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**Ardea**  
Resources Limited

Delivering Milestones

## Kalgoorlie Nickel Project - Goongarrie Hub

*A multi decade, large scale, low cost  
nickel-cobalt operation*

Andrew Penkethman  
Managing Director & CEO

Australian Nickel Conference  
9 October 2024

# 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 Mitsui & Co., Ltd (5 July 2023), Kalgoorlie Nickel Project Goongarrie Hub Tenement Consolidation (17 July 2023), Ardea Quarterly Activities Report June 2023 (27 July 2023), Ardea Annual Report 2023 (27 September 2023), Ardea and Japanese Consortium Update on MOU (29 September 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), Ardea Quarterly Activities Report December 2023 (31 January 2024), Ardea and Japanese Consortium: Update on Progress on KNP - Goongarrie Hub (29 February 2024), Ardea and Japanese Consortium: Update on Progress on KNP - Goongarrie Hub (27 March 2024), Ardea Quarterly Activities Report March 2024 (26 April 2024), ARL SMM and MC to form a JV to develop KNP Goongarrie Hub ASX Announcement (29 April 2024), Ardea Completes Updated Kalgoorlie Nickel Project ESG Accreditation From Independent Leading Global Platform (9 May 2024), Ardea receives \$1.1 million R&D Rebate (13 June 2024), Kalgoorlie Nickel Project - Goongarrie Hub DFS Drilling Underway (4 July 2024), Kalgoorlie Nickel Project - Goongarrie Hub DFS Underway (8 July 2024), Ardea Quarterly Activities Report June 2024 (30 July 2024), KNP – Goongarrie Hub Joint Venture FIRB Approval Received (14 August 2024), KNP – Goongarrie Hub Joint Venture Transaction Completion with Japanese Consortium (30 August 2024) and Ardea Annual Report 2024 (13 September 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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This presentation contains forward-looking statements regarding the Company's resources, intentions and future business. These statements reflect current information, expectations, intentions and strategies regarding the future, and are subject to certain risks and uncertainties. Should one or more of these risks or uncertainties materialise, or should any of the underlying assumptions prove incorrect, actual results may vary from the expectations, intentions and strategies described in this presentation. Investors are cautioned not to place undue reliance on forward-looking statements, which speak only as of the date they are made. Other than where required by law, the Company is under no obligation to revise any forward looking statement to reflect events or circumstances after the date of this presentation or to reflect the occurrence of unanticipated events.

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

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**199,682,915**

Shares on Issue

3,316,400 Performance Rights.  
3,000,000 Options

Top 40  
Shareholders  
**~60% equity**

Board and  
Management  
**~10% equity**

Market Cap  
**\$90M**

\$0.45 Share Price  
7 October 2024

Cash  
**\$14.8M**

At 30 June 2024

Consortium fully  
funding DFS  
**\$98.5M**

To earn 35% interest in KNP  
Goongarrie Hub with increase  
to 50% on successful FID<sup>1</sup>



**Mat Longworth** Non-Executive Chair

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



**Andrew Penkethman** MD & CEO

*Experienced geologist with strong technical and corporate focus including discovery and strategic partner success and ASX, TSX and AIM experience*



**Maree Arnason** Non-Executive Director

*Highly experienced director and executive in the natural resources, energy and manufacturing sectors*



**Ian Buchhorn** Executive Director

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



**Sam Middlemas** Company Secretary

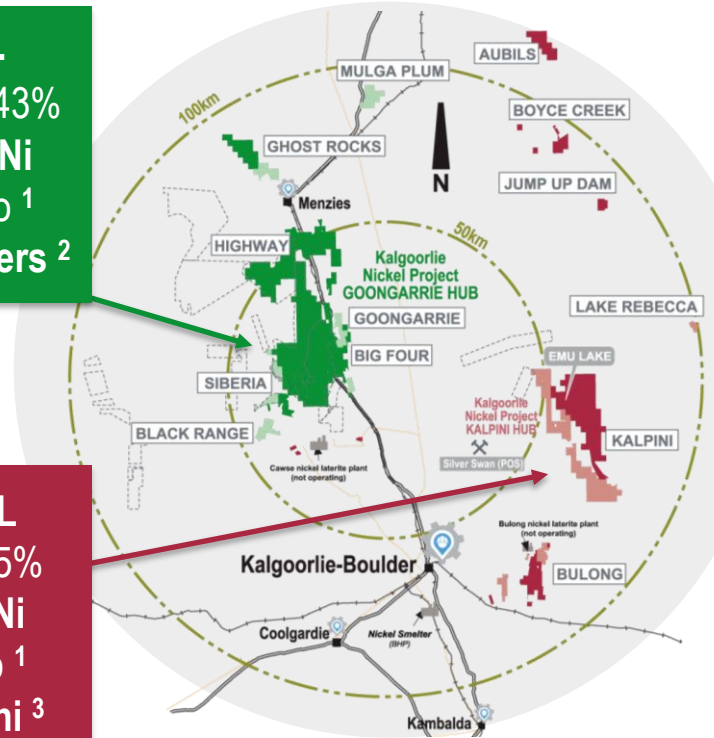
*Chartered Accountant experienced in providing Company Secretary services*



Globally significant,  
 large scale  
 nickel-cobalt  
 Mineral Resource  
 in one of the best  
 operating jurisdictions  
 in the world

**KNP Goongarrie Hub -**  
 584Mt at 0.69% Ni and 0.043%  
 Co for 4Mt of contained Ni  
 and 250kt of contained Co <sup>1</sup>  
 DFS fully funded by Partners <sup>2</sup>

