A globally significant source of nickel-cobalt and scandium in Western Australia

Ardea Resources

121 Mining Investment EMEA

25 - 27 May 2021

A Sustainable and Ethical Source of Nickel and Critical Minerals from the Kalgoorlie Nickel Project, Western Australia

For personal use only

Disclaimer

For personal use only

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), the Goongarrie Nickel Cobalt Project Pre-Feasibility Study (dated 28 March 2018) the Goongarrie Expansion Study (24 July 2018), Goongarrie Pilot Plant trial produces battery grade crystals (31 October 2018), Goongarrie Nickel Cobalt Project Update (8 April 2019), Ardea Annual Report 2019 (24 October 2019), Ardea Quarterly Operations Report, for the quarter ended 30 September 2019 (31 October 2019), Ardea Quarterly Operations Report, for the quarter ended 31 December 2019 (17 January 2020) Ardea Quarterly Operations Report, for the quarter ended 31 March 2020 (9 April 2020), Maiden Resource for Big Four Gold Project, WA (14 May 2020), Significant gold exploration results from new target at Goongarrie South (25 June 2020), Follow-up RC drilling commences at the Aphrodite North gold target (10 July 2020), Quarterly Activities Report - June 2020 (23 July 2020), CSIRO research commences on gold behaviour within GNCP (12 August 2020), Significant gold in first RC drilling at Aphrodite North (13 August 2020), Gold Exploration Update (20 August 2020), and Ardea BTZ gold exploration success at Lady Charlotte (24 August 2020), Successful A$3.5M Capital Raising to support Gold Work Programs, SPP to follow (18 September 2020), Nickel Sulphide Targets within the Ardea Tenement Portfolio including KNP (30 September 2020), Quarterly Activities Report - September 2020 (27 October 2020), “Lily Albany” gold discovery confirmed by RC drilling at Aphrodite North (29 October 2020), High-grade, shallow gold discovery at Zeus (9 November 2020), Quarterly Activities Report - December 2020 (21 January 2021), GNCP High Grade Resource - 60 million tonnes at 1.0% nickel (15 February 2021), Quarterly Activities Report - March 2021 (21 April 2021), Basal contact nickel sulphide intersected at Ardea’s Emu Lake (27 April 2021).

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.

Neither Ardea nor its representatives make any representation, warranty or guarantee of any kind, express or implied, as to the accuracy, completeness or reasonableness of the information contained herein or any other written or oral communication transmitted or made available to any person receiving this presentation. To the maximum extent permitted by law, Ardea and representatives expressly disclaim any and all liability based on or arising from, in whole or in part, such information, or any errors or omissions.

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 and Expansion 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.

Ardea Value Plus

For personal use only

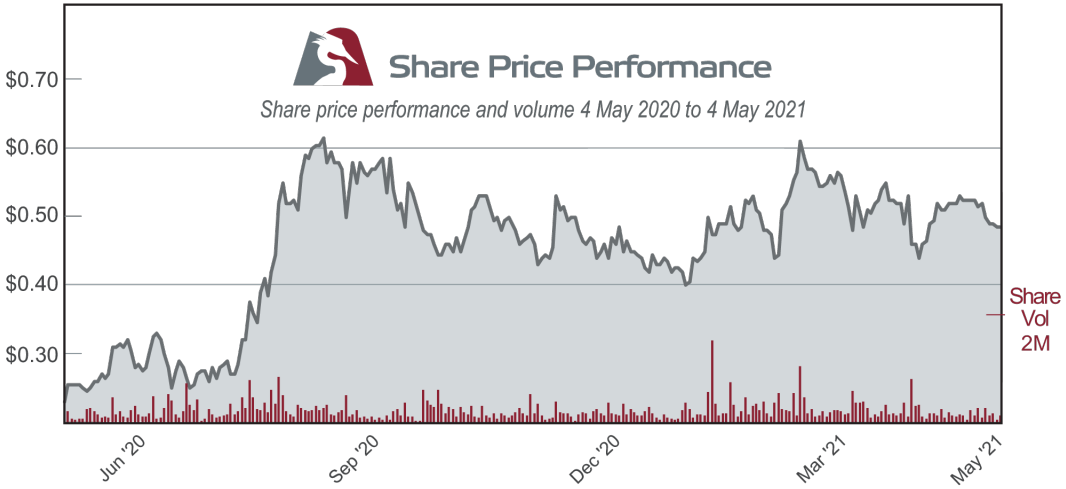
- Globally significant Nickel-Cobalt-Scandium resource and Critical Mineral Rare Earths
- Essential for new age battery technologies to meet the needs of society which demand sustainable and ethical mineral supply for a low carbon future
- Ardea perfectly placed to meet these needs with the Kalgoorlie Nickel Project, including direct rail and other transport infrastructure to the Kwinana Battery Hub (KBH)
- Definitive Feasibility Studies (DFS) accelerated with bench-scale metallurgy and hydrology extraction licenses
- Ardea working with industry R&D leaders such as FBICRC and CSIRO
- Pipeline of Nickel and Critical Mineral exploration opportunities with field work underway
- Large, strategic 100% owned >4,000km^2 greenstone land holding on rapid rehabilitating temperate woodland in the World's premier mine operating jurisdiction, Western Australia

Corporate Summary

For personal use only

Capital Structure, as at May 2021	
ASX Code	ARL
Shares on Issue	127,670,582
Share Price	$0.50
52 week high / low	$0.63 / $0.23
Cash (as at 31 March 2021)	$8.3 million
Market Capitalisation	$64 million
Largest Shareholder	~10% equity
Top 40 Shareholders	~60% equity

Board and Executive Management Team	
Mathew Longworth	Non-Executive Chair
Andrew Penkethman	Managing Director and Chief Executive Officer
Ian Buchhorn	Executive Director
Sam Middlemas	Company Secretary and Chief Financial Officer
Dr Matt Painter	General Manager Exploration

