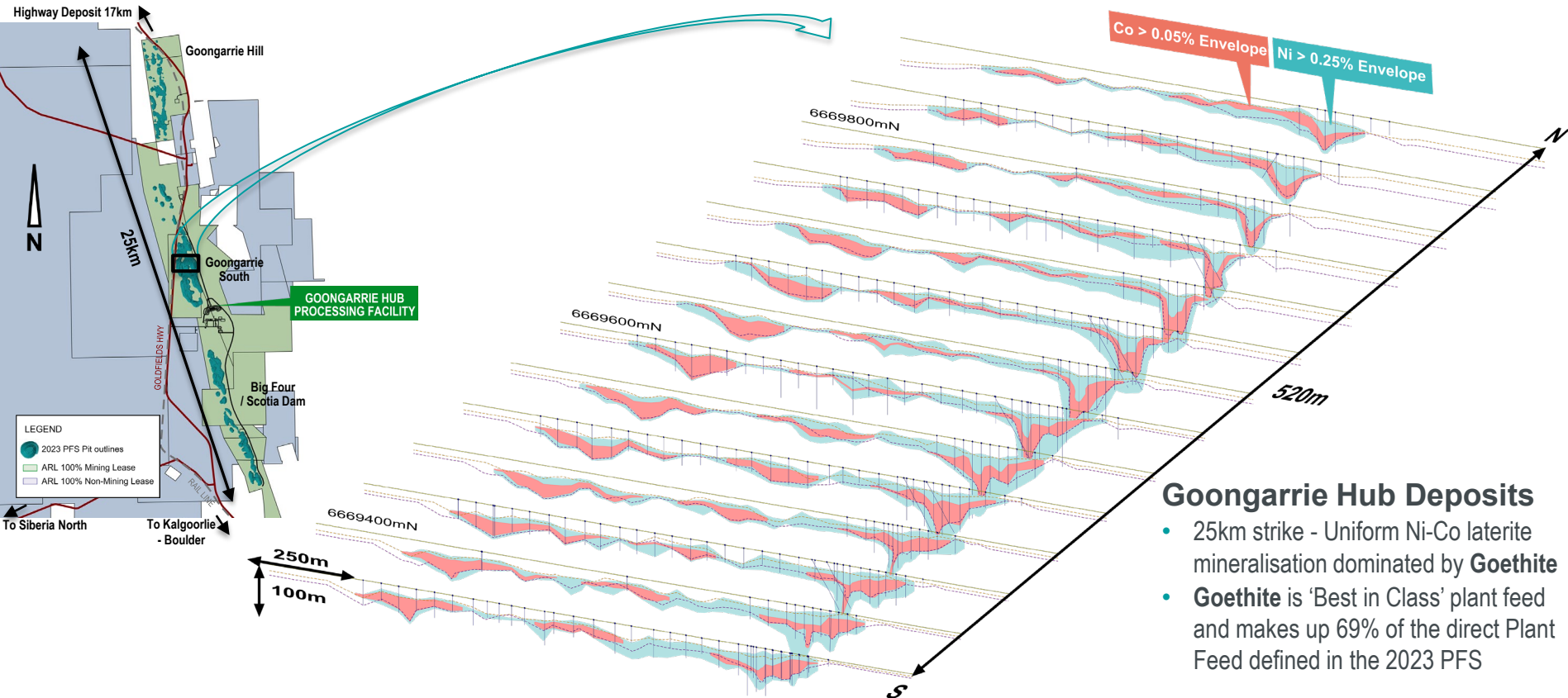
KNP Goongarrie Hub – Shallow, Thick, High-Grade Nickel



*See 4 July 2021 ARL Goongarrie South ASX Announcement.