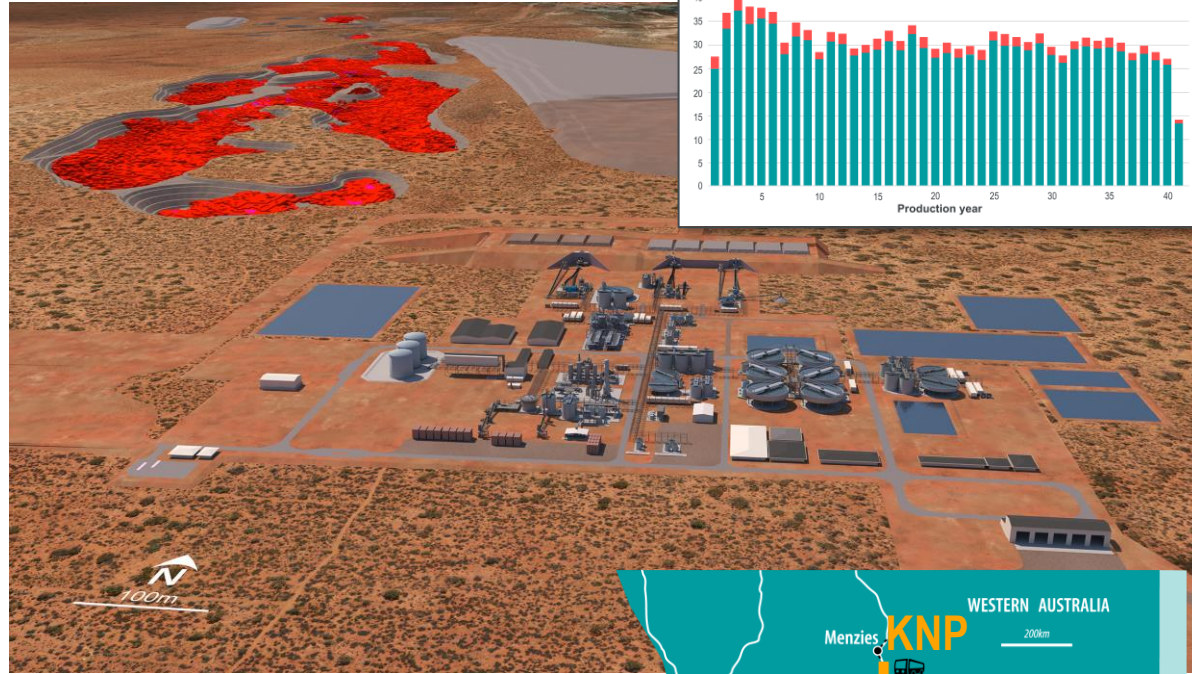
**Rest of KNP – 100% ARL**  
 270Mt at 0.74% Ni and 0.05%  
 Co for 2Mt of contained Ni  
 and 136kt of contained Co <sup>1</sup>  
 Plus Ni Sulphide at Kalpini <sup>3</sup>



KNP Goongarrie Hub		Ardea other	
<span style="color: green;">■</span>	KNPL 100%	<span style="color: red;">■</span>	Ardea 100%
<span style="color: lightgreen;">■</span>	KNPL rights	<span style="color: lightred;">■</span>	Ardea rights
<span style="border: 1px solid black; display: inline-block; width: 10px; height: 10px;"></span>	Misc Ls (Water Search)		
<span style="color: blue;">●</span>	Town (skilled mining workforce)	<span style="color: grey;">—</span>	Major Road
<span style="color: grey;">—</span>		<span style="color: grey;">—+—</span>	Railway
		<span style="color: yellow;">—</span>	Gas Pipeline

1. See full Mineral Resource Estimate (MRE) tables in Appendix 2 of this presentation and 30 June 2023 ARL ASX Announcement  
 2. See 30 August 2024 ASX release KNP Goongarrie Hub Joint Venture Transaction Completion with Japanese Consortium  
 3. See 14 January 2022 ASX release Emu Lake Nickel Sulphide discovery confirmed with 2.72m at 5.42% Ni

**Robust July 2023 PFS**  
**indicated on average**  
**30ktpa nickel and**  
**2ktpa cobalt at low**  
**operating costs for**  
**>40years,<sup>1</sup> attracting**  
**quality Strategic**  
**Partners<sup>2</sup>**



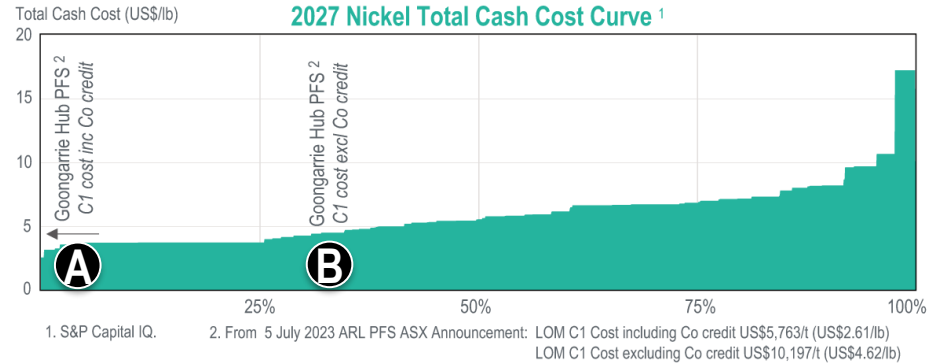
1. See full tables in Appendices 2 and 3 of this presentation and 5 July 2023 ARL Pre Feasibility Study (PFS) ASX Announcement  
2. See 30 August 2024 ASX release KNP Goongarrie Hub Joint Venture Transaction Completion with Japanese Consortium

# KNP - Goongarrie Hub

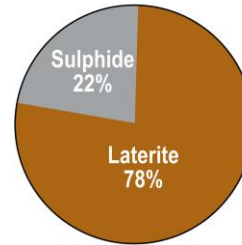
## Large scale, long life, low cost

Goongarrie Hub Ore Reserve<sup>2</sup> **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**

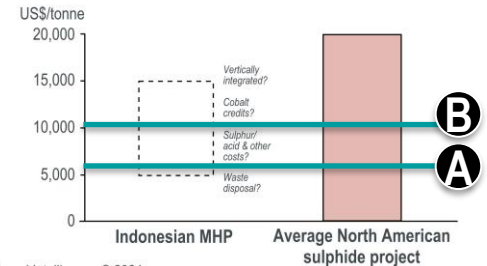
KNP Goongarrie Hub Low C1 Opex after Cobalt credit of **US\$5,763/t Ni** in MHP LOM<sup>2</sup> compares well with Indonesian Opex and lower than most current producers



Share of 2023 nickel production by ore type



Approximate Ni production costs by route

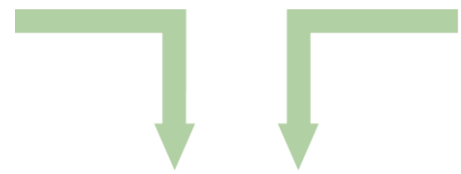


Courtesy of Benchmark Mineral Intelligence © 2024  
Data: Benchmark Nickel Forecast

2. See full tables in Appendix and 5 July 2023 ARL PFS ASX Announcement  
A. LOM C1 Cost including Co credit US\$5,763/t<sup>2</sup>  
B. LOM C1 Cost excluding Co credit US\$10,197/t<sup>2</sup>  
NB: Project MRE, Ore Reserve, Production, Operation and Financial numbers are being updated as part of the in-progress DFS

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**Milestone agreement  
with SMM & MC, to  
develop the KNP  
Goongarrie Hub with  
Consortium to fully fund  
the in progress DFS up  
to A\$98.5M<sup>1,2</sup>**



Kalgoorlie Nickel Pty Ltd (KNPL)  
**Managing underway  
KNP Goongarrie Hub  
Definitive Feasibility Study (DFS)**

1. Sumitomo Metal Mining (SMM) and Mitsubishi Corporation (MC), together the Consortium, fully funding DFS up to A\$98.5M to earn 35% interest in KNPL, and a further 15% interest in KNPL on Final Investment Decision (FID). Consortium to assist KNPL in optimising debt financing
2. See 30 August 2024 ASX release KNP Goongarrie Hub Joint Venture Transaction Completion with Japanese Consortium

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# Fully funded DFS underway at KNP Goongarrie Hub, to generate strong news flow



Ore preparation testwork on Goongarrie was conducted at the Bureau Veritas laboratories. Spot analyses using a hand-held XRF enabled rapid, cost-effective decisions to be made (Image used with permission of BV and RCS Australia).