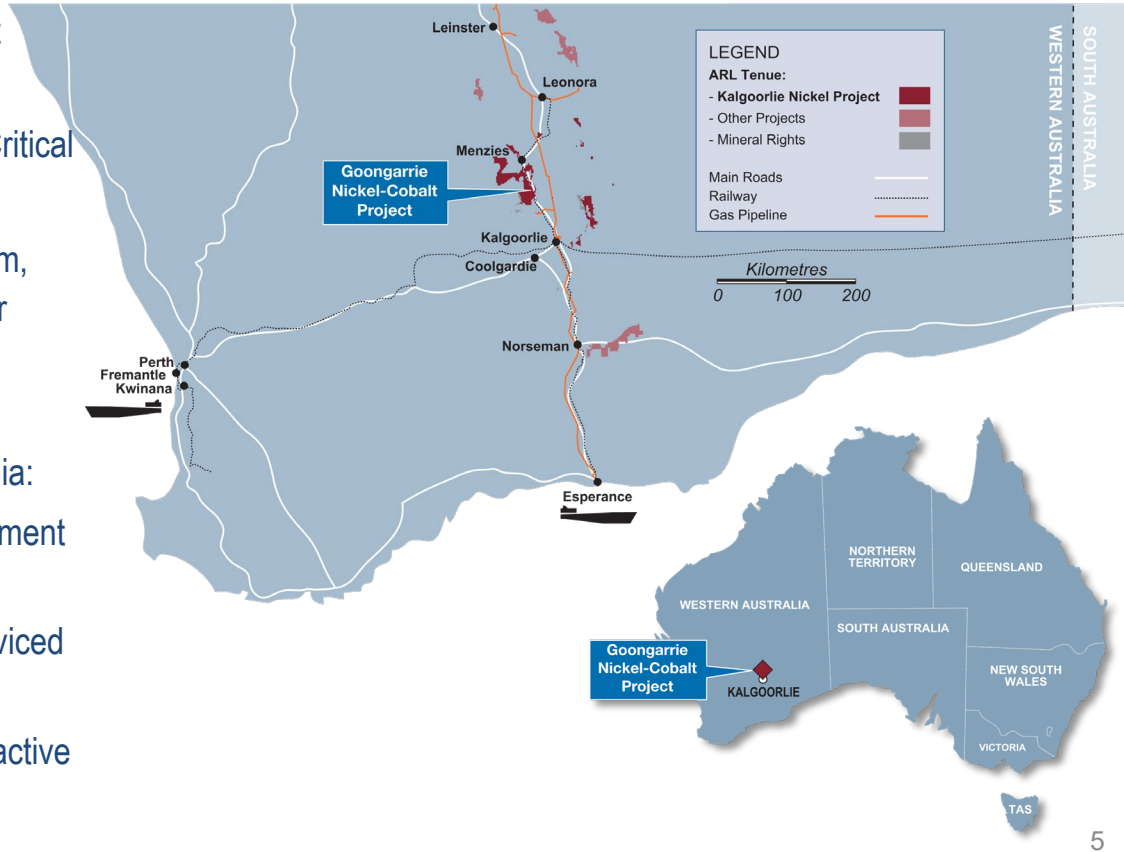


Focus on development of the KNP for the battery revolution, while maximising shareholder value through concurrent, complementary Critical Mineral and nickel sulphide exploration plus gold in-specie spin-out

Prime Location and Jurisdiction

For personal use only

- WA is the premier global destination for development of minerals operations:
  - Federal associations of Ardea include MMI, Critical Minerals Prospectus, FBICRC and CSIRO
  - State association Department of Jobs, Tourism, Science and Innovation, WA's lead agency for economic development
- City of Kalgoorlie-Boulder is the prime resource development and operating destination within Australia:
  - Very strong mining support from Local Government and community
  - Multitude of world-class mining operations serviced from the City
  - Ardea maintains a local operations office and active stake holder engagement



Ardea with its flagship KNP and subset GNCP Ni-Co-Sc resource, is poised for sustainable and ethical supply of Critical Minerals for a low carbon future

