

ASSET CLASS INSIGHTS

AUSTRALIAN EQUITIES – BATTERY MATERIALS SUPPLY CHAIN ASIAN TOUR

Conclusions

- The electric vehicle (EV) transition is still on-going despite all the negative headlines in mainstream media.
- In the short and medium-term it is all about China.
- The trip produced new insights and has helped us build conviction around our current portfolio stocks across the Resources sector.

The Electric Vehicle (EV) Megatrend is just revving up – with such a great shift comes significant **investment opportunities**. As part of our investment research process, we recently spent 2 weeks across Asia (Japan, Korea, mainland China and Hong Kong) meeting experts and companies across the battery materials supply chain to build insights and conviction in this space.

THE EV TRANSITION IS STILL ON-GOING, BUT IT'S ALL ABOUT CHINA IN THE SHORT AND MEDIUM-TERM

The global auto market sold ~85m vehicles in 2023 of which ~14m were EVs (includes Hybrids). China (the largest auto market globally) sold ~25m vehicles of which ~9m were EVs.

The expectation for 2024 is that global EV sales will grow by ~4.2m of which ~3m will be from China (or ~75% of the growth). We think China can deliver this growth given:

1. EVs are now affordable for the mass market (and getting cheaper with price competition – this is “normal” in China given EV OEMs (Original Equipment Manufacturers) are more focused on growing volume to benefit from economies of scale)
2. the ICE (Internal combustion engine) OEMs in China have reduced manufacturing capacity post the changes to the emission standard late last year; and
3. China’s auto “trade-in” policy (detailed rules expected in 2Q)

AND IN THE LONG-TERM?

In our view, this will largely depend on how the Western countries transition to EVs. To gain some valuable insights on this market we visited a few ‘legacy’ OEMs (Toyota, Honda, Hyundai and Kai) where they told us that consumers in Western countries still had ‘range anxiety’ and prices weren’t at a price point for the mass market.

We think range anxiety can be solved over the medium-term as there is a lot of research and development looking at new battery chemistry which are higher energy density (and therefore higher range) such as the All-solid-state battery.

However, the affordability piece could potentially be resolved in the short to medium-term as Chinese OEMs export EVs to the world. While there are concerns that countries will introduce tariffs to slow this down (e.g., in Europe), we are not so concerned because the Chinese OEMs have a material cost advantage over legacy OEMs. In our travels, we have heard that some Chinese OEMs can produce EVs which are 50% cheaper and better compared to what is available in western countries.

Some might remember the Toyota Crown. When Toyota first exported it around the world in the 1960s it was considered an inferior product. A few years down the track, it was considered a reliable car and in high demand. Could the Chinese OEMs follow the same path as Toyota in the 1960s? Potentially.





From our observations, it felt like the Chinese OEMs are miles ahead of their overseas competitors. While the Korean OEMs were making the transition slightly faster compared to the Japanese OEMs. The key challenges for the 'legacy' OEMs are:

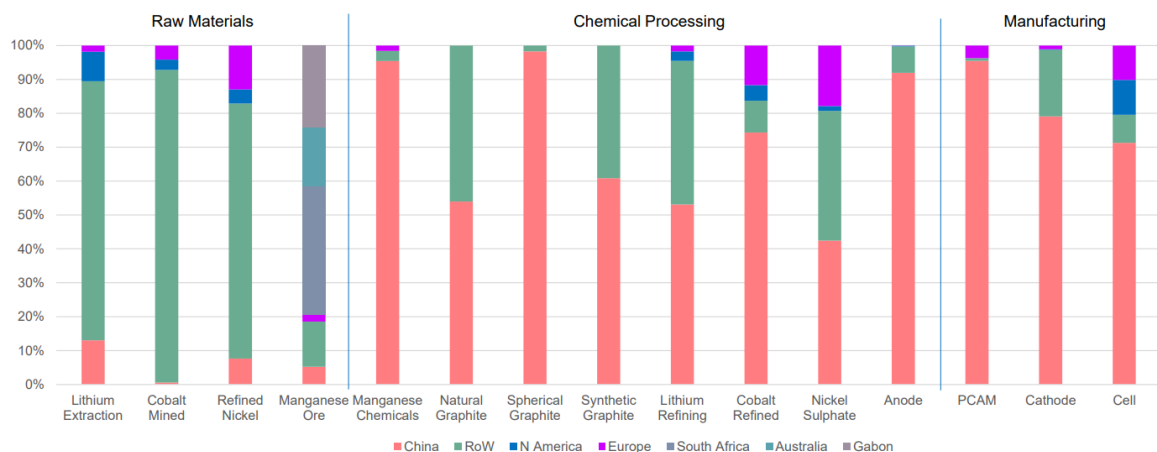
- They need to 'disrupt' themselves and need to re-allocate capital from their profitable ICE business to a loss-making EV business (in the short-term).
- They will need to reduce their labour force materially because there is less labour required in an EV manufacturing line (vs. ICE) largely due to automation and less parts in an EV. This become more challenging in countries like Japan and Korea where the unions are very strong.

CHINA HAS LARGELY BUILT ITS BATTERY SUPPLY CHAINS – THE REST OF WORLD NEEDS TO PLAY CATCH-UP

In our discussions with legacy OEMs, it was clear that their strategy surrounding their battery supply chain was in its early stages. What was interesting was that there was hesitation to take direct ownership of mines but rather use trading houses to procure raw materials. The focus being securing volume off-take as opposed to fixing prices. In the medium term, we expect further volume off-take agreements signed with ex-China suppliers.

When looking at battery supply chains it's worth considering the position in China vs the Rest of the World (RoW)

Lithium Battery Supply Chain Geographic Distribution 2023



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Whereas the Chinese OEMs have largely built their battery supply chains. Some such as BYD Auto are fully integrated from the raw materials (taking direct ownership in mines) to producing their own batteries and cars.

CHINA LITHIUM SUPPLY

With Lithium spodumene concentrate prices falling from a peak of US\$8,000/t in 2022 to just under US\$1,000/t before we left for our trip, we were interested in understanding lithium supply from lepidolite in China (which is a very opaque market).

Our key findings were:

- In the short-term, environmental inspections are having an impact on supply. The issue is tolling away the waste from the refinery where some material such as thallium are radioactive when in water.
- The industry can only support maximum production of 200-300kt LCE per annum, anything above this the "Environment will be destroyed" (within the Yichun region). This was important given we have seen forecast with lepidolite production greater than 300kt LCE per annum.



WHAT THIS MEANS FOR OUR PORTFOLIO

Following the trip, we now have more conviction in our investment thesis in the lithium sector.

- Demand - The EV transition is still on-going despite all the negative headlines from mainstream media.
 - China continues to be the most important market over the short and medium term.
- Supply - Lepidolite out of China has a cap and can't continue 'flooding' the market. This gives us confidence in our long-run lithium price forecast US\$1,400/t in our equity valuation model.
- Lithium producers with uncontracted supply should benefit as ex-China build out their supply chain.

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Thi has been an equities analyst with Equity Trustees since August 2013. He is responsible for coverage of the Metals and Mining, Energy, Developers & Contractors and Gaming sectors.

About our process:

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