Metallurgical test work for DFS process design studies in progress  
**Evaluating increase to 4Mtpa processing capacity** through reducing residence time in the autoclaves from 70 mins to 60 mins<sup>1</sup>

Engineering firm

**Ausenco awarded the Process Plant contract<sup>2</sup>**

**Mineral Resource updates in progress** with work on geology domain interpretations for DFS resource estimates, to be finalised after the Measured Infill drilling program is completed<sup>3</sup>

Infill Drilling underway to upgrade definition of Mineral Resources into Measured category within the first five year pit shells to be available for conversion to **Proven Ore Reserve<sup>2</sup>**

**Other activities which have commenced:**

mine geotechnical and mine hydrogeological field investigations; bore water supply pumping and piping design; and construction camp design<sup>3</sup>

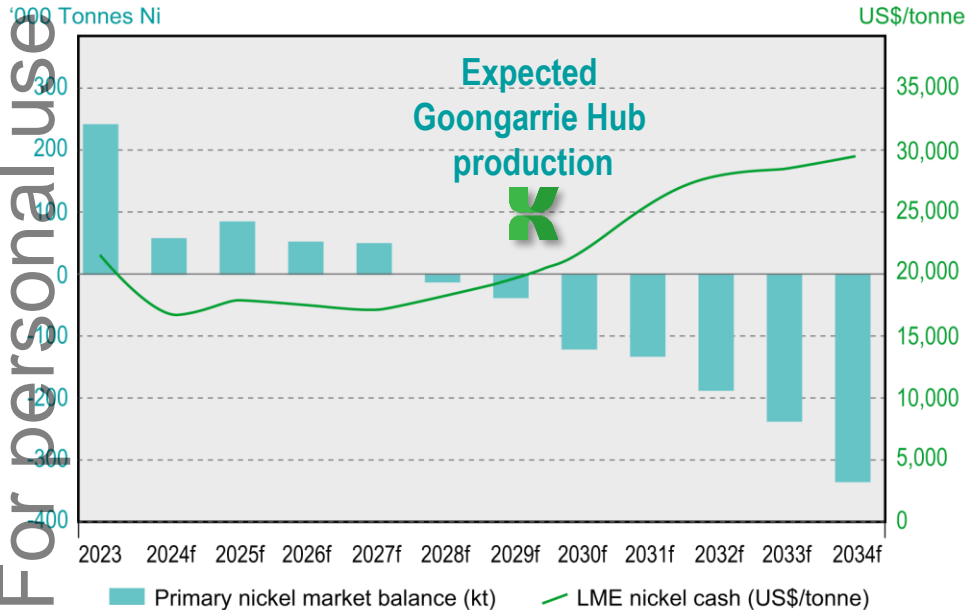
1. Supported by metallurgy testwork results as low as 40 mins – See 24 July 2018 Goongarrie Expansion Study ASX Announcement
2. See 8 July 2024 Kalgoorlie Nickel Project - Goongarrie Hub DFS Underway ASX Announcement
3. See 13 September 2024 ASX release Ardea Resources Annual Report 2024



# Security and diversity of nickel supply is imperative with KNP Goongarrie Hub production perfectly timed

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### Nickel Market Balance and Price Forecast

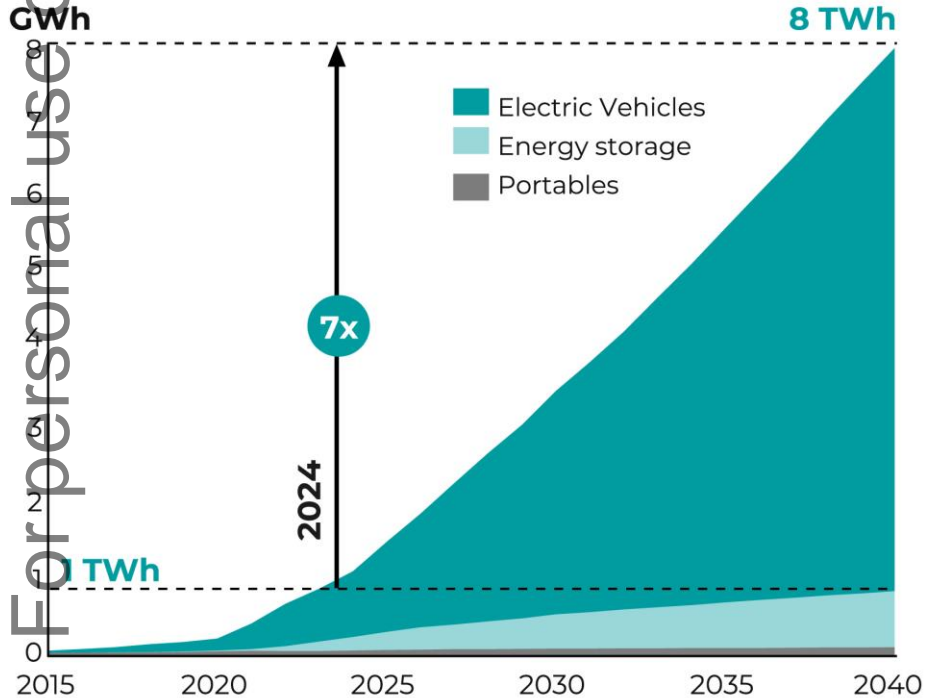


After Source: Fastmarkets Long Term Forecasts 2024

- 2023-24 nickel surplus has led to higher cost producers cutting or ceasing production
- Security and continuity of Critical Mineral supply at risk in poor ESG jurisdictions
- 2024-2027 forecast showing reducing surplus, with supply gap increasing progressively from 2028, with forecast nickel prices correspondingly rising – **perfectly timed for Goongarrie Hub expected production**