Simple Mining Characteristics – Low-Cost Mining

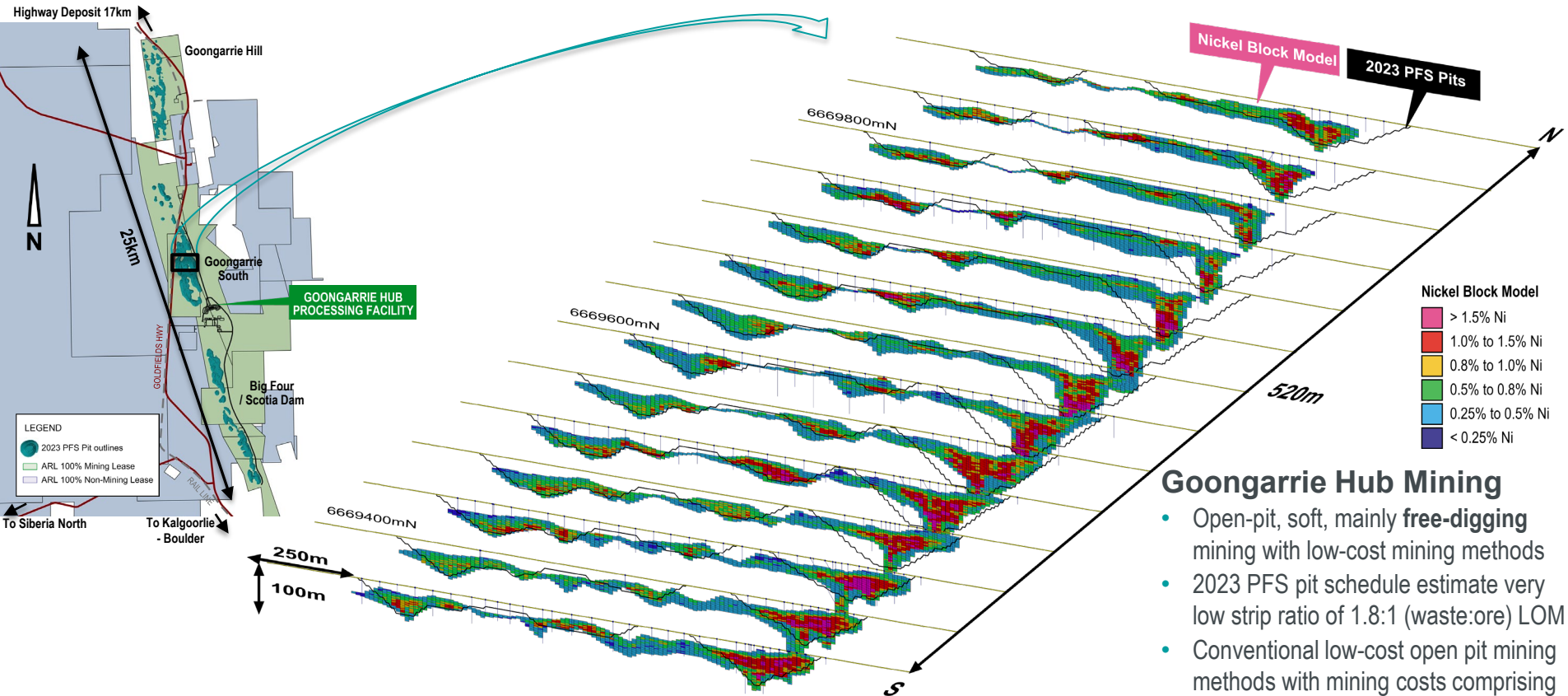


Goongarrie Hub Deposits

- 25km strike - Uniform Ni-Co laterite mineralisation dominated by **Goethite**
- **Goethite** is 'Best in Class' plant feed and makes up 69% of the direct Plant Feed defined in the 2023 PFS



Premium Goethite Nickel and Cobalt Ore



Goongarrie Hub Mining

- Open-pit, soft, mainly **free-digging** mining with low-cost mining methods
- 2023 PFS pit schedule estimate very low strip ratio of 1.8:1 (waste:ore) LOM
- Conventional low-cost open pit mining methods with mining costs comprising less than 12% of total OPEX*

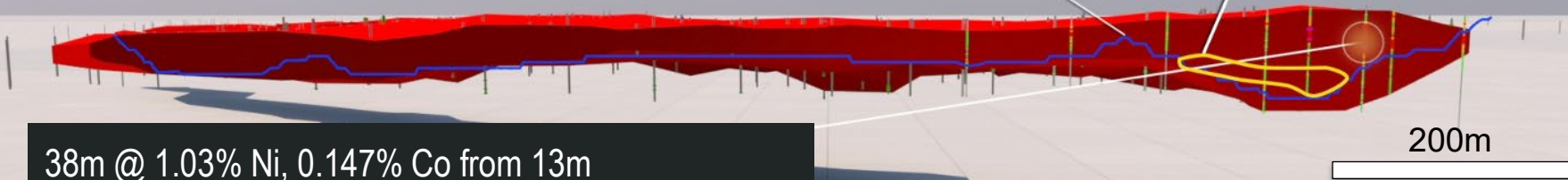


KNP Goongarrie Hub – Mineralised Neutraliser within Highway Ore

Highway Section 669 7260mN

Open Pit
(PFS 5 July 2023)

Mineralised Neutraliser



38m @ 1.03% Ni, 0.147% Co from 13m
inc 11m @ 1.22% Ni, 0.063% Co & 38g/t Sc from 16m
and 10m @ 1.40% Ni, 0.363% Co & 30g/t Sc from 29m

Brown Goethite

VHIRC0218

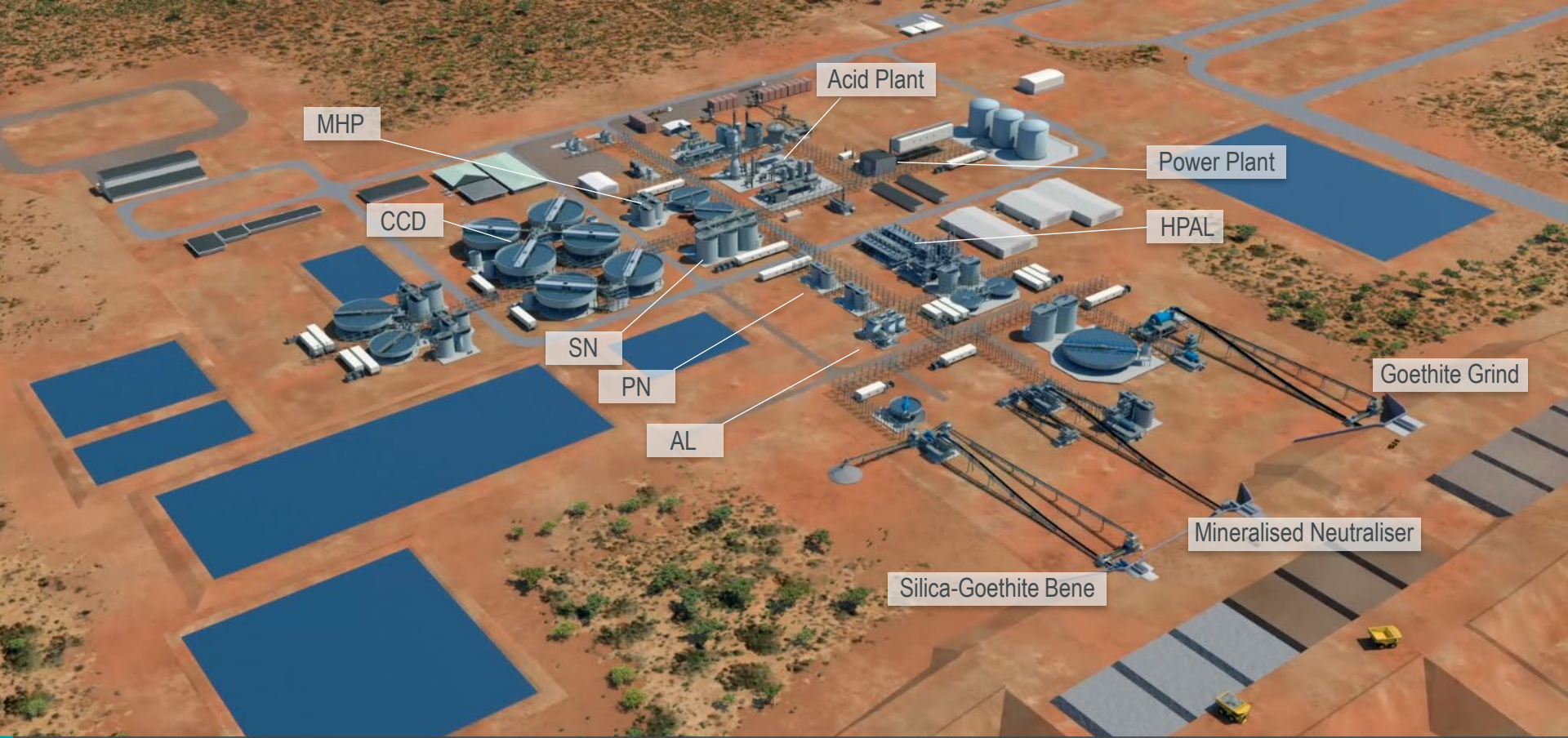
Typical white magnesite
Mineralised Neutraliser at Highway