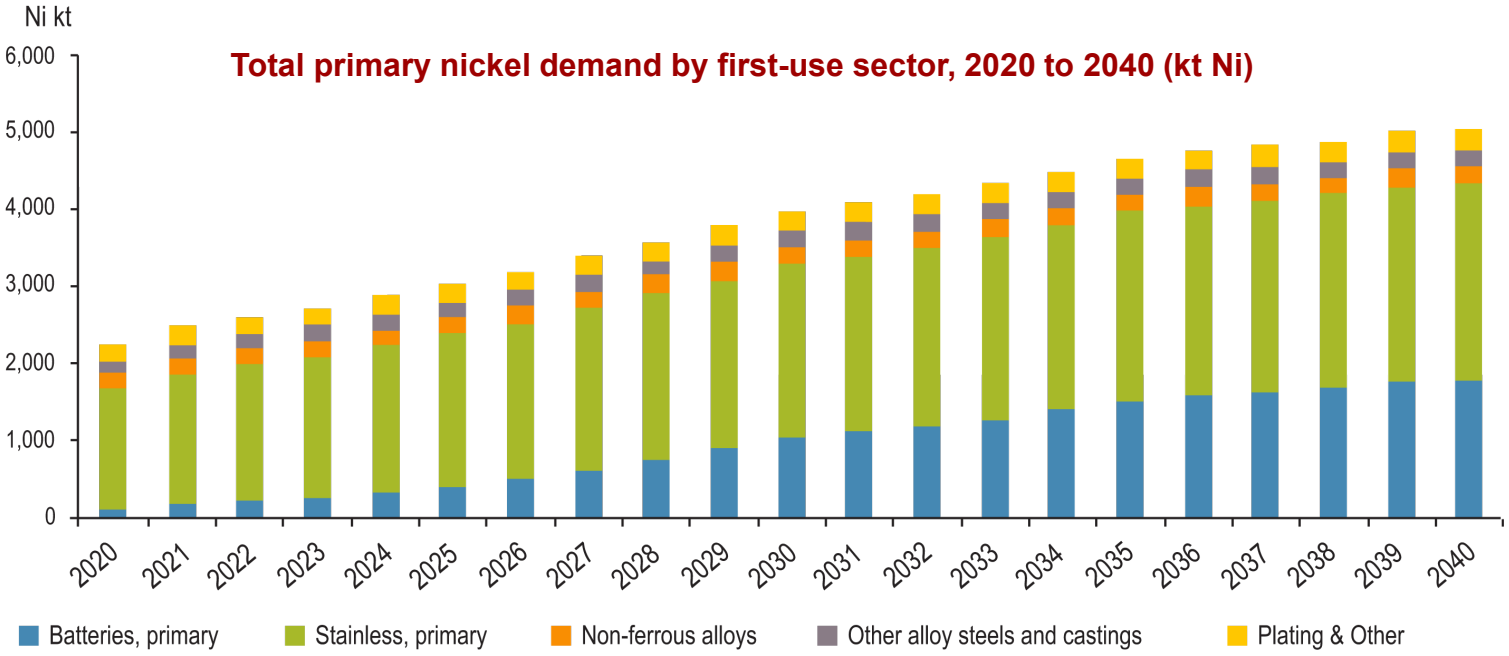
For personal use only

Ardea Resources

Ardea pilot plant nickel sulphate crystal production, September 2018

Nickel and the Inevitable Rise in Demand

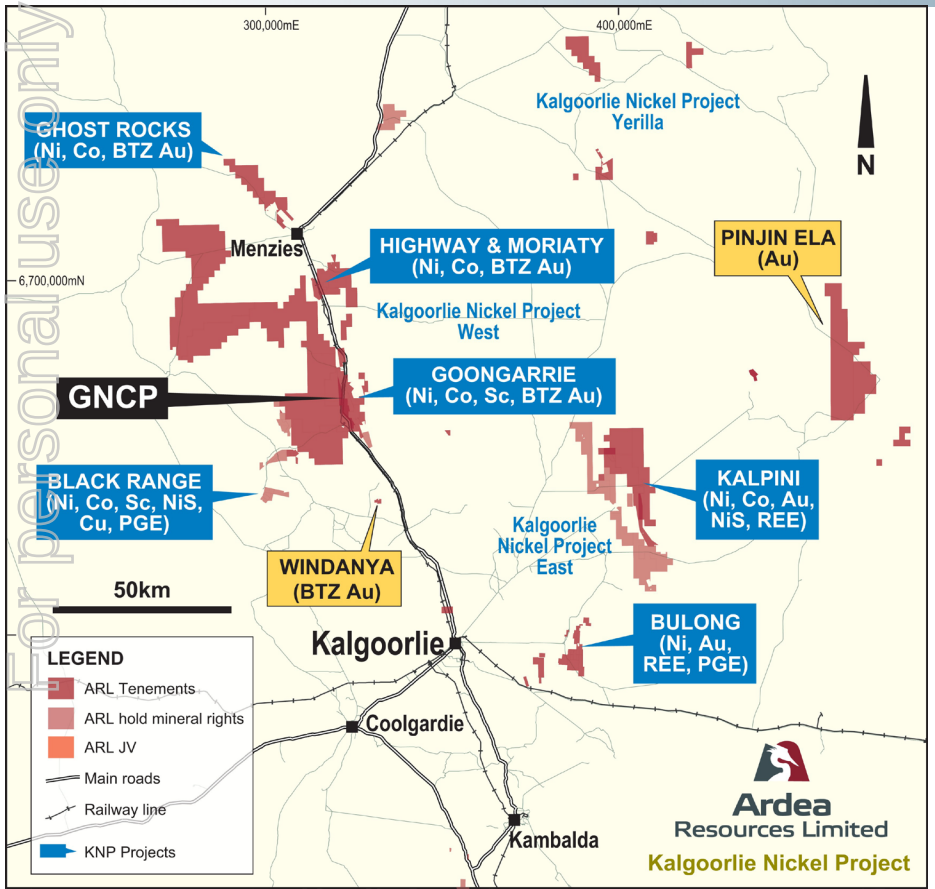
For personal use only



Source: Roskill, 2020

- **KNP = 5.8 Million tonnes contained nickel**
- **Beyond 2040 almost one KNP will be needed each year for world nickel supply**

