

Ardea's Kalgoorlie nickel project has now been recognised across all tiers of Australian government

Award opens doors for Ardea

Ardea Resources Ltd's quest to land a strategic partner for the Kalgoorlie nickel project (KNP) has received a major boost following the award of major project status by the Federal Government.

It means the KNP is now recognised across all tiers of Australian government, having previously been included in the critical minerals prospectus compiled by Austrade and Geoscience Australia, as well as being independently ranked by the Geological Survey of Western Australia as the State's – and thus the country's – largest nickel-cobalt resource.

Ardea has essentially been on the hunt for a strategic partner to contribute towards development of the KNP since listing in early 2017, but it is only recently that search has intensified as battery makers and car manufacturers scramble for new supplies of nickel and cobalt.

Speaking to **Paydirt** last month, Ardea managing director Andrew Penkethman said there was a growing realisation that very few projects were capable of providing immediate "secure, ethical and sustainable" supply of critical raw minerals.

"If you use lithium-ion battery manufacturers as an example, they're spending billions of dollars on rolling out gigafactories around the world but they've got to be able to secure that mineral supply," he said.

"With the KNP hosting the largest nickel-cobalt resource in the country, and because of our location here in Western Australia, we're uniquely placed to play a leading role because ethical and sustainable mineral supply is assured when you're in the best operating jurisdiction in the world.

"We've certainly seen a marked acceleration in engagement from potential strategic partners before the granting [of major project status] and even afterwards. Those who we were engaged with have already recognised that and see this as another big positive for the project.

"We're all aware of the moves around the world for supply chain security and diversification and as much independence as possible, so there's never been a more supportive environment to work with our key trading partners. And with that macro context in mind, there's never been a better time to see a globally significant project like the KNP fully funded and developed."

Despite surging interest from potential offtakers for a large slice of the 830mt @ 0.71% nickel and 0.046% cobalt resource at KNP, Ardea is in no rush to sign over the rights to the first buyer who puts an attractive offer on the table.

Penkethman said there had never been a more important time to get the offtake structure right.

"Everyone wants the offtake and a number of our peers, in my opinion, have simply given away their offtake, where there's been no risk at all to the offtaker," he said.

"We're acutely aware that with such a large project in the KNP, it's in our best interest to have a partner with the financial strength and industry insights to ensure the best outcome for project development. We've never had more interest in the project, there's a number of groups credibly active in our virtual data room, and I think it's just literally a matter of time that's needed to select a preferred partner on terms that are acceptable to both parties."

The emergence of KNP as one of the world's most in-demand projects has been reflected in Ardea's share price growth since the start of the year. At the time of print, the company's stock had soared to an all-time high of \$2.05/share, up more than 355% since the opening day of trade in January.

Penkethman said while Ardea had been flying under the radar in most investment circles – perhaps in part due to board and management having a preference for focusing on the tasks at hand – he was unsure how much longer that would remain the case, especially with the company now being rewarded for "doing what we said we would do".

"Again, a lot of our peers spend a lot more money than we do on marketing and promotion, and while I understand that's an important aspect of every business, you've got to have meaningful news flow, you've got to get that market acceptance and respect," Penkethman said.

"There's an element of slow and steady and getting that requisite reputation and people understanding that ethically you're doing the right thing, as opposed to having the flashy new thing that might be in favour for a short period of time but will crash and burn. We've all seen that with multiple companies before.

"We want to develop a project with a multi-decade mine life...so it's about doing everything the right way. More often than not, that takes time. We've seen other projects challenged through rushing and not considering the appropriate project development path.

"Quite simply, you've got to get it right.



Andrew Penkethman

You only get one chance at developing a globally significant project and making sure that succeeds.”

Internally, the Ardea team remains focused on completing a DFS for a 3.5 mtpa project at KNP, largely based around the high-grade Goongarrie Hub which hosts a resource of 78mt @ 1% nickel and 0.069% cobalt.

Current test work is focused on locking down the optimal flowsheet which now includes an atmospheric leach circuit.

“We see that as being a valuable addition to the project because you’ve got your hot slurry that comes out in the autoclave, so all the minerals have gone into solution, but then you have to neutralise that and we can use the heated acidic solution which comes out of the autoclave in our atmospheric leach circuit and treat the more magnesium-rich ores, neutralising the acid in the process, to produce additional nickel and cobalt credits,” Penkethman explained.

“Because we’ll need the acid plant on site for the high acid-consuming atmospheric leach circuit, we’ll be generating excess steam which will enable us to generate all of our own power and be completely off-grid, and that’s what will help ensure we’ve got industry-leading low carbon emissions.

“We’ll be completely off-grid, there’ll be no fossil fuels involved in powering our process plant and our mine site. We’re even looking at potentially being an energy exporter through that whole process. We think that would be an exceptional outcome from the addition of an atmospheric leach circuit.”

Two groundwater licences for the annual abstraction of 3.5GL of water resources

within the Goongarrie Hub mining leases were recently granted. Those licences have an initial 10-year term and are renewable.

Penkethman said the company was about 80% of the way through the full approvals process for the KNP, with a lake ecology study over Lake Goongarrie still to be completed.

“Ideally that will be done when we get a sufficient rainfall event, and we just simply haven’t had one,” he said. “We’ve got that as a budget item and have had for a number of years. We can always do a laboratory simulation there, but it’s our preference to actually do it in a rainfall event. So, from a timing perspective, because we can take it to the lab, we’ll make sure that it in no way slows down the permitting and approvals process.”

Prior to the company’s recent share price run and the conflict between Russia and Ukraine, Ardea tapped the market for \$21.5 million to guarantee funding for all of the proposed work plans at KNP. Some of this will be directed to ongoing exploration at the Emu Lake nickel discovery which sits some 70km north-east of Kalgoorlie on a granted mining lease within the Kalpini Hub.

and reserves can be defined, there’s plenty of underutilised process options nearby in the Eastern Goldfields.

“If we can get the Goongarrie Hub developed, we can also treat any nickel sulphide ore through the same flowsheet for our laterite resources. You can easily blend the sulphide ore in with the laterite ore, and there’s benefits in doing that because the sulphides add natural heat to the whole system as well. We’re really spoilt for choice with any meaningful nickel sulphide discovery that can be converted to resources and reserves.”

Penkethman also believes laterite is no longer a dirty word when it comes to local nickel projects despite Australia having a chequered history with handling those ore types.

“I think people are increasingly realising that there’s simply no battery revolution without laterites playing a part in the supply response,” he said.

“Everything in our flowsheet has been successfully utilised at other operations around the world. It all comes down to having the right people and the right technology and not cutting any corners. We’ve taken the time to study and identify exactly what’s been challenging and what works,



Penkethman believes the Emu Lake discovery contributed in some small way to the significant growth in Ardea’s market cap – \$321 million at the time of print – over the past year.

“I can certainly see nickel sulphides playing a part with ongoing exploration success and then resource definition,” he said.

“Any nickel sulphide discovery could be monetised in a number of different ways. They include potential divestment or partnership, or assuming sufficient resources

and incorporate all of those learnings into our flowsheet.

“We’ve got the best laterite project in Australia, in the optimal location...it’s really a simple investment thesis.”

– Michael Washbourne