See 16 November 2022 ARL Mineralised Neutraliser ASX Announcement.

* VHIRC0218 was drilled during Heron Resources / Vale INCO PFS 2005-2009.

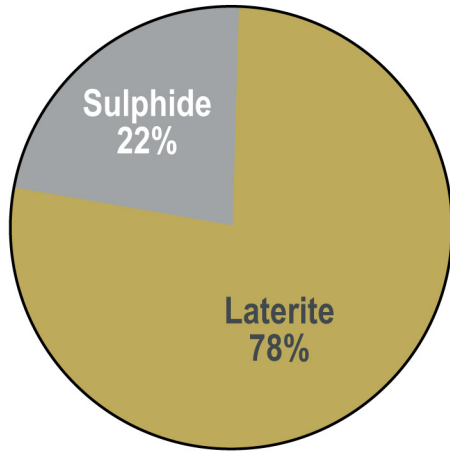




**2023 PFS Based on Desirable Flowsheet using Proven Technology
3.5Mtpa - 2 x 1.5Mtpa HPAL autoclaves plus 0.5Mtpa AL circuit**

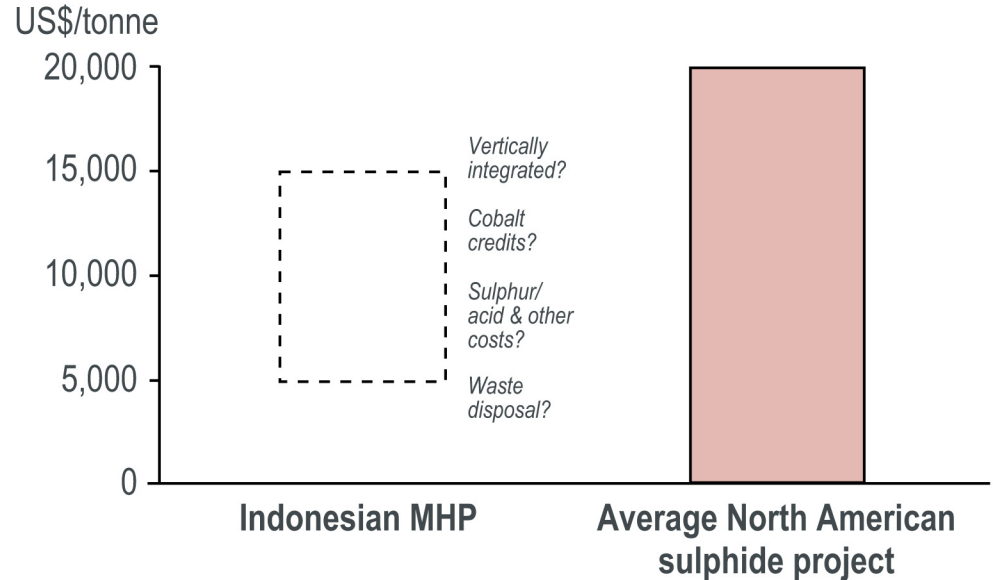
KNP Goongarrie Hub – Low Cost Nickel Laterite Production

Share of 2023 nickel production by ore type



Courtesy of Benchmark Mineral Intelligence © 2024
Data: Benchmark Nickel Forecast