The Kalgoorlie Nickel Project



For personal use only

Kalgoorlie Nickel Project (KNP) Mineral Resource

826Mt at 0.7% Ni and 0.046% Co*

5.8 Million tonnes contained **Nickel**

384,000 tonnes contained **Cobalt**

Goongarrie Nickel Cobalt Project (GNCP) Mineral Resource

259Mt at 0.7% Ni and 0.046% Co*

and a maiden scandium component of

74Mt at 35ppm Sc

1.8 Million tonnes contained **Nickel**

119,200 tonnes contained **Cobalt**

2,590 tonnes contained Scandium

GNCP High grade component

60Mt at 1.0% Ni and 0.074% Co

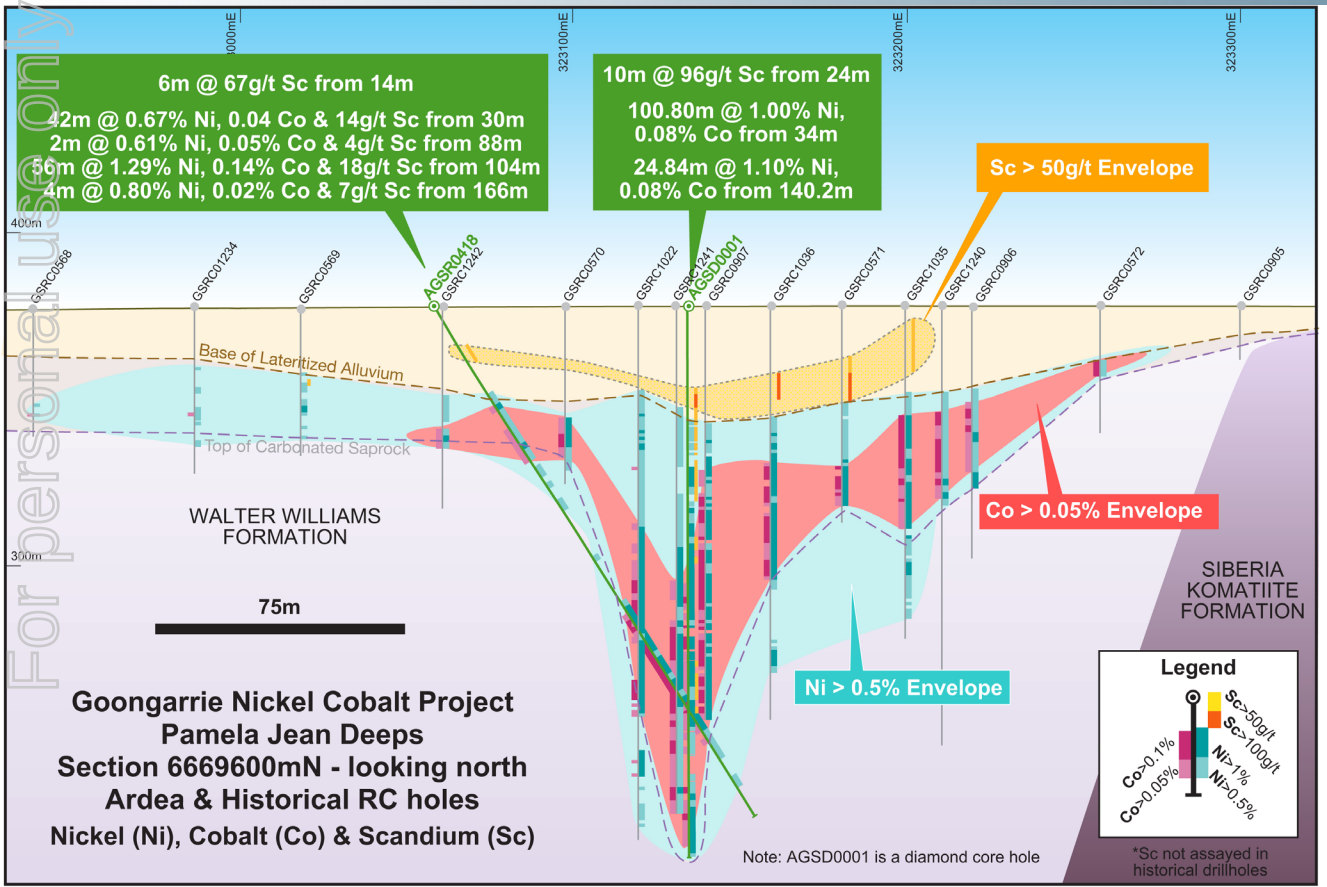
595kt contained **Nickel**

44kt contained **Cobalt**

Globally significant nickel and cobalt Mineral Resource

* See Appendix for resource breakdown and ASX release 15 February 2021.

Optimum Resource Scale

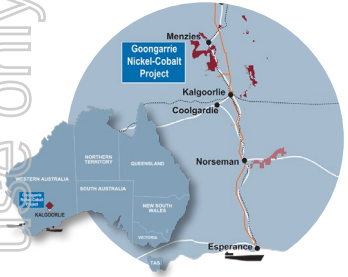


- GNCP resource update based on high grade mining strategy **(>1% nickel)**
- With 5.8Mt contained nickel, easily accommodated within the KNP starting with the GNCP
  - Capability for >100 year potential supply of Ni, Co, Sc resource
- GNCP has produced on-specification MSP and sulphates from 2018 pilot plant and can produce MHP or PCAM to suit needs of Strategic Partner
- Capability for >100 year KNP operations as easy, open-pit mining for all resources, followed by backfill and rehabilitation