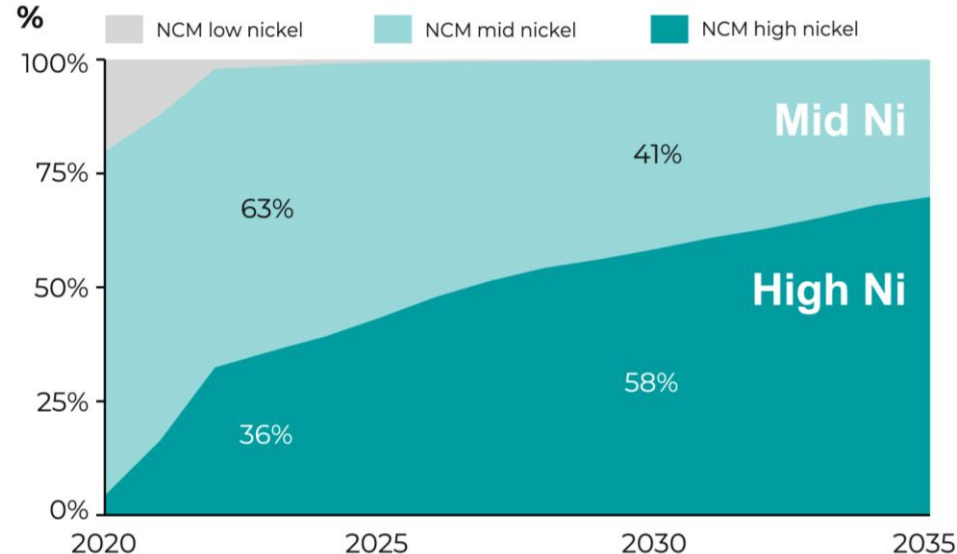
# Battery demand to grow 7-fold by 2040, while high-nickel cathodes to push up nickel demand over the long term

Battery demand by market segment



Stainless steel will continue to be the main market for **Nickel**, but **Li-ion batteries** will drive 60% of the long-term demand growth. NCM cathode chemistries will shift towards a slightly higher share of high-nickel intensity.

NCM cathode demand by chemistry



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# The KNP Goongarrie Hub will contribute significantly to local, state and national economy and will be an important part of the Australian Nickel sector



**40 year mine life**

producing

**30ktpa nickel & 2ktpa cobalt<sup>1,2</sup>**



**3,000 Jobs** during Construction

**>800**

Operational workforce<sup>1,2,3</sup>

**+ indirect jobs**



Project to **support local, state, national, communities, suppliers and stakeholders**



**Long term supply of low cost<sup>1,2</sup> Nickel-Cobalt**

Innovative R&D & high ESG standards growing Australian Ni Sector

1. See 5 July 2023 ARL PFS ASX Announcement and Appendices of this presentation for Key Financial Metrics  
2. Project Ore Reserve, production, operation and financial numbers are being updated in current in-progress DFS  
3. Workforce estimates presented are based on past and current studies, and other industry examples. Indirect employment is not included in estimate. e.g. boost to local employment in City of Kalgoorlie-Boulder and Shire of Menzies site services, hospitality, equipment maintenance, logistics and more



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Resources Limited

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## Appendices

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# Appendix 1 - Competent Persons

Information in this presentation has been summarised from ARL ASX MRE Announcement 30 June 2023, ARL ASX PFS Announcement 5 July 2023 and ARL ASX Consortium Announcement 26 April 2024, 14 August 2024 and 30 August 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 Ni (kt)	Contained 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 Mineral Resource Estimate in the above table is inclusive of the Ore Reserve shown in the table opposite.

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 Orelody 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.

					Contained Ni (kt)	Contained Co (kt)
Goongarrie Hub	Ore Reserve Category	Size (Mt)	Ni (%)	Co (%)		
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.

# Appendix 2 - KNP Global MRE

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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'.

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

					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
	<b>Sub Total</b>	<b>584,000,000</b>	<b>0.69</b>	<b>0.043</b>	<b>4,044</b>	<b>250</b>
Kalpini Hub	Indicated	15,900,000	1.06	0.055	169	9
	Inferred	113,600,000	0.76	0.047	859	53
	<b>Sub Total</b>	<b>129,500,000</b>	<b>0.79</b>	<b>0.048</b>	<b>1,028</b>	<b>62</b>
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
	<b>Sub Total</b>	<b>140,000,000</b>	<b>0.73</b>	<b>0.053</b>	<b>1,028</b>	<b>74</b>
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	<b>Grand Total</b>	<b>853,500,000</b>	<b>0.71</b>	<b>0.045</b>	<b>6,101</b>	<b>386</b>

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

# Appendix 2 continued

## 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'.

The Goongarrie Hub Mineral Resources shown in the adjacent table for the Goongarrie South, Highway, Goongarrie Hill, Big Four, Scotia Dam and Siberia North deposits are inclusive of the Ore Reserves shown in this presentation.

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			
<b>KNP Goongarrie Hub TOTAL</b>	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	<b>584</b>	<b>0.69</b>	<b>0.043</b>	<b>4,044</b>	<b>250</b>			

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



# Appendix 2 continued - 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.
- The Goongarrie Hub Mineral Resources shown in the prior slide for the Goongarrie South, Highway, Goongarrie Hill, Big Four, Scotia Dam and Siberia North deposits are inclusive of the Ore Reserves shown in this presentation.

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
<b>Proven</b>															
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
<b>Sub-total</b>	<b>16.7</b>	<b>0.96</b>	<b>0.09</b>	<b>160</b>	<b>15</b>	<b>0.05</b>	<b>0.43</b>	<b>0.03</b>	<b>0.20</b>	<b>0.01</b>	<b>16.7</b>	<b>0.96</b>	<b>0.09</b>	<b>160</b>	<b>15</b>
<b>Probable</b>															
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
<b>Sub-total</b>	<b>147.4</b>	<b>0.74</b>	<b>0.05</b>	<b>1,087</b>	<b>79</b>	<b>29.9</b>	<b>0.39</b>	<b>0.02</b>	<b>117</b>	<b>5</b>	<b>177.4</b>	<b>0.68</b>	<b>0.05</b>	<b>1,204</b>	<b>84</b>
<b>PROVEN AND PROBABLE TOTAL</b>															
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
<b>TOTAL</b>	<b>164.1</b>	<b>0.76</b>	<b>0.06</b>	<b>1,247</b>	<b>94</b>	<b>30.0</b>	<b>0.39</b>	<b>0.02</b>	<b>117</b>	<b>5</b>	<b>194.1</b>	<b>0.70</b>	<b>0.05</b>	<b>1,365</b>	<b>99</b>

# Appendix 3 - PFS Key Financial Metrics

**PFS defines > 40-year operation with strong financial metrics<sup>1</sup>:**

Pre-tax NPV<sub>7</sub> of **A\$7,625M** (IRR 30%)

Post-tax NPV<sub>7</sub> 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**

<sup>1</sup> See 5 July 2023 ARL PFS ASX Announcement.

<sup>2</sup> Post tax.

<sup>3</sup> From start of operation.