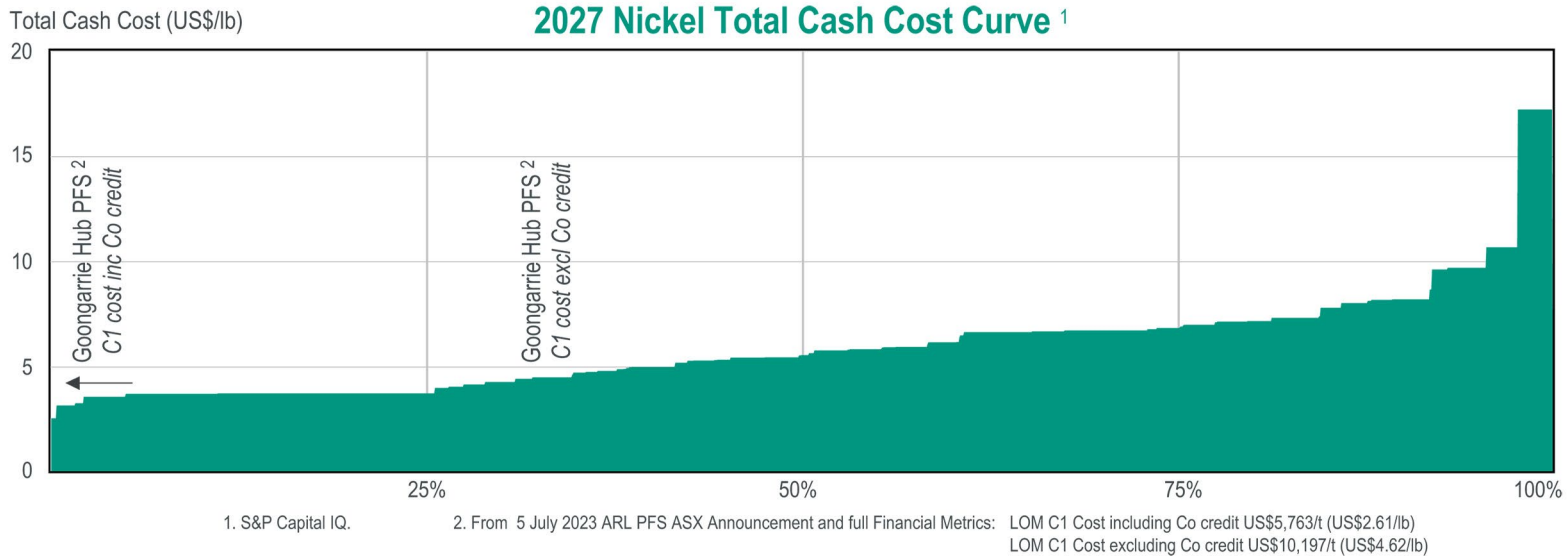
Approximate Ni production costs by route



KNP Goongarrie Hub Low C1 Opex after Cobalt credit of US\$5,763/t Ni in MHP LOM¹ compares well with Indonesian Opex and lower than most sulphide producers

1. See full tables in Appendix and 5 July 2023 ARL ASX Announcement.

Kalgoorlie Nickel Project – Robust Goongarrie Hub PFS Delivers



- Goongarrie Hub Ore Reserve² **194.1Mt at 0.70% Ni and 0.05% Co for 1.36Mt of nickel and 99,000t of cobalt** to sustain production of approximately **30,000t of nickel and 2,000t of cobalt per year for > 40 years**
- Strong financial metrics with average annual **EBITDA of A\$800M**, and Post-tax **NPV₇ of A\$4,980M (IRR 23%)²**
- Low cost C1 Opex after Cobalt credit of **US\$5,763/t Ni** in MHP LOM²



Collaboration Activities on DFS Scope of Work

- **Bids for key DFS work packages**, being reviewed for **final DFS Program / Budget**
- Hydrogeology planning to quantify long-term water supply
- Expanded seasonal baseline environmental studies concluded
- DFS metallurgical test work programs refined
- Commenced a detailed mine plan update to support a **potential increase in processing capacity to 4Mtpa**
- **Measured Resource and five-year production profile designed**, including infill drill hole spacing and metres required for DFS



KNP Goongarrie Hub DFS on-track to commence in the June 2024 Quarter



Ardea and Japanese Consortium Collaboration Advances

- **Ardea** collaboration with well-regarded and experienced Japanese Consortium (JC) comprised of **Sumitomo Metal Mining Co., Ltd** and **Mitsubishi Corporation** has resulted in completion of 2023 PFS due diligence, agreement on the DFS Scope of Work, with the DFS tender review and budget nearing completion¹
- Ardea and the JC are working towards executing Final Agreements before the end of March 2024 to facilitate the completion of the KNP Goongarrie Hub DFS, make a Final Investment Decision and jointly secure project development funding for this strategic nickel-cobalt project
- **Sumitomo Metal Mining** are most successful in developing and operating nickel-cobalt laterite operations. **Mitsubishi** has decades of project development and operations experience in Australia and globally

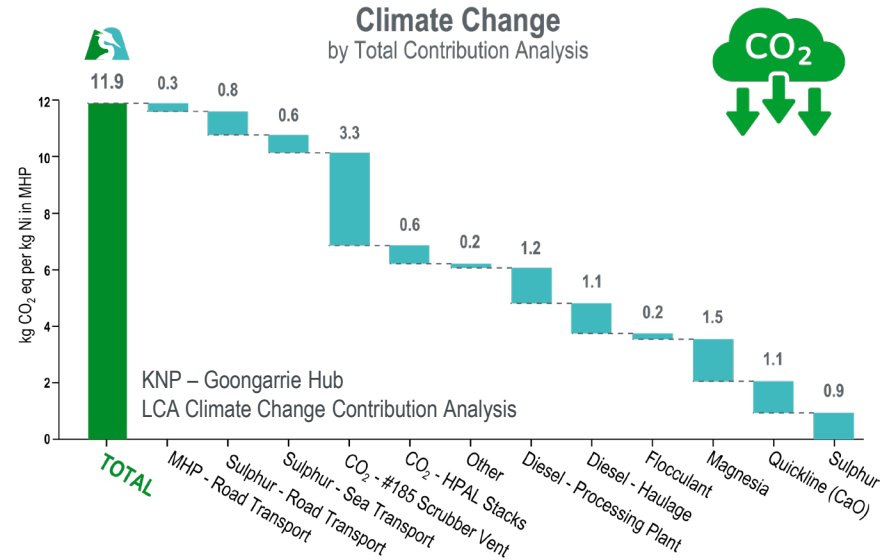
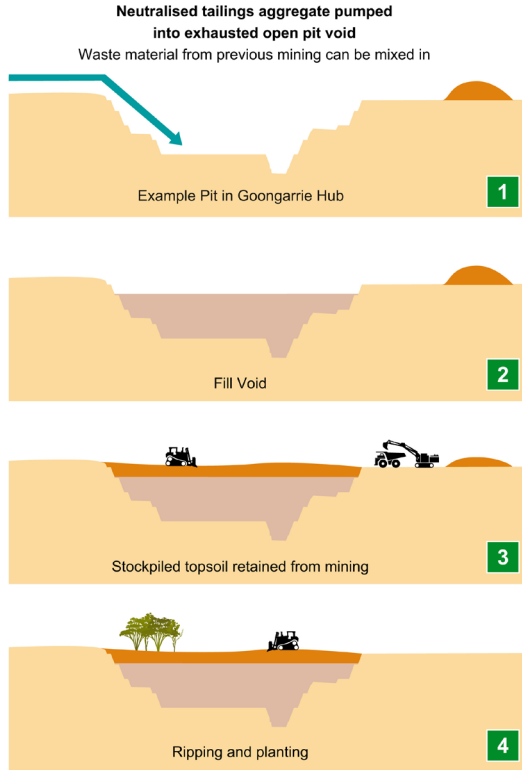