For personal use only

Goongarrie Ticking all the Boxes

For personal use only

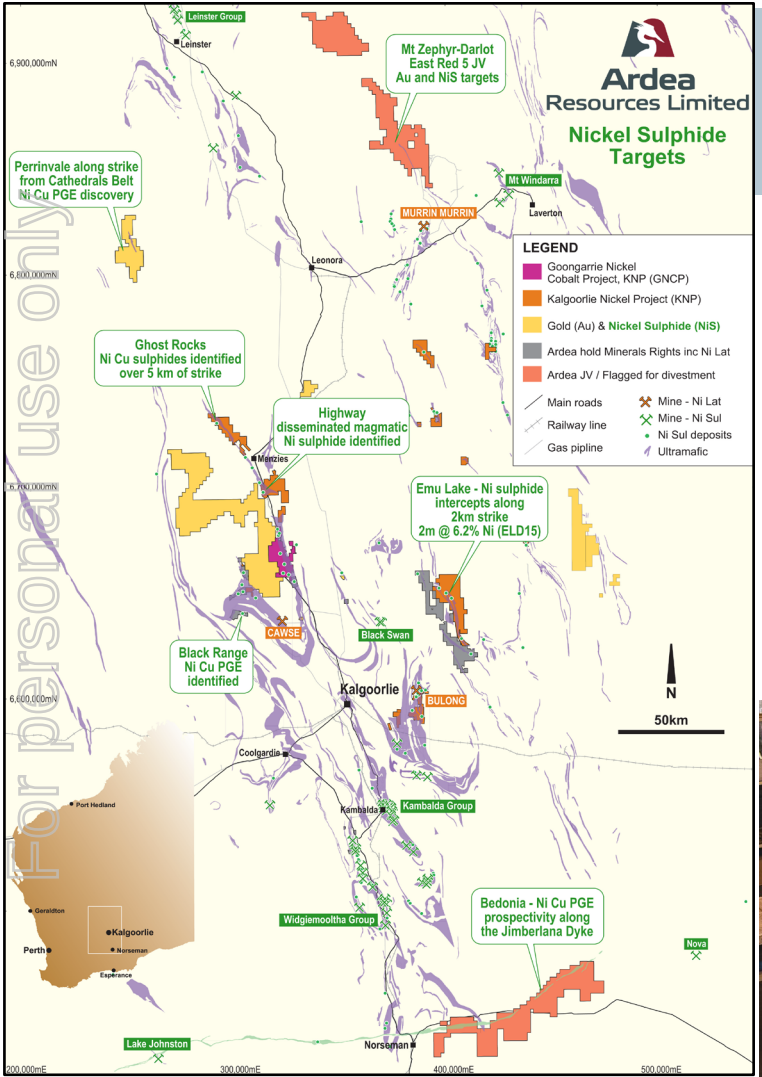


- ✔ Resources with direct infrastructure links to the Kwinana Battery Hub
- ✔ WA location ensures sustainable and ethical supply

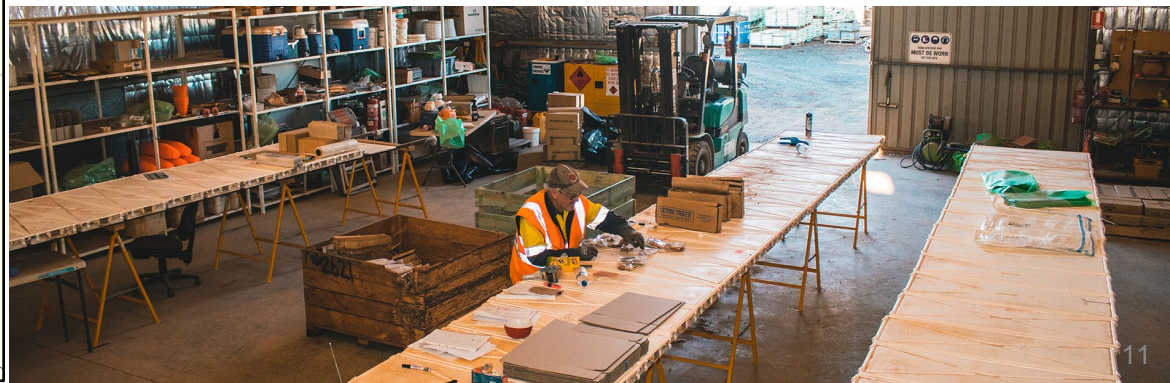
- ✔ Premium goethite ore type (no drying or screening required)
- ✔ Ni:Co:Mn ratio well suited to NCM811 battery technology

- ✔ End product specification will cater to our customer needs
- ✔ All World Ni resources need to be developed to ensure sufficient supply

Regional Location – Nickel Sulphide Projects



- **Highly prospective for nickel sulphide mineralisation**
- Ardea's KNP tenure is one of the largest land holdings over ultramafic stratigraphy in Australia
- Archaean Eastern Goldfields Province – prolific ultramafic lava flows hosting numerous nickel sulphide deposits
- Multiple compelling nickel sulphide targets defined ranging from Kambalda style komatiites to Julimar style layered mafic/ultramafic intrusive complexes
- Exploration programs underway including EM and IP surveys - Drilling to follow

