

Australia's bold and beautiful critical minerals future



Having solidified its ties with one of the world's biggest technology powerhouses, Australia's critical minerals future is looking rosy. So what's next?

In December 2021, Australia hosted a historically significant meeting when Republic of Korea (South Korea) President Moon Jae-in met with some of Australia's brightest critical minerals exponents.

It was the first visit to Australia by a South Korean president since 2009 – a feat considered more remarkable given the border disruptions caused by the COVID-19 pandemic in recent times.

It's no secret that South Korea has become a technological powerhouse, with the country home to three battery heavyweights; LG Energy Solution, Samsung SDI and SK Innovation combine for approximately a third of the global electric vehicle (EV) market.

South Korea's gross domestic product (GDP) positions it among the 10 most lucrative countries in the world; however, the country is only so effective on its own.

Battery creation can't be made possible without the necessary resources and Australia is growing its critical minerals capability to position itself as a trusted partner to South Korea's technological exploits.

So President Moon met with a range of Australian delegates, including representatives from Queensland Pacific Metals, Australian Strategic Materials and Cobalt Blue – three companies that can shore up South Korea's supply of critical minerals going forward.

Liz Griffin, executive director for the Australia-Korea Business Council (AKBC) – the national body that facilitated the introduction – says the meeting provided a significant vote of confidence in Australia's capacity as a reliable business partner.

"The visit by the Korean President sent a really strong signal that the Australia-Korea bilateral relationship is a significant one," she says.

"Also, by co-hosting this meeting with the AKBC, specifically focussed on critical minerals, it sends the signal that, for Korea, securing a long-term, stable supply of critical minerals is a key priority to them, particularly given it is one of the world's great technology powerhouses."

The meeting was even more noteworthy given it was President Moon's only business engagement during his brief stay in Australia.

The AKBC members delivered strong messages to President Moon about what they see is required to step up Australia's engagement and cooperation with



Korea in the critical minerals space. Environmental, social and governance (ESG) was also discussed.

"One of the other key things that was tabled was Australia's credentials in ESG and that we can provide critical minerals in an environmentally sustainable way.

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This is really important because at COP26 (the 2021 United Nations Climate Change Conference), President Moon officially committed to Korea cutting greenhouse gas emissions by 40 per cent by 2030, and they also have a commitment for carbon neutrality by 2050.

"So in terms of the opportunities, we pitched this to President Moon as a triple helix approach, where we need to have the government, business and

academia working hand-in-hand to solve these issues."

Queensland Pacific Metals (QPM) is represented by its TECH Project, which located south of Townsville in the Lansdown Eco-Industrial Precinct and poised to be northern Australia's first environmentally sustainable advanced manufacturing, technology and processing hub.

A future producer of green nickel, cobalt, high-purity alumina and other by-products, the TECH Project's ESG credentials are what set it apart.

In November 2021, QPM updated the TECH Project's life cycle assessment, which suggested it will be the first ever battery-grade nickel manufacturing plant that's not only carbon-neutral, but carbon-negative.

QPM will look to achieve this through a gas-sourcing strategy that will see it repurpose greenhouse-intensive waste gas from metallurgical coal mines to power its manufacturing plant.

To solidify this plan, QPM signed a memorandum of understanding (MoU) with Transition Energy Corporation and North Queensland Gas Pipeline in August 2021 in order to establish a dedicated gas supply chain from the northern Bowen Basin to the TECH Project.

The TECH Project is estimated to require 10 petajoules of gas per annum once in steady-state operation.

QPM managing director and chief executive officer Stephen Grocott says the TECH Project was built with sustainability front of mind, and while ESG credentials haven't always been as highly valued as they should be, gaining the attention of South Korea is a significant step forward.

"Gaining recognition for our sustainability credentials is very

important. Just recognising that in the market is significant for producers like QPM because we are so clean and so green it's not funny," he says.

"In the sustainability race, we've finished the race and we've got our feet up having a cold drink while other people are still strapping on their running shoes.

"We're negative greenhouse gas intensive, zero process liquid discharge, we're almost no residue, no tailings dam. We use recycled materials in our process."

With plenty to show for his company heading into the December meeting, Grocott says establishing ties in high places enhances QPM's prospects down the track.

"The fact that we already have offtake agreements with two of the big players, LG Energy Solution and POSCO, is being seen as a real positive and clearly, having relationships with senior government officials and the Korean Minister for Trade, Investment and Energy, the fact that we've got a relationship at that level, that just helps move things faster," he says.

"As we move to complete our feasibility

study in the middle of this year and move towards a final investment decision, the alignment between the governments in relation to debt and equity funding, for Korean companies and debt providers to know we've got the government blessing is a positive in itself."

Following the completion of the definitive feasibility study (DFS), construction on the TECH Project could begin in 2022 with first production expected to commence in late 2023.

QPM aims to process 1.5 million tonnes of ore annually from the TECH manufacturing hub, which the company will import from New Caledonia through the Port of Townsville.

In the same week that QPM met with President Moon, it also announced a \$30 million capital raise and \$250 million of debt funding support from Export Finance Australia (EFA).

