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BIG BET ON LITHIUM POWER

The demand for lithium-ion batteries 'is taking off'

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There is a fundamental shift in the way in which the world uses and distributes power.

It is only the cave dwellers who would have missed that lithium-ion batteries are a big piece of what is going on.

Look no further than the ASX where there is now more than 40 companies with lithium credentials, ranging from Johnny-come-lately explorers, through to the near-term producers, and the established producers of the stuff.

And that is ignoring the boomlet in graphite stocks and the yet-to-fully form cobalt boom that can be expected, given it takes more than lithium to make a lithium-ion battery.

Today's focus, though, is on lithium and on figures compiled by Canaccord Genuity, it can be said that on average, the lithium space on the ASX is up by some 300 per cent or so since the start of December.

The sector has been catching its breath in the last week or two given the spectacular gains that have been notched up.

But the underlying thematic that lithium-ion batteries are taking off as the mainstream portable power supply has not gone away. Big name investment houses like Goldman Sachs, Credit Suisse and Deutsche have all been busy sizing up what is unfolding in recent days.

Increased penetration of elec-

tric vehicles is a major part of their upbeat assessments of lithium-ion demand.

And on that point it is worth mentioning that while there is a lot of hype around Elon Musk's Tesla, there are in fact 25 makes and models of electric vehicles to be released by established car manufacturers in the next couple of years.

Current demand for lithium carbonate equivalent (LCE) for batteries and the metal's traditional applications is about 170,000 tonnes annually.

Goldman Sachs reckons that could more than triple to 530,000 tonnes by 2025. That assumes electric vehicles account for (only) 3.5 per cent of the global car market by 2025.

It is at this point that a note by Deutsche get interesting. Penned by James Kan after a tour of China's electric vehicle and battery supply chain, the note has an interesting take on where to next for lithium-iron batteries, and by extension, the potential for the

ASX lithium boom to roll on.

"We envision rapid growth of lithium battery capacity in China will drive down the adoption cost and that lithium batteries will then entirely substitute lead-acid batteries in all applicable areas," Tan said.

"Together with the Chinese government's support for the electric vehicle industry, we believe lithium battery demand is taking off."

China stunned everyone by growing its steel production to the levels it did within the space of 10 years. China did the same in aluminium. If it decides that lithium batteries are the answer to its pollution problems and oil import dependency, then the growing tribe of lithium players on the ASX will continue to be worth watching.

But given the relatively small size of the global lithium market in tonnage terms, only a handful of the explorers in the space can be

expected to eventually make it in to production, notwithstanding the high growth scenario.

Pilbara Minerals (PIL), with its Pilgangoora project some 120km south of Port Hedland in Western Australia, is one of those expected to make the transition to producer status.

It has confirmed its Pilgangoora lithium (and tantalum) deposit as the second biggest source of spodumene (a hard rock source of lithium) behind the long established Greenbushes operation in WA's southwest, owned by US and Chinese interests.

Mine developments need to be based on a whole range of parameters like, grade, scale, ease of mining, access to infrastructure and so on. Pilgangoora looks to meet all the requirements, which is why investors rushed to take up a \$100 million placement last month.

The broader potential of the Pilgangoora area on the back of

Pilbara Minerals' success to host more than one development has been causing a bit of buzz among those juniors active in the region.

The newly named Kairos Minerals (KAI) is one of them.

Formerly known as the Mining Projects Group with a nickel focus, Kairos first got ready for the push into the lithium space by undergoing a share consolidation and a corporate makeover in which veteran mining executive Ian Finch became chairman.

Nickel is still part of the Kairos story, but a January deal saw it snare some prime pieces of lithium real estate in the Pilgangoora area, and the broader East Pilbara region. Its Pilbara lithium project area comes with a gold leg courtesy of the old Lynas Find, and adjoins Pilbara Minerals' and Altura Mining's (AIM) Pilgangoora deposits.

Initial field work program commenced recently comprising

reconnaissance field evaluation, mapping/rock chip sampling, airborne geophysics and interrog-

ation of the project's extensive drilling database.

Targets aplenty were identified and given their address, demand a follow up drilling program. When it gets going, probably around midyear, it will be closely watched.

Kairos also recently acquired Wodgina East Project located adjacent to Global Advanced Metals' Wodgina tantalum operation, some 17km south of Pilbara Minerals' Pilgangoora project.

The project area contains extensive pegmatite (a source of spodumene) swarms previously mapped by iron ore producer Atlas Iron and from which rock sampling returned good grades.

Kairos has a relatively modest market capitalisation compared with some of its lithium peers and will be one to watch as it gets busy with drilling campaigns.

Another Pilgangoora lithium explorer, **Dakota Minerals (DKO)** has enjoyed one of the more spectacular share price gains for the sector this year, rising from around 5c a share in early January to 18.5c a share last week before heading off in to suspension while completing a \$7.5 million placement.

The uptake of the placement is expected to be confirmed today and will follow on from Dakota's completion of a maiden drilling campaign at its Lynas Find lithium project. Ahead of the suspension for the placement, six out of a total of 26 holes had been analysed, with the remainder to be released in the coming weeks.

Results to date point to thick, high-grade spodumene intercepts from at or near surface, which go to confirm the continuation of the Pilgangoora lithium system into Dakota's tenements.

Funds from the placement are earmarked to accelerate drilling and resource evaluation at Lynas Find, as well as confirm lithium-bearing pegmatites identified by surface sampling elsewhere on the tenements.