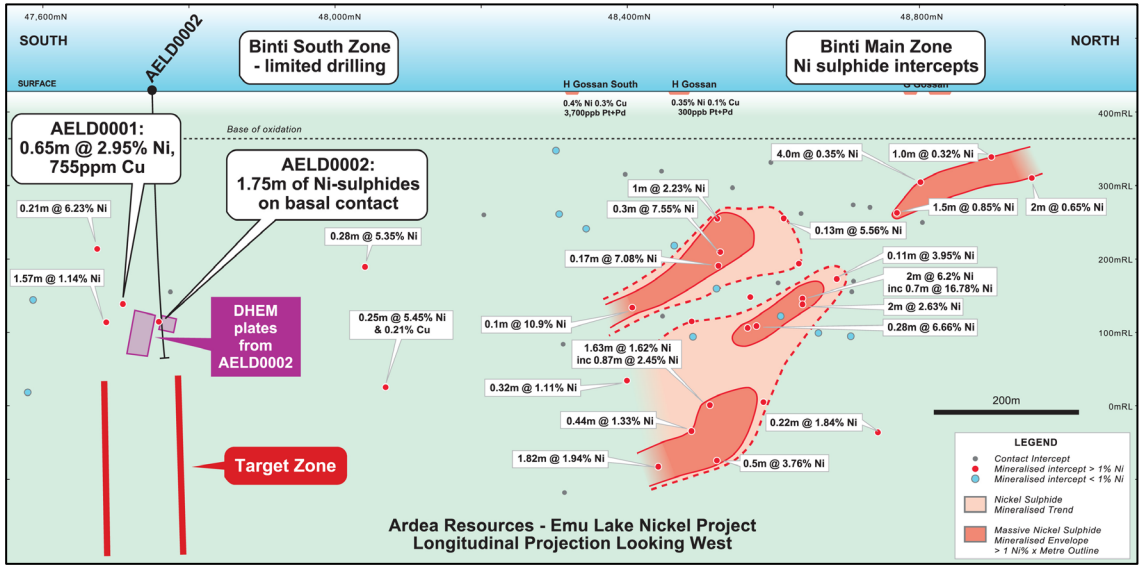


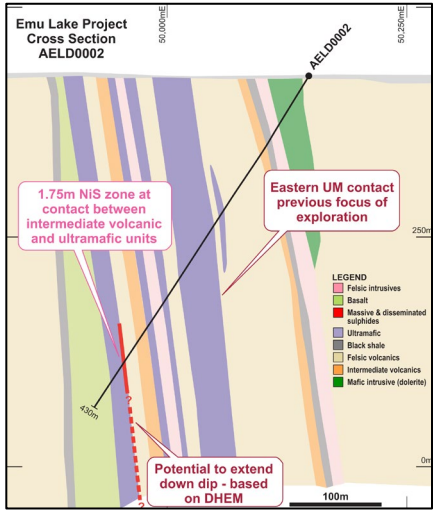
For personal use only

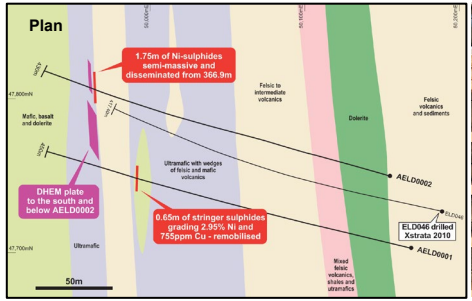
Emu Lake Project – Binti Nickel Sulphide

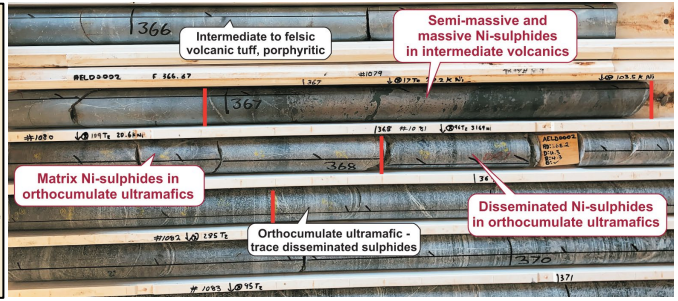
For personal use only

- 70km north-east of Kalgoorlie on a granted mining lease
- Drilling of the strong DHEM conductor has intersected a 1.75m zone of basal contact nickel sulphide
- AELD0002, intersected 0.65m of **visible massive** and **semi-massive nickel sulphide** and 1.1m of overlying matrix and disseminated nickel sulphide
- This represents a **new mineralised** basal-contact position
- A strong response DHEM generated – potential for a Silver Swan / Kambalda-style nickel sulphide channel
- **Under explored ultramafic**