Top: Ardea's CEO part of Austrade Japan Critical Minerals delegation – April 2023
Bottom: Ardea and Japanese Consortium personnel at Ardea's West Kalgoorlie Office inspecting Goongarrie South drill core.

1. See 31 Jan 2024 Ardea Quarterly Report to 31 Dec 2023.

ESG Credentials Strengthened During PFS

In-pit tailings disposal¹ **minimises environmental footprint** and enables mine site rehabilitation, concurrent with steady-state mine operation.



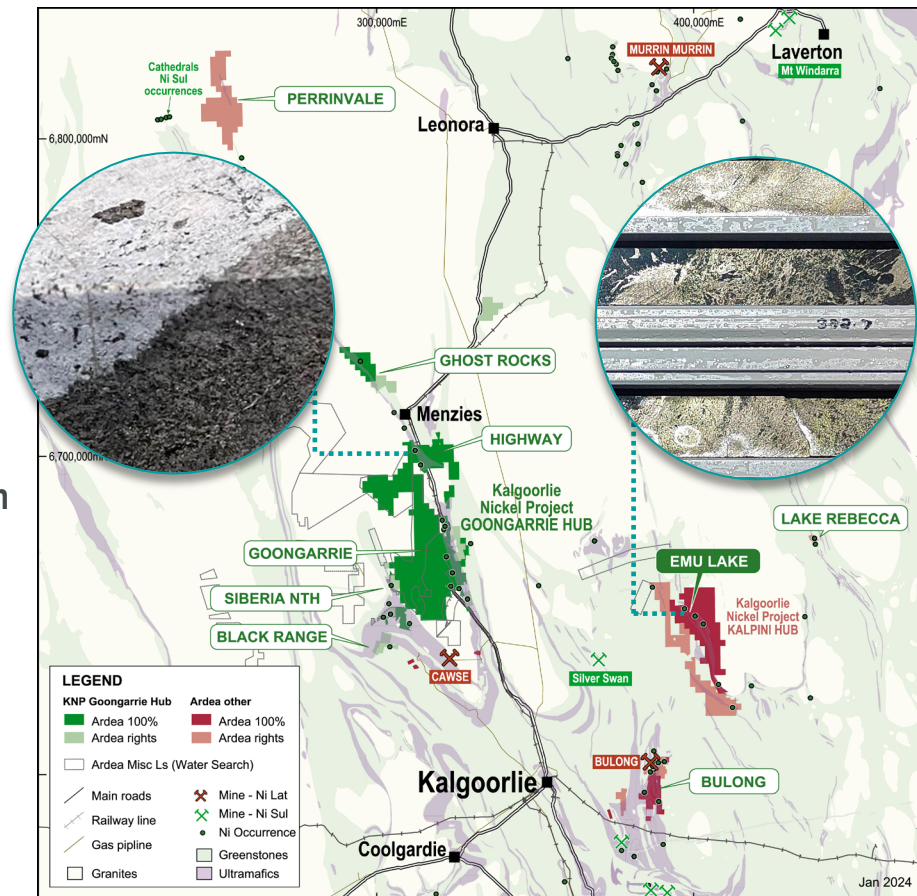
Life Cycle Assessment (LCA) is expected to be 11.9 kg CO₂ eq. per kg nickel in MHP based on Ardea's Scope 1, 2 and upstream Scope 3 emissions¹. **This compares favourably to the global average of ~13.0 kg CO₂ eq. per kg nickel produced.**

1. See 5 July 2023 ARL PFS ASX Announcement.

Ardea Exploration Pipeline Upside

Ardea controls **>4,400km² of tenure in the Eastern Goldfields of WA** with unrivalled **Battery and Critical Mineral** exploration potential

- **Kalpini Project - Massive nickel-copper-PGE sulphides discovered** at Emu Lake (AELD0003: 2.72m at 5.42% Ni & 0.85% Cu from 391.04m) within largely untested 20km of strike¹
- **Highway Project** – EIS hole AHID0024, beneath Highway Nickel Laterite, intersected multiple **lithium-caesium-rubidium** anomalous intermediate-felsic intrusives with high rubidium. Fractionated fertile Lithium-Caesium-Tantalum (LCT) mineral system confirmed, and also at **Ghost Rocks Project**, exploration ongoing²
- **Scandium and Rare Earth Elements (REE)** identified at Ardea's **KNP Goongarrie and Kalpini** tenure



1. See 14 Jan 2022 ARL ASX Announcement
2. See 15 Dec 2023 ARL ASX Announcement



Key Investment Considerations – For a Must Have Nickel-Cobalt Stock



KNP is a strategic asset owned 100% by Ardea - it is **the largest Ni-Co resource in Australia and in top 10 globally**, making it of a scale that is incredibly rare and important in the World's journey to Net Zero



Located in the **premier resources operating jurisdiction in the World**, compliant under US Inflation Reduction Act and Foreign Ownership criteria and EU Critical Raw Materials Act