NB: Project MRE, Ore Reserve, Production, Operation and Financial numbers are being updated as part of the in-progress DFS

## 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 <sub>7</sub> ) <sup>2</sup>	A\$ M	4,980
Internal Rate of Return (IRR) <sup>2</sup>	%	23%
Total Capital Payback <sup>3</sup>	years	3.1

## Assumptions

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

# Appendix 3 continued - PFS 2023 Capital Cost Estimate

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## KNP – Goongarrie Hub

Contingency considered appropriate to the level of the capital cost estimate has been included

Base date March 2023

Refer to 5 July 2023 ARL PFS ASX Announcement for full details and Reasonable Basis Statement

Preproduction Cost Category	Costs (A\$)
Mining – overheads, mobilisation, pre-strip and other	98M
Process plant & infrastructure	2,264M
Sulphuric acid, steam and power plant	574M
Borefield	181M
<b>Total Capital Cost<sup>1</sup></b>	<b>3,117M</b>

Ardea 5 July 2023 PFS capital cost estimate based on a 3.5Mtpa processing operation consisting of x2, 1.5Mtpa HPAL autoclaves and a 0.5Mtpa Atmospheric leach circuit.



# Appendix 3 continued - DFS Key Budget Items

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The Consortium (SMM and MC) will fund 100% of the KNP Goongarrie Hub DFS costs, up to the agreed budget of A\$98.5 million

DFS Cost Centre	Costs (A\$)
Drilling	13.4M
Metallurgical Test Work	2.3M
Mine Design (incl dewatering & geotechnical)	15.0M
Process Plant Design	28.3M
Buildings and Camp Design	5.3M
Approvals	4.9M
Staff, Corporate and Other	26.2M
Other Expert Consultants	1.5M
Tenement Costs	1.6M
<b>DFS Total Budget</b>	<b>98.5M</b>



# Appendix 3 cont – KNP Goongarrie Hub Superior HPAL Intensity

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- ✓ Good ore grade + good slurry density = Lower Capex & Opex \$\$
- ✓ Atmospheric leach = stable operation, utilizes saprolite resource
- ✓ MHP & MSP Product = known technology & good market acceptance



## Operating data from Australian HPAL Producers

Performance Driver	Ardea	Bulong#	Cawse#	Murrin	RNO <sup>^</sup>	Metric	Ardea Rank	Comment
Atmospheric Leach	Yes	No	No	No	Yes	-	#1	Stable operation and full resource utilisation
HPAL Feed Density	45%	31%	35%	38%	42%	% Solids	#1	The higher the better = Maximises plant throughput
Residence Time	70*	75	105	90	60	minutes	#2	The lower the better = Maximises plant throughput
Slurry Grade Ni	7.55	2.89	3.07	3.87	7.39	Ni kg/m3	#1	The higher the better = Increased revenue stream
Slurry Grade Co	0.59	0.23	0.24	0.34	0.31	Co kg/m3	#1	The higher the better = Strategic Co-Product credits

Data Sources: Ardea – Goongarrie Hub testwork results from PFS and Expansion Study, ASX release 28 March 2018 & Goongarrie Expansion Study, 24 July 2018 and ongoing project assessment as part of completing the DFS. Bulong, Cawse, Murrin - ALTA 1999, An Engineering Comparison of the Three Treatment Flowsheets In WA Nickel Laterite Projects. RNO – ALTA 2001, Observations from the RNO Pilot Plant at Lakefield Research, 2000 AD.

<sup>^</sup>Ravensthorpe Nickel Operation (RNO) figures based on design numbers on upgraded beneficiated ore from the Halley's Deposit which has since been mined out. # Bulong & Cawse – care and maintenance

Ardea data is based on non-beneficiated material (with always an option to beneficiate selected KNP geo-met types, notably at Highway & Goongarrie Hill).

\*Goongarrie Hub DFS to assess reduction in Ardea residence time from 70 minutes to 60 minutes. Residence time 45 minutes estimated in Goongarrie Expansion Study (ASX announcement 24 July 2018)



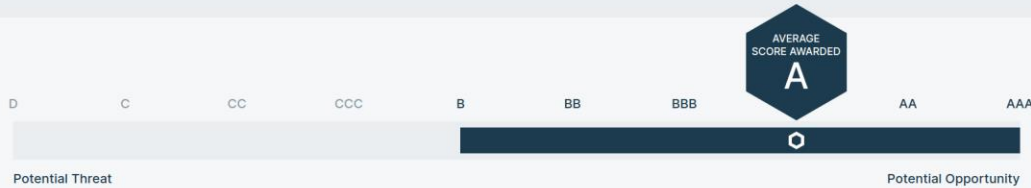
# Ardea Receives Improved ESG Certification Score 2024



  
Australian Federal Government  
- Major Project Status

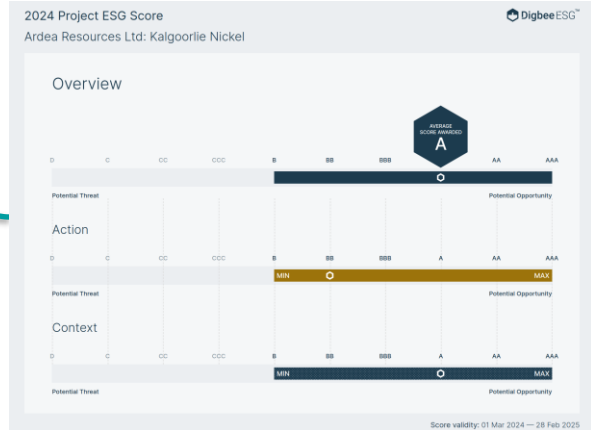
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2024 Overall ESG score: Ardea Resources Ltd



Score validity: 01 Mar 2024 — 28 Feb 2025

## 2024 ESG Scores for Ardea



Ardea's work practices are aimed at meeting or exceeding the high ESG standards expected by modern society with continuous improvement shown in the two Digbee ESG™ surveys completed



# Unlocking Value of Kalgoorlie Nickel Project

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**Ardea**  
Resources Limited

NON KNP Goongarrie Hub  
Projects

KNP Goongarrie Hub

Non KNP Goongarrie Hub Projects including:

- KNP Kalpini & Yerilla Hubs MRE 270Mt @ 0.74% Ni & 0.05% Co for 2Mt of contained Ni & 136kt of contained Co<sup>^</sup>
- Kalpini Project - Massive Nickel Sulphide discovery at Emu Lake
- Scandium and Rare Earth Elements identified at KNP Kalpini
- Perrinvale Project prospective nickel sulphide

 **SUMITOMO  
METAL MINING**

 **Mitsubishi Corporation**

80%

20%

Incorporated  
Joint Venture (IJV)

 **KALGOORLIE  
NICKEL**

Kalgoorlie Nickel Pty Ltd (KNPL)  
**KNPL is 100% subsidiary of Ardea and holds the KNP Goongarrie Hub.**  
Forming a Joint Venture with the Consortium, who will contribute financially and technically to ultimately earn a 50% interest in KNPL\*, Ardea will retain 50% interest into production