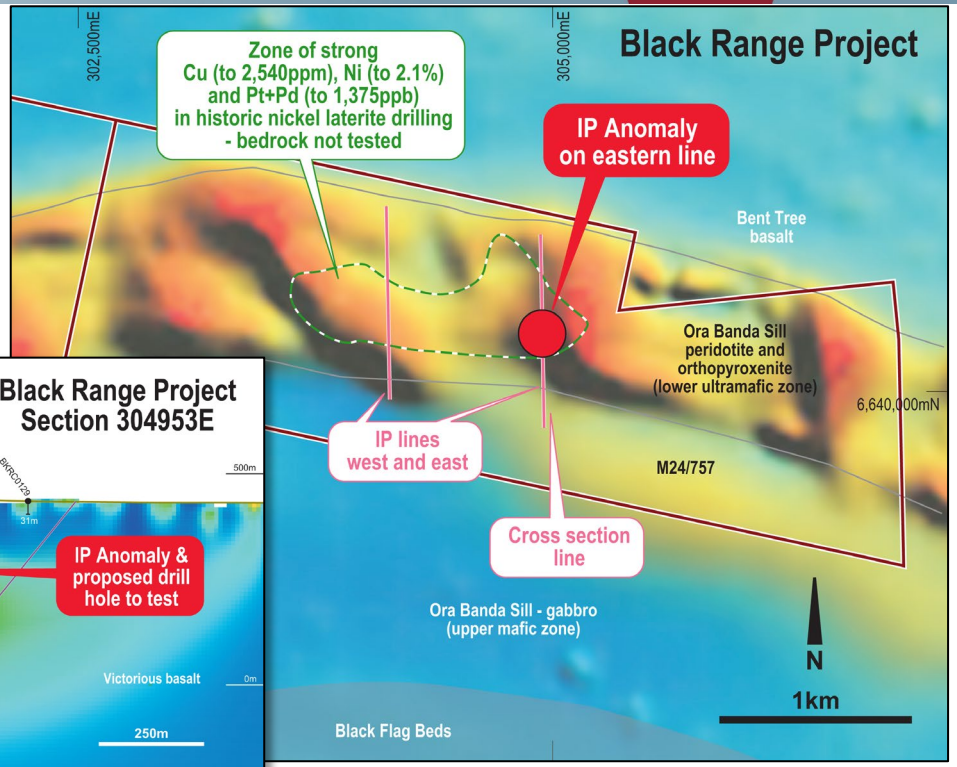


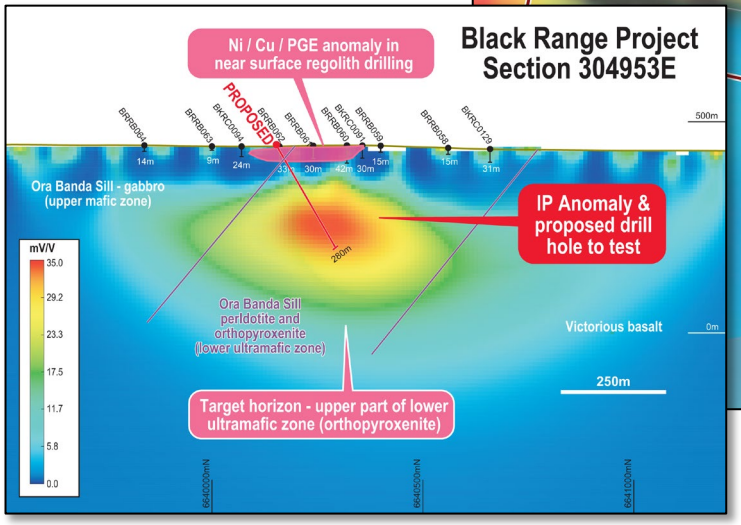


Black Range Project – Ni Cu PGE

For personal use only

- 65km north-west of Kalgoorlie on a granted mining lease
- Strongly anomalous Ni, Cu and PGEs within the regolith profile from historic nickel laterite drilling
- Within the differentiated Ora Banda Sill close to contact between the lower ultramafic zone and the upper mafic-gabbro zone
- Cu to 2,540ppm, Ni to 2.1% and Pt + Pd to 1.4g/t in historic drill sampling
- Induced Polarisation (IP) targeting magmatic base and precious metals in a layered mafic-ultramafic complex have returned a strong chargeability anomaly
- RC drilling program has been designed and approved to test this target





Gold Spin-Out

For personal use only

Kalgoorlie Gold Mining

- Spin-out of projects and gold-rights into Kalgoorlie Gold Mining (KalGold), so that Ardea can better focus on flag-ship Kalgoorlie Nickel Project DFS
- All independent experts well advanced with discussions in train for Lead Manager
- EGM and shareholder support required
- Planned in-specie share distribution
- Target listing on ASX December Quarter 2021

Investment Summary

Ardea's KNP offers unrivalled nickel-cobalt-scandium scale optionality (**5.8Mt of nickel and 384kt of cobalt**), by 2040 approximately one KNP will be required every year to meet projected nickel demand!

Globally significant nickel-cobalt-scandium resource in an **infrastructure-rich and stable jurisdiction,** provides ability to produce **sustainable** and **ethical** minerals from multiple processing hubs for the rapidly expanding Critical Minerals/LIB sector, with feasibility programs current

100% off-take is available, with Company strongly leveraged to increasing World nickel and cobalt demand

Highly prospective landholding in the **Eastern Goldfields** of **Western Australia – confirmed with recent Ardea nickel sulphide and gold discoveries - KalGold gold spin-out to simplify portfolio**

WA based Team with track record of exploration, development and production success

Well funded to maintain momentum - Upcoming news flow to include **feasibility updates**, **nickel sulphide exploration**, Highway and KNP **nickel-cobalt-scandium resource updates, KalGold spin-out**

For personal use only

Thank you

For further information please visit: **www.ardearesources.com.au**
or contact: Andrew Penkethman, Managing Director & CEO
P: +61 8 6244 5136 E: ardea@ardearesources.com.au

Ardea Resources

For personal use only

A globally significant source of nickel-cobalt and scandium in Western Australia

Ardea Resources

For personal use only

For further information regarding Ardea, please visit www.ardearesources.com.au

APPENDICES

Optimum location for ensuring sustainable and ethical mineral supply

- Large contiguous KNP/GNCP land holding allows unimpeded site planning to minimise ultimate site footprint
- Open Mediterranean woodland highly amenable to low-impact development and rehabilitation
- Arid to temperate environment, facilitates well managed tailings disposal
  - Rehabilitation procedures well established over last four decades in Kalgoorlie open pit gold sector
  - No ocean submarine tailings disposal
  - No valley-fill tailings dams
  - No active seismicity issues
- No conflicting land use demands
  - KNP purely a mining jurisdiction
  - No competing food production activity (as in Eastern Australia laterite districts)
- Low carbon future
  - KNP HPAL plant steam, heating and power generated through burning elemental sulphur for sulphuric acid feedstock
  - KNP HPAL neutraliser includes Ni-enriched non-carbonate options
  - Waste landform regeneration facilitates significant agroforestry “carbon farming” in the KNP

For personal use only

Ardea Resources

A High-Quality Nickel and Cobalt Project

For personal use only

Outstanding results delivered from PFS* and Expansion Studies:

	1.0Mtpa	1.5Mtpa	2.25Mtpa
Status	PFS	PFS	**ES**
No. Trains	1	1	**1**
Pre Tax NPV_8	US$ 1.13 billion	US$ 1.52 billion	**US$ 2.4 billion**
Pre Tax IRR	29 %	29 %	**31%**
CAPEX	US$ 472 million	US$ 588 million	**US$918 million**
C1 cash cost	US$ 0.42 / lb	US$ 0.45 / lb	**US$ (0.34) / lb**
Payback	5.3 years	5.6 years	**5.1 years**
Cobalt sulphate	5,500tpa	6,900tpa	**10,000tpa**
Nickel sulphate	41,500tpa	55,300tpa	**81,000tpa**

- ✓ PFS of 1Mtpa and 1.5Mtpa base case over a 25-year mine life completed
- ✓ Expansion study of 2.25Mtpa with a 25-year mine life completed
- ✓ 94.5% nickel and 95.5% cobalt recovery – life of mine
- ✓ Pre-cobalt credit C1 costs in line with current worldwide operators
- ✓ High Pressure Acid Leach (HPAL) 5th generation plant is a proven design, successfully operated in other laterite projects globally
- ✓ 2.25Mtpa case based on only 26% of Goongarrie Resource
- ✓ Scandium by-product credit not factored in, so offers additional up-side

The information shown on this slide has been previously released on the ASX platform by Ardea in ASX releases, *Goongarrie Nickel Cobalt Project, PFS study, 28 March 2018 & +Goongarrie Expansion Study, 24 July 2018. All the material assumptions underpinning the forecast financial information derived from a production target, in the initial public report referred to in rule 5.17 continue to apply and have not materially changed.

KNP Resource Breakdown

For personal use only

Kalgoorlie Nickel Project nickel-cobalt JORC Code (2012) Mineral Resource (ASX release 15 February 2021).