Goongarrie Hub PFS starter project with **> 40 year mine life producing ~30ktpa nickel and 2ktpa cobalt**, with **strong earnings**, project **payback in 3.1 years** and **low C1 cost** will provide resilience throughout the price cycle¹



Ardea and **Japanese Consortium** collaboration has resulted in completion of 2023 PFS due diligence, agreement on the DFS Scope of Work, with DFS tender review and budget nearing completion. Focus executing Final Agreements²



Ardea controls **>4,400km² of tenure in the Eastern Goldfields of WA** with unrivalled **Battery and Critical Mineral** exploration potential



The **Ardea Team** have relevant experience, local knowledge and are working with **well-regarded partners** to deliver quality outcomes to benefit all stakeholders

1. See 5 July 2023 ARL PFS ASX Announcement and full Financial Metrics. See Appendices in this presentation

2. See 31 Jan 2024 ARL ASX Quarterly Report to 31 Dec 2023





Ardea Resources Limited

Keep up to date with news, videos and more
at our website: www.ardearesources.com.au
or follow our socials



For further information

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Our team welcome your questions

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Ardea
Resources Limited

Kalgoorlie Nickel Project Goongarrie Hub

A multi decade nickel-cobalt operation

Appendices:
Full tables and
supporting references



Australian Federal Government
- Major Project Status



OEMs will Increasingly Need to Secure Compliant Raw Material Supply



Photograph: Tesla Gigafactory, Austin Texas – Shutterstock Oct 1 2022

Dec 2023 - LG Chem breaks ground for America's largest cathode plant in Tennessee to **mass-produce NCMA (nickel, cobalt, manganese, aluminium) cathode materials**

<https://www.lgcorp.com/media/release/27138>

Dec 2023 LG Energy Solution to deliver around **200,000 NCM lithium-ion battery** modules to Clean Power Technology for public electric buses through to 2026

<https://www.lgcorp.com/media/release/27087>

Tesla Gigafactory Nevada planned expansion to 140GWh will **annually require:**
110-125kt Nickel (23.9% 2022 global supply)*
11kt-15kt Cobalt (9% 2022 global supply)*

Figures based on Benchmark Mineral Intelligence data as reported 1 Feb 2023 on metaltechnews.com. Raw material estimates based on current Tesla battery chemistries

Jun 2023 - LG started mass production of **single-crystal high-nickel cathodes for next-generation batteries** at its cathode plant located in Cheongju, Seoul. Annual production scale to expand to more than 50,000t

<https://www.lgcorp.com/media/release/26448>



Competent Persons

Information in this presentation has been summarised from ARL ASX MRE Announcement 30 July 2023, ARL ASX PFS Announcement 5 July 2023 and ARL ASX MOU Announcements 5 July 2023, 29 September 2023, 21 December 2023 and 31 January 2024.

Resource Estimation, Exploration Results, and Industry Benchmarking

The Resource Estimation, Exploration Results and Industry Benchmarking summaries are based on information reviewed or compiled by Mr Ian Buchhorn, and Mr Andrew Penkethman. Mr Buchhorn is a Member of the Australasian Institute of Mining and Metallurgy and Mr Penkethman is a Fellow of the Australasian Institute of Mining and Metallurgy and a Member of the Australian Institute of Geoscientists. Both Mr Buchhorn and Mr Penkethman are full-time employees of Ardea Resources Limited and have sufficient experience, which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which they are undertaking to qualify as a Competent Person as defined in the 2012 edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'.

Mr Buchhorn and Mr Penkethman have reviewed this press release and consent to the inclusion in this report of the information in the form and context in which it appears. Mr Buchhorn and Mr Penkethman own Ardea shares.

Ardea wishes to clarify that its current Kalgoorlie Nickel Project (KNP) Mineral Resource Estimate (MRE) following JORC Code (2012) guidelines is:

KNP	Resource Category	Size (Mt)	Ni (%)	Co (%)	Contained	Contained
					Ni (kt)	Co (kt)
Kalgoorlie Nickel Project Total	Measured	22	0.94	0.079	207	17
	Indicated	361	0.73	0.047	2,622	169
	Inferred	471	0.70	0.043	3,272	200
KNP	Grand Total	854	0.71	0.045	6,101	386

Note: 0.5% nickel cutoff grade used to report resources. Minor discrepancies may occur due to rounding of appropriate significant figures.

The Mineral Resource Estimate information shown in this ASX release has been previously released on the ASX platform by Ardea in ASX release 30 June 2023, in accordance with Listing Rule 5.8.

The Company confirms that it is not aware of any new information or data that materially affects the information included in the previous market announcement noted above and that all material assumptions and technical parameters underpinning the Mineral Resource Estimate in the previous market announcement continue to apply and have not materially changed. The Company confirms that the form and context in which the Competent Persons' findings are presented have not been materially modified from the original market announcement.

Ore Reserves

Information in this presentation that relates to Ore Reserves at the Kalgoorlie Nickel Project Goongarrie Hub is based on and fairly represents information and supporting documentation compiled by Mr Jake Fitzsimons, a Competent Person who is a full-time employee of Orelogy Mine Consulting, a company engaged by Ardea. Mr Fitzsimons is a Fellow of the Australasian Institute of Mining and Metallurgy. Mr Fitzsimons has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which is being undertaken to qualify as a Competent Person as defined in the 2012 Edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (2012 JORC Code). Mr Fitzsimons does not hold securities in Ardea and consents to the inclusion in this announcement of all technical statements based on his information in the form and context in which they appear.

Ardea wishes to clarify that its current Kalgoorlie Nickel Project (KNP) Goongarrie Hub Ore Reserve following JORC Code (2012) guidelines, based on the contents of the 5 July 2023 ASX announcement is:

Goongarrie Hub	Ore Reserve Category	Size (Mt)	Ni (%)	Co (%)	Contained	Contained
					Ni (kt)	Co (kt)
Ore Reserve	Proven	16.7	0.96	0.09	160	15
	Probable	177.4	0.68	0.05	1,204	84
	Grand Total	194.1	0.70	0.05	1,365	99

Note: Minor discrepancies may occur due to rounding of appropriate significant figures.