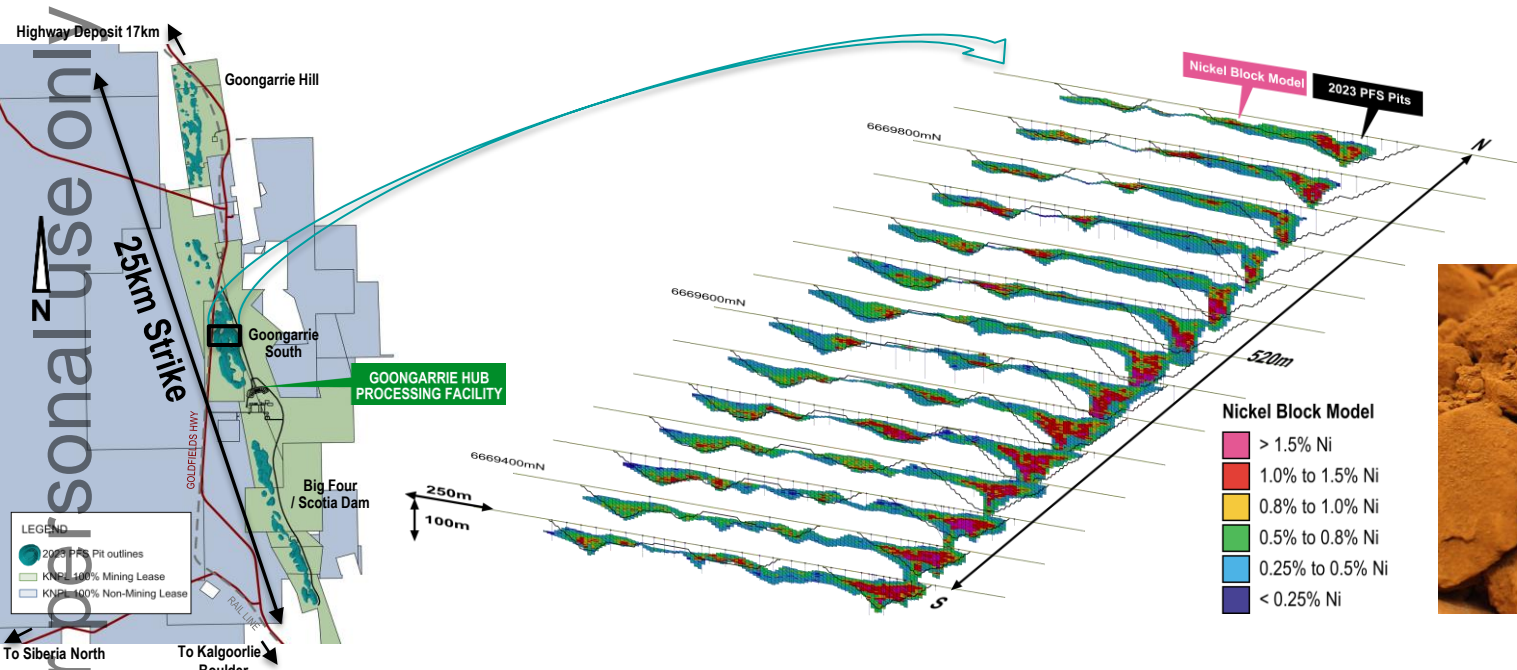
\* The Consortium comprised of Sumitomo Metal Mining (SMM) and Mitsubishi Corporation (MC) are fully funding DFS to A\$98.5M and assisting KNPL in optimising debt financing to earn:

MILESTONE	INTEREST IN KNPL
DFS 50% Complete:	17.5%
DFS Completion:	35.0%
FID Approval:	50.0%

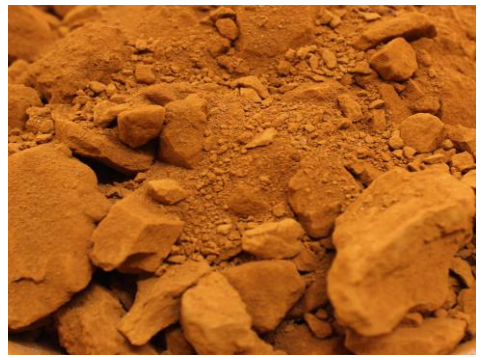
<sup>^</sup> See 30 June 2023 ARL MRE announcement. Or see Appendix 2 in this presentation

\* See 30 August 2024 ASX release KNP Goongarrie Hub Joint Venture Transaction Completion with Japanese Consortium

# Premium Goethite Nickel-Cobalt Ore - Low Cost Characteristics



Typical premium high grade Goethite at Goongarrarie South



- 25km continuous strike of soft, mainly **free-digging** premium Goethite best in class plant feed makes up 69% of the direct Plant Feed defined in the 2023 PFS<sup>1</sup>
- Conventional low-cost open pit mining with mining costs less than 12% of total OPEX with 2023 PFS<sup>1</sup> pit schedule very low strip ratio of 1.8:1 (waste:ore) Life of Mine (LOM)