Camp	Prospect	Resource Category	Size (Mt)	Ni (%)	Co (%)	Contained Metal Ni (kt)	Contained Metal Co (kt)
KNP TOTAL		Measured	22	0.94	0.079	207	17
		Indicated	339	0.72	0.048	2,446	163
		Inferred	465	0.68	0.044	3,165	203
	GRAND TOTAL	***Combined***	***826***	***0.70***	***0.046***	***5,817***	***384***

Note: 0.5% nickel cutoff grade used to report resources. Note figures are rounded to reflect degree of certainty and may not tally.
The information shown on this slide has been previously released on the ASX platform by Ardea in ASX release 15 February 2021.

In accordance with the Australian Securities Exchange Limited Listing Rules Appendix 5A:

The information in this report that relates to KNP Exploration Results is based on information originally compiled by previous full time employees of Heron Resources Limited and or Vale Inco. The Exploration Results and data collection processes have been reviewed, verified and re-interpreted by Mr Ian Buchhorn who is a Member of the Australasian Institute of Mining and Metallurgy and currently an executive director of Ardea Resources Limited. Mr Buchhorn has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the exploration activities 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'. Mr Buchhorn consents to the inclusion in this report of the matters based on his information in the form and context that it appears.

The information in this report that relates to Mineral Resources for the Goongarrie Hill, Goongarrie South, Big Four and Scotia Dam nickel-cobalt deposits that comprise the Goongarrie Nickel Cobalt Project is based on information compiled by Mr James Ridley who is a Member of the Australasian Institute of Mining and Metallurgy, a full time employee of Ardea Resources and has sufficient experience relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is 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 Ridley consents to the inclusion in the report of the matters based on this information in the form and context in which it appears.

Goongarrie Nickel Cobalt Resources

For personal use only

Summary of Mineral Resource from the Goongarrie Nickel Cobalt Project area, based on a 0.8% Ni cut-off grade, comprising resources at Goongarrie Hill, Goongarrie South, Big Four and Scotia Dam (ASX release 15 February 2021).

Deposit	Resource Category	Tonnes (Mt)	Ni %	Co %	Contained Metal Ni (kt)	Contained Metal Co (kt)	Sc Resources Mt	Sc Resources Sc ppm
Goongarrie Hill	Indicated	5.3	0.92	0.050	49	2.6	2.4	17
	Inferred	1.9	0.92	0.034	17	0.6	0.4	16
	Subtotal	7.2	0.92	0.046	66	3.3	2.8	17
Goongarrie South	Measured	11.0	1.13	0.106	125	11.6	11.0	39
	Indicated	21.1	0.99	0.071	208	15.0	15.5	25
	Inferred	1.2	0.92	0.043	11	0.5	0.5	25
	Subtotal	33.3	1.03	0.081	344	27.1	27.0	31
Big Four	Indicated	12.1	0.97	0.068	118	8.3	8.9	27
	Inferred	2.7	0.94	0.062	25	1.7	0.5	27
	Subtotal	14.7	0.97	0.067	143	9.9	9.4	27
Scotia Dam	Indicated	2.9	0.98	0.108	29	3.2	2.9	28
	Inferred	1.4	1.02	0.057	14	0.8	0.0	26
	Subtotal	4.3	0.99	0.091	43	4.0	2.9	28
GNCP Total	Measured	11.0	1.13	0.106	125	11.6	11.0	39
	Indicated	41.5	0.97	0.070	404	29.0	29.7	25
	Inferred	7.1	0.95	0.051	67	3.6	1.4	23
	Grand Total	**59.6**	**1.00**	**0.074**	**595**	**44.3**	**42.2**	**29**

Note: GNCP nickel, cobalt and scandium Mineral Resources based on a 0.8% Ni cut-off grade
Note figures are rounded to reflect degree of certainty and may not tally.

Goongarrie Nickel Cobalt Resources

For personal use only

Summary of total Mineral Resource from the Goongarrie Nickel Cobalt Project area, based on a 0.5% Ni cut-off grade, comprising resources at Goongarrie Hill, Goongarrie South, Big Four and Scotia Dam (ASX release 15 February 2021).

Deposit	Resource Category	Tonnes (Mt)	Ni %	Co %	Contained Metal Ni (kt)	Contained Metal Co (kt)	Sc Resources Mt	Sc Resources Sc ppm
Goongarrie Hill	Indicated	40	0.65	0.037	260	14.7	10.5	16
	Inferred	29	0.60	0.025	178	7.3	2.0	16
	Subtotal	69	0.63	0.032	438	21.9	12.5	16
Goongarrie South	Measured	18	0.94	0.085	172	15.4	18.2	40
	Indicated	82	0.71	0.049	587	40.2	53.1	23
	Inferred	10	0.64	0.033	61	3.1	5.5	24
	Subtotal	110	0.75	0.053	820	58.7	76.8	27
Big Four	Indicated	49	0.71	0.047	345	22.9	31.9	24
	Inferred	14	0.68	0.043	95	6.1	2.9	24
	Subtotal	63	0.70	0.046	440	28.9	34.8	24
Scotia Dam	Indicated	12	0.71	0.065	82	7.4	11.2	25
	Inferred	5	0.72	0.043	37	2.2	0.6	22
	Subtotal	17	0.72	0.058	118	9.6	11.7	25
GNCP Total	Measured	18	0.94	0.085	172	15.4	18.2	40
	Indicated	182	0.70	0.047	1,274	85.1	106.6	23
	Inferred	58	0.64	0.032	371	18.6	11.0	23
	Grand Total	**259**	**0.70**	**0.046**	**1,817**	**119.2**	**135.8**	**25**

Note: GNCP nickel, cobalt and scandium Mineral Resources based on a 0.5% Ni cut-off grade.
Note figures are rounded to reflect degree of certainty and may not tally.