Full details on the Ore Reserve are available in the 5 July Ardea ASX announcement, see Section 5 and Appendix 1.

The Ore Reserve information shown in this ASX release has been previously released on the ASX platform by Ardea in ASX release 5 July 2023, in accordance with Listing Rule 5.9.

The Company confirms that it is not aware of any new information or data that materially affects the information included in the previous market announcement noted above and that all material assumptions and technical parameters underpinning the Ore Reserve in the previous market announcement continue to apply and have not materially changed. The Company confirms that the form and context in which the Competent Persons' findings are presented have not been materially modified from the original market announcement.



KNP Global nickel and cobalt Mineral Resources based on a 0.5% Ni cut-off grade

The Competent Persons (CP) for the Mineral Resources, are Mr Ian Buchhorn and Mr Andrew Penkethman, both are full-time employees of Ardea and consider the resource classification applied to the KNP resource models to reflect appropriate confidence in the input exploration data, geological interpretation and resource grade and tonnage estimates.

Various ASX market releases for the Mineral Resources described have been competed by Ardea, notably:

- 30 June 2023 'Kalgoorlie Nickel Project Mineral Resource Estimate Exceeds 6 Million Tonne Contained Nickel'.
- 16 June 2021 'Highway Nickel Deposit -Mineral Resource Estimate 92 million tonnes at 0.69% nickel and 0.038% cobalt'.
- 15 February 2021 'GNCP High Grade Resource -60 million tonnes at 1.0% nickel Sustainable Long-life Battery Metal Resource Confirmed'.

					Contained	Contained
KNP Hub	Resource Category	Size (Tonnes)	Ni (%)	Co (%)	Ni (kt)	Co (kt)
Goongarrie Hub	Measured	18,200,000	0.94	0.085	171	15
	Indicated	276,500,000	0.70	0.046	1,923	127
	Inferred	289,300,000	0.67	0.037	1,951	108
	Sub Total	584,000,000	0.69	0.043	4,044	250
Kalpini Hub	Indicated	15,900,000	1.06	0.055	169	9
	Inferred	113,600,000	0.76	0.047	859	53
	Sub Total	129,500,000	0.79	0.048	1,028	62
Yerilla Hub	Measured	3,800,000	0.94	0.048	36	2
	Indicated	68,400,000	0.78	0.049	531	33
	Inferred	67,800,000	0.68	0.057	462	39
	Sub Total	140,000,000	0.73	0.053	1,028	74
Kalgoorlie Nickel Project Total	Measured	22,000,000	0.94	0.079	207	17
	Indicated	360,800,000	0.73	0.047	2,622	169
	Inferred	470,700,000	0.70	0.043	3,272	200
KNP	Grand Total	853,500,000	0.71	0.045	6,101	386

Minor discrepancies may occur due to rounding of appropriate significant figures.

KNP Goongarrie Hub MRE

The Competent Persons (CP) for the Mineral Resources, are Mr Ian Buchhorn and Mr Andrew Penkethman, both are full-time employees of Ardea and consider the resource classification applied to the Goongarrie Hub resource models to reflect appropriate confidence in the input exploration data, geological interpretation and resource grade and tonnage estimates.

Various ASX market releases for the Mineral Resources described have been completed by Ardea, notably:

- 30 June 2023 'Kalgoorlie Nickel Project Mineral Resource Estimate Exceeds 6 Million Tonne Contained Nickel'.
- 16 June 2021 'Highway Nickel Deposit -Mineral Resource Estimate 92 million tonnes at 0.69% nickel and 0.038% cobalt'.
- 15 February 2021 'GNCP High Grade Resource -60 million tonnes at 1.0% nickel Sustainable Long-life Battery Metal Resource Confirmed'.

KNP Goongarrie Hub nickel and cobalt Mineral Resources based on a 0.5% Ni cut-off grade

Prospect	Resource	Size	Ni	Co	Contained Metal		Estimation Details		
	Category	(Mt)	(%)	(%)	Ni (kt)	Co (kt)	Method	Source	Year
Goongarrie South	Measured	18	0.94	0.085	171	15	LUC	Ardea	2021
	Indicated	82	0.71	0.049	584	40	LUC	Ardea	2021
	Inferred	10	0.64	0.033	61	3	LUC	Ardea	2021
Highway	Indicated	71	0.69	0.038	487	27	LUC	Ardea	2023
	Inferred	21	0.67	0.04	141	8	LUC	Ardea	2023
Ghost Rocks*	Inferred	47	0.66	0.042	312	20	OK	Snowden	2004
Goongarrie Hill	Indicated	40	0.65	0.037	259	15	LUC	Ardea	2021
	Inferred	29	0.6	0.025	176	7	LUC	Ardea	2021
Big Four	Indicated	49	0.71	0.047	346	23	LUC	Ardea	2021
	Inferred	14	0.68	0.043	96	6	LUC	Ardea	2021
Scotia Dam	Indicated	12	0.71	0.065	82	7	LUC	Ardea	2021
	Inferred	5	0.72	0.043	37	2	LUC	Ardea	2021
Goongarrie Subtotal	Measured	18	0.94	0.085	171	15			
	Indicated	253	0.69	0.044	1,758	112			
	Inferred	127	0.65	0.037	823	47			
	Combined	398	0.69	0.044	2,753	175			
Siberia South*	Inferred	81	0.65	0.033	525	27	OK	Snowden	2004
Siberia North	Indicated	14	0.72	0.042	102	6	Ni (UC), Co (OK)	Snowden	2009
	Inferred	72	0.74	0.034	534	25	Ni (UC), Co (OK)	Snowden	2009
Black Range*	Indicated	9	0.67	0.09	62	8	OK	HGMC	2017
	Inferred	10	0.69	0.1	68	10	OK	HGMC	2017
Siberia Subtotal	Indicated	24	0.7	0.061	165	14			
	Inferred	163	0.69	0.038	1,127	61			
	Combined	186	0.69	0.04	1,292	75			
KNP Goongarrie Hub TOTAL	Measured	18	0.94	0.085	171	15			
	Indicated	277	0.7	0.046	1,923	127			
	Inferred	289	0.67	0.037	1,951	108			
	Combined	584	0.69	0.043	4,044	250			

*Note - Mineral Resources that are not considered in 2023 PFS.