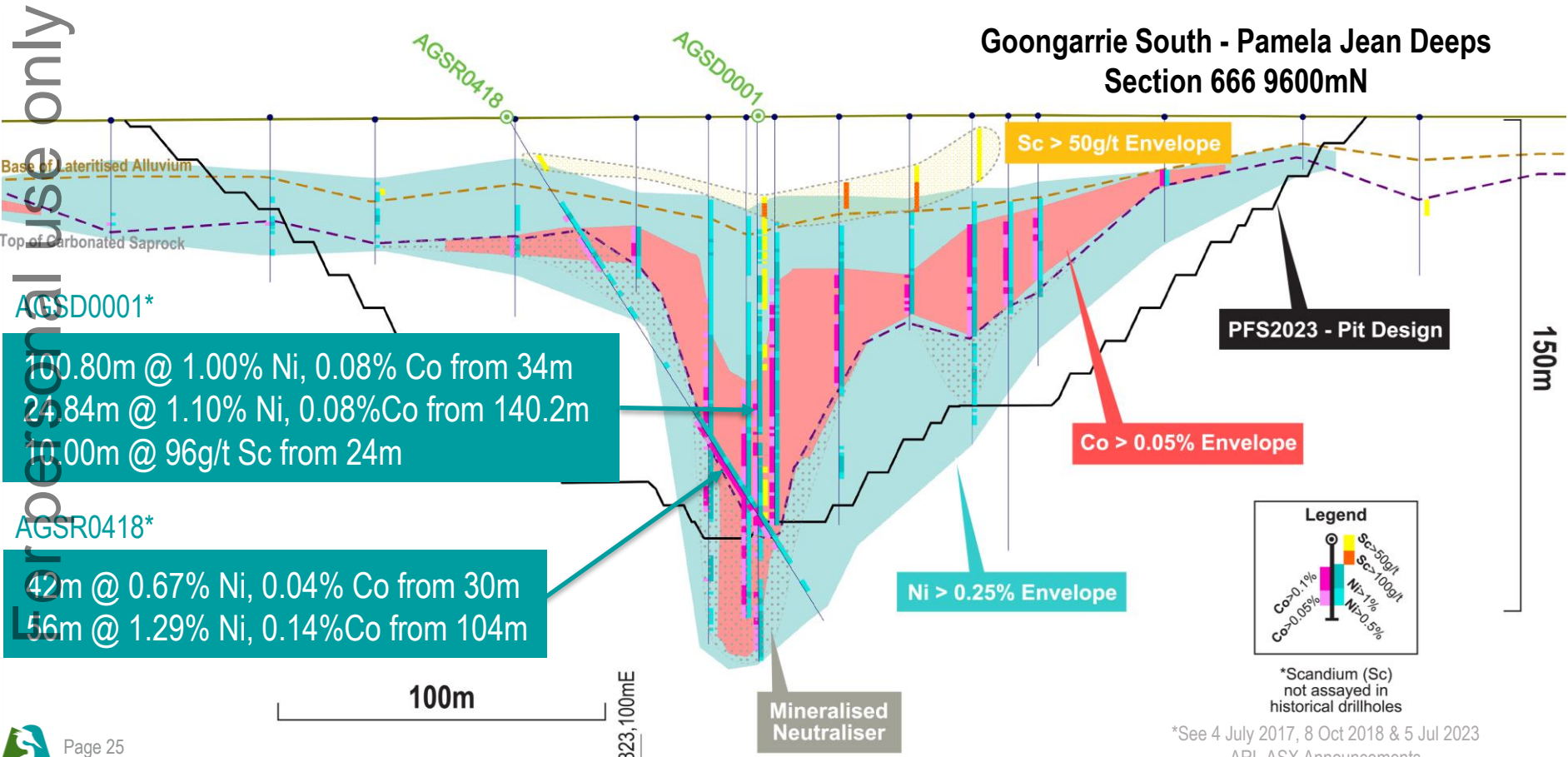
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# KNP Goongarrie Hub – Shallow, Thick, High-Grade Nickel

## Goongarrie South - Pamela Jean Deeps Section 666 9600mN



AGSD0001\*

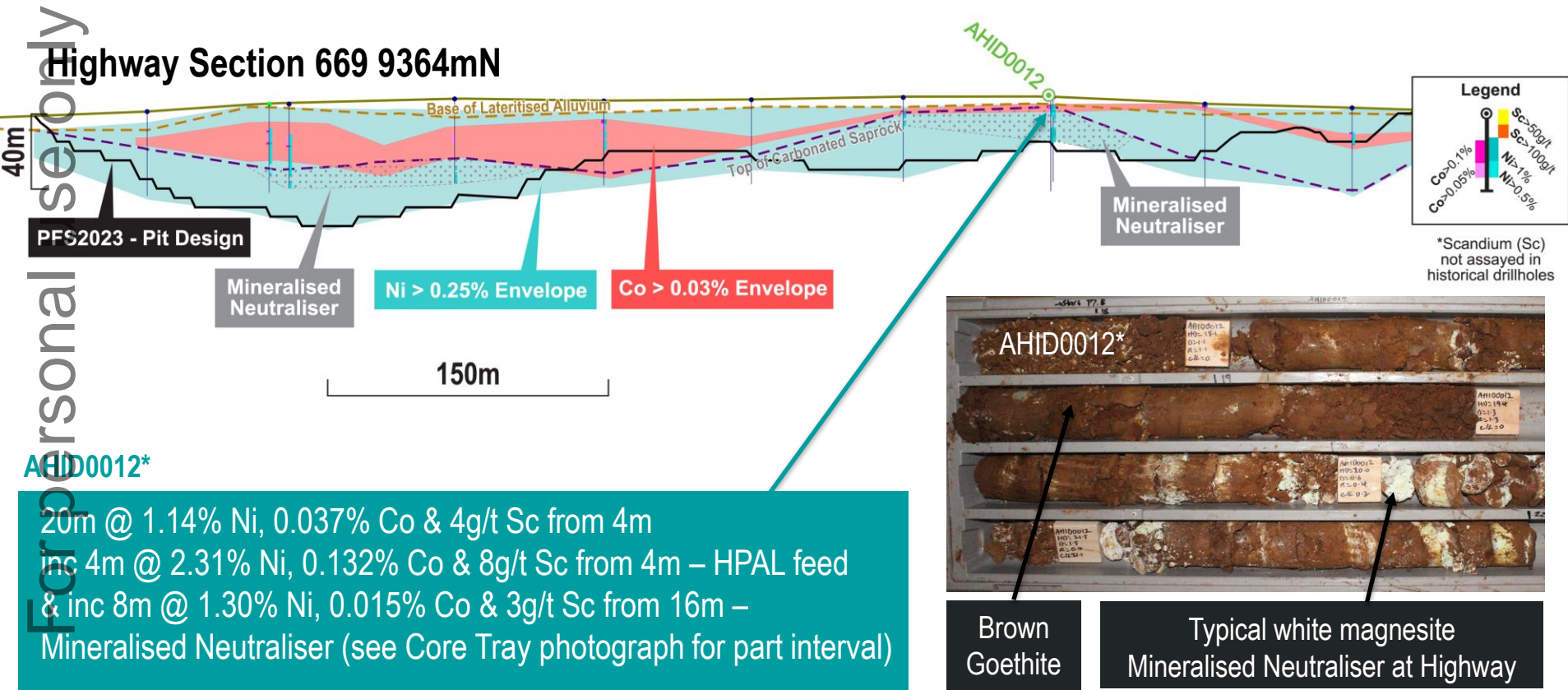
100.80m @ 1.00% Ni, 0.08% Co from 34m  
 24.84m @ 1.10% Ni, 0.08% Co from 140.2m  
 10.00m @ 96g/t Sc from 24m