The EFA is the second Australian government agency to get behind the project, following advice from the Northern Australia Infrastructure Facility (NAIF)

that the TECH Project had progressed through its strategic assessment phase and proceeded into the due diligence phase.

The EFA is completing due diligence on the TECH Project, in line with the agency's requirement to provide financial expertise and solutions to support Australian businesses across a range of industries, including critical minerals.

To obtain the EFA's financial support, QPM will need to demonstrate it is making satisfactory progress towards various objectives, such as the completion of the TECH Project's DFS; an acceptable engineering contracting strategy for the engineering, construction and commissioning of the project; and a funding plan including the raising of equity and securing funding from other lenders.

Grocott says that despite the fact the TECH Project DFS is not yet released, the company is making other proactive inroads to ensure flexibility down the track.

"Particularly given the post-COVID logistics and the massive boom all around the world, we're starting to work more



Australian Strategic Materials' Dubbo project in NSW.



The roundtable meeting held in Sydney.

closely with the key equipment suppliers and we hope to start engineering early with them so we're not at risk of schedule creep," he says.

"Normally what happens is companies complete the feasibility study before they start on the engineering. We didn't want to do that; it's looking good enough that we're going to start on some of this detailed work early and face less risk of blowing out the schedule."

Given the significance and rarity of President Moon's visit, Grocott says the AKBC must be credited for not only establishing the meeting, but for its sustained commitment to enhancing the bilateral relationship between the two nations.

"The AKBC did a fantastic job helping make this happen. If it wasn't for them, I suspect that these meetings would not have occurred," he says.

"So that's the private sector cooperating in both countries and that's the sort of thing we need. The more the government can do the better, but we can't sit there on our backsides with our hands out – all parties need to pull together."

Australian Strategic Materials (ASM) used its time alongside high-level delegates to establish a deal with the Korean Mine Rehabilitation and Resource Corporation (KOMIR), the country's dedicated body supporting the supply of critical minerals and metals into Korea.

The agreement will see ASM work closely together to expand the use of rare earths and critical metals in Korea and shore up import opportunities going forward. The company's South Korean processing plant will be a centrepiece of this partnership.

ASM managing director David Woodall says the agreement shows Korea's eagerness to consolidate its critical minerals supply chains.

"This Joint Statement of Cooperation is another firm sign of Korea's commitment to securing its supply of critical metals and to working with ASM to deliver an outcome that is beneficial to the Korean supply chain," Woodall says.

"ASM welcomes this opportunity to work with KOMIR to provide an alternative, secure and sustainable supply of critical metals. ASM will commence production of critical metals at ASM's Korean metals plant in 2022."

To complement its Korean processing plant, ASM is also developing its Dubbo project in New South Wales, a large in-ground polymetallic resource of rare earths, zirconium, niobium, hafnium, tantalum and yttrium.

With all major approvals and licences in place, ASM is undertaking the relevant optimisation and financing to support the Dubbo project, before it looks to commence construction soon thereafter.

Just prior to signing its agreement with KOMIR, ASM reported strong financial results from its optimisation study for the Dubbo project.

The optimisation work simplified the process flow sheet of the Dubbo project, while facilitating new strategies that will reduce operating costs and improve the ESG performance of the project.

Following the optimisation work, the Dubbo project's pre-tax net present value (NPV) increased from \$1.24 billion, found in 2018 optimisation studies to \$2.36 billion.

"The optimisation work confirms we have a project that can integrate into our

metals business to create an alternate, sustainable, secure and stable long-term supply of critical metals and oxides," Woodall says.

"This places ASM in an exceptional position in the critical metals value chain, as the vertically integrated owner of a globally significant polymetallic resource in Dubbo, and the capability to produce critical metals from this resource to the highest environmental standards."

Cobalt Blue is represented by its Broken Hill cobalt project in New South Wales, which is still in its development phase and comprises a global mineral resource of 118 million tonnes at 859 parts per million cobalt-equivalent for 81,100 tonnes of contained cobalt.

Broken Hill's pilot plant successfully produced cobalt sulphate samples in October 2021, and with a host of parties eager to receive samples, Cobalt Blue will transition the pilot plant to a demonstration plant in 2022.

Cobalt Blue formed a partnership with Korea through LX International, a Korean resource investment company which has been a Cobalt Blue shareholder since 2018.

While QPM, ASM and Cobalt Blue were the three companies present at the December 2021 meeting, it doesn't mean other critical minerals companies won't also be able to benefit from the partnership.

The meeting has laid the groundwork for future discussions and agreements to come to the fore. If Korea's resultant interest is anything to go by, Australia has an incredible opportunity to commercialise its critical minerals affluence.

"Things are really going to escalate and heat up over the coming weeks, months and years," Griffin says.

"Remarkably, we've already seen follow-up from Korea's Ministry of Trade, Industry and Energy, and they've already followed up on some of the recommendations that we made in the meeting.

"Some of the recommendations we put forward to them were around inviting more Korean companies to join the AKBC critical minerals subcommittee and we've also extended the invitation to Korean companies to travel to Australia.

"I know there's already quite a significant number of Korean businesses that are keen to come to Australia as soon as it's safe to do so. In particular, they've signalled that they're particularly keen to get to Western Australia." ARRI