KNP Goongarrie Hub Ore Reserve Summary

KNP Goongarrie Hub Ore Reserve Summary consisting of ore above 0.5% Ni as the feed stock for the processing facility, and ore as Mineralised Neutraliser above 0.5% NiEq and LOI above 25%

Notes:

- The Ore Reserve is reported in accordance with JORC Code 2012.
- Ore reserves are reported at a cut-off of 0.5% Ni for primary feed stock to the processing facility, plus mineralised neutraliser as ore at a cut-off of 0.5% Ni Equivalent (NiEq) and Loss on Ignition (LOI) above 25%.
- NiEq defined using $Ni + 2.32 \times Co$.
- The Ore Reserve was evaluated using a base price of US\$22,000/t for Ni and US\$51,000/t for Co at 85% payable for a Mixed Hydroxide Precipitate (MHP) product, and an exchange rate 0.69 USD/AUD. In view of forward metal price projections averaging US\$25,000/t Ni, the Ore Reserve can be considered conservative.
- Ore Reserves account for mining dilution and mining ore loss.
- Ore Reserves are reported on a Dry Tonnage Basis.
- Proven Ore Reserves are based on Measured Mineral Resources only and Probable Ore Reserves are based on Indicated Mineral Resources only.
- The sum of individual amounts may not equal due to rounding.
- This Ore Reserve estimate is for a subset of the KNP Goongarrie Hub deposits being Goongarrie South, Big Four / Scotia Dam, Goongarrie Hill, Highway and Siberia North.
- The Ore Reserve Summary was detailed in ARL ASX PFS Announcement, 5 July 2023.
- Minor discrepancies may occur due to rounding of appropriate significant figures.

Deposit	Ore >= 0.5% Ni					Ore > 0.5% NiEq and LOI > 25%					Total Ore				
	Mt	Ni %	Co %	Ni kt	Co kt	Mt	Ni %	Co %	Ni kt	Co kt	Mt	Ni %	Co %	Ni kt	Co kt
Proven															
Goongarrie South	16.7	0.96	0.09	160	15	0.05	0.43	0.03	0.20	0.01	16.7	0.96	0.09	160	15
Sub-total	16.7	0.96	0.09	160	15	0.05	0.43	0.03	0.20	0.01	16.7	0.96	0.09	160	15
Probable															
Big Four/Scotia Dam	34.9	0.76	0.07	265	23	0.8	0.38	0.04	3	0	35.7	0.75	0.06	268	23
Goongarrie South	33.6	0.79	0.07	265	23	1.8	0.40	0.03	7	1	35.4	0.77	0.07	272	24
Goongarrie Hill	15.8	0.70	0.04	110	7	0.1	0.44	0.02	0	0	15.9	0.70	0.04	111	7
Highway	54.0	0.70	0.04	380	22	27.2	0.39	0.01	106	4	81.2	0.60	0.03	486	26
Siberia North	9.2	0.74	0.05	68	4	-	-	-	-	-	9.2	0.74	0.05	68	4
Sub-total	147.4	0.74	0.05	1,087	79	29.9	0.39	0.02	117	5	177.4	0.68	0.05	1,204	84
PROVEN AND PROBABLE TOTAL															
Big Four/Scotia Dam	34.9	0.76	0.07	265	23	0.8	0.38	0.04	3	0	35.7	0.75	0.06	268	23
Goongarrie South	50.2	0.85	0.08	425	38	1.9	0.40	0.03	7	1	52.1	0.83	0.07	432	39
Goongarrie Hill	15.8	0.70	0.04	110	7	0.1	0.44	0.02	0	0	15.9	0.70	0.04	111	7
Highway	54.0	0.70	0.04	380	22	27.2	0.39	0.01	106	4	81.2	0.60	0.03	486	26
Siberia North	9.2	0.74	0.05	68	4	-	-	-	-	-	9.2	0.74	0.05	68	4
TOTAL	164.1	0.76	0.06	1,247	94	30.0	0.39	0.02	117	5	194.1	0.70	0.05	1,365	99



PFS Key Financial Metrics

PFS defines > 40-year operation with strong financial metrics¹:

- Pre-tax NPV₇ of **A\$7,625M** (IRR 30%)
- Post-tax NPV₇ of **A\$4,980M** (IRR 23%)
- Average Annual EBITDA of **A\$800M**
- Project **pay back within 3.1 years**
- Low cost after Cobalt credit of **US\$5,763/t Ni in MHP LOM**

1. See 5 July 2023 ARL PFS ASX Announcement.
2. Post tax.
3. From start of operation.

Financials

Nickel Revenue	A\$ M	44,429
Cobalt Revenue	A\$ M	7,880
Revenue - combined	A\$ M	52,309
EBITDA LOM	A\$ M	34,217
EBITDA Annual (average)	A\$ M	800
EBITDA margin	%	65%
Net Cash Flow (Pre-tax)	A\$ M	31,100

Valuation

Net Present Value (NPV ₇) ²	A\$ M	4,980
Internal Rate of Return (IRR) ²	%	23%
Total Capital Payback ³	years	3.1

Assumptions

Exchange rate	AUD:USD	0.67
Nickel Price	US\$/t	25,000
Cobalt Price	US\$/t	60,000



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