AGSR0418\*

42m @ 0.67% Ni, 0.04% Co from 30m  
 56m @ 1.29% Ni, 0.14% Co from 104m

\*See 4 July 2017, 8 Oct 2018 & 5 Jul 2023  
 ARL ASX Announcements

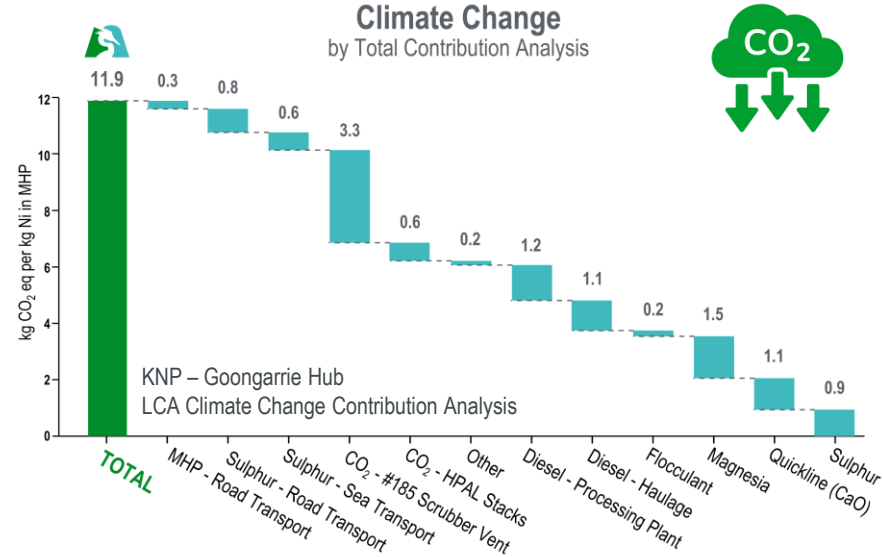
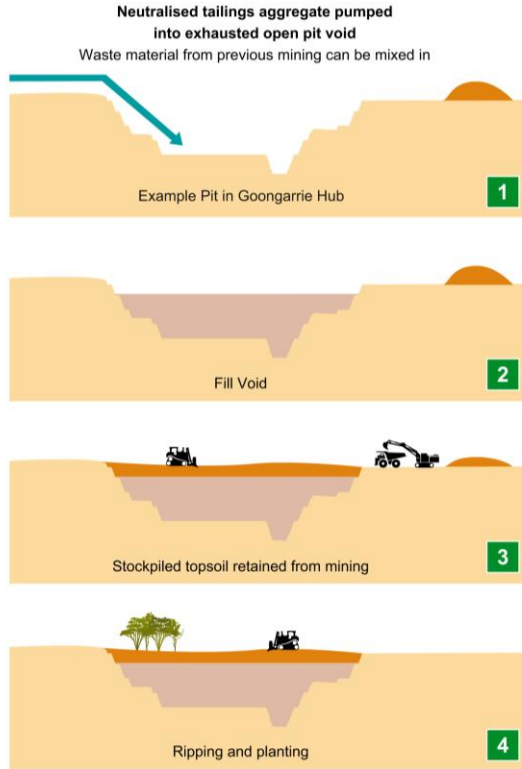
# KNP Goongarrie Hub – Mineralised Neutraliser in Highway Ore



# ESG Credentials Strengthened During PFS

use only

In-pit tailings disposal<sup>1</sup> **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 CO<sub>2</sub> eq. per kg nickel in MHP based on Ardea's Scope 1, 2 and upstream Scope 3 emissions<sup>1</sup>. **This compares favourably to the global average of ~13.0 kg CO<sub>2</sub> eq. per kg nickel produced.**

1. See 5 July 2023 ARL PFS ASX Announcement

# Ardea Exploration Pipeline Upside

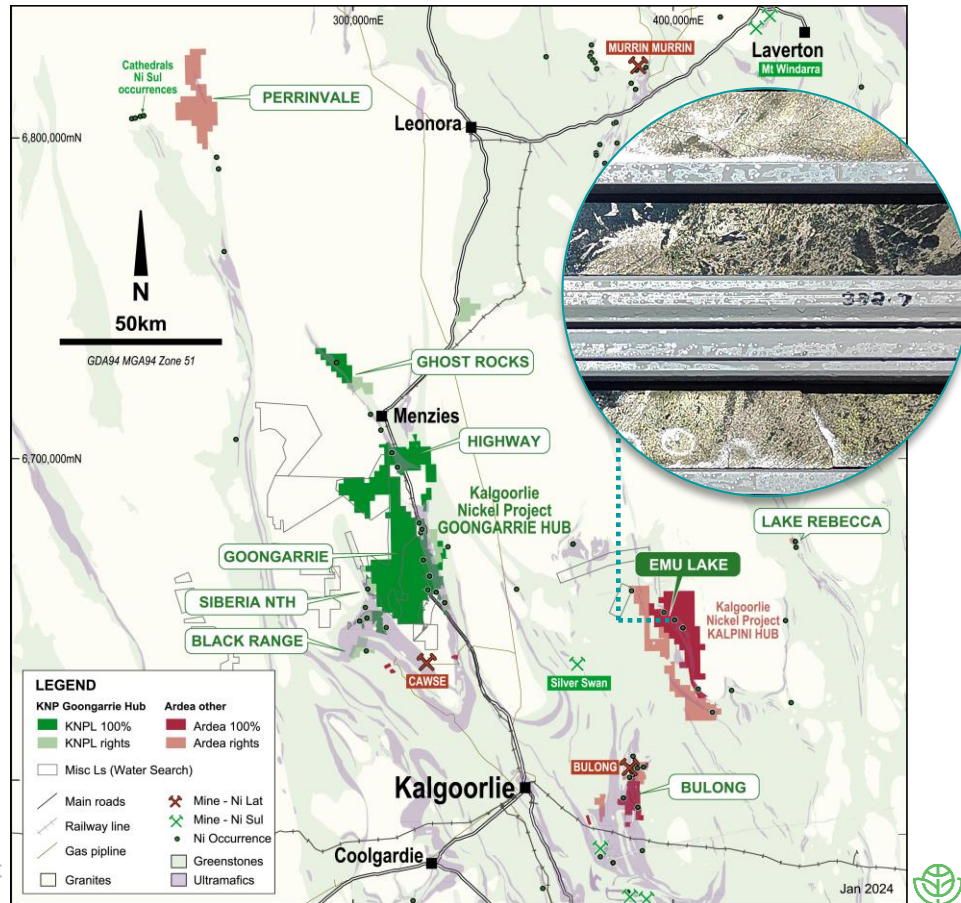
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Ardea controls **~3,500km<sup>2</sup> of tenure in the Eastern Goldfields of WA** with unrivalled **Battery and Critical Mineral** exploration potential

**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 strike<sup>1</sup>

**Scandium and Rare Earth Elements (REE)** identified at Ardea's **KNP Kalpini<sup>2</sup>** tenure

Ardea retain 100% ownership of non-Goongarrie Hub KNP projects (where MRE total 2Mt contained Nickel<sup>3</sup>) providing an internal pipeline for future growth of laterite resources and other commodities



1. See 14 Jan 2022 ARL ASX Announcement
2. See 14 Mar 2022 ARL ASX Announcement
3. See full MRE tables in Appendix 2 and 30 June 2023 ARL ASX Announcement

