



# Resources Stocks Down Under

“ If someday they say of me that in my work I have contributed something to the welfare and happiness of my fellow man, I shall be satisfied. ”

- George Westinghouse Jr. (1846 - 1914), American entrepreneur

## LEPIDICO

The lithium underdog in the EV race

## APOLLO CONSOLIDATED

1.1 million ounces and counting

## MAGNUM MINING AND EXPLORATION

Good view, bad timing

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Stocks Down Under rating: ★★★★★

**ASX: LPD**  
**Market cap: A\$203M**

**52-week range: A\$0.007 / A\$0.042**  
**Share price: A\$0.041**

We've said it before and we'll say it again - the growing EV demand means a massive growth in demand for lithium, which could triple between 2020 and 2030. Lepidico intends to be a player with its unique technology that allows the production of lithium carbonate from lithium mica. While share prices for companies like Lake Resources (ASX: LKE | [see 8 April 2021 report](#)) and Vulcan (ASX: VUL | [see 21 January 2021 report](#)) have already finished their first laps, can Lepidico catch up from the start line?

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WA gold explorer Apollo Consolidated believes it already has the ounces for a standalone gold operation at its flagship Lake Rebecca Gold Project and many of those ounces come from one deposit. While the company races to add ounces to a growing Mineral Resource Estimate (MRE) and delineate regional targets for exploration, it has also begun the process of engineering work and pit design as it eagerly tries to join the Kalgoorlie gold ranks. The impressive work has been recognised by Ramelius Resources (ASX: RMS) who offered \$0.62 per share for Apollo on 1 November 2021, split between cash and Ramelius Resources shares.

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Magnum Mining and Exploration is angling to be the next unlikely premium iron ore producer now that it has acquired the historic Buena Vista mine in the US state of Nevada. The company also has the capacity to be first mover in greener iron ore product with its plans for a green hydrogen plant, while the project continues to catch the attention of green hydrogen suppliers and big-name American producers.

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## Share price chart



Source: Tradingview

We're witnessing the early days of what could be one of the most drastic shifts in consumer trends in recent history. The electric vehicle (EV) market is only just kicking off and all signs point to a rising market with hungry consumers. In an Electrical Vehicle Council 2020 report, 56% of surveyed consumers would consider purchasing an electric vehicle as their next car. The key ingredient needed to fuel this incoming change? High purity lithium.

We know the lithium market is going to see strong compounded growth over the next decade and this is reflected in the exponential growth in some of our very own ASX-listed companies that we have covered – Lake Resources (ASX: LKE) in the 8 April 2021 edition and Vulcan (ASX: VUL) on 21 January 2021.

In true resource company fashion, there's always more than one way to get the job done. Lake Resources is a brine miner with projects in the Lithium Triangle, meaning it sources its lithium from brine collected from salt lakes in Argentina. Vulcan is following suit, looking at brine in Germany and planning for a zero-carbon solution, utilising geothermal energy. If you read our 21 January article on VUL, when we rated it two stars, you'll agree with us that this project still has a lot of ground to cover before it gets even close to getting off the drawing board. With our eyes now set on Lepidico, let's see how this company can be a contender using its lithium mica process.

## **The Definitive Feasibility study for Phase 1**

Lepidico's ambition is to become a vertically integrated lithium producer, handling all the steps from mine to battery-grade lithium chemical production. A 28 May 2020 Definitive Feasibility Study (DFS) shows how valuable this can be for the shareholders, even at the Phase 1 level of development. The study has given the Phase 1 Project a 31% internal rate of return and an NPV of US\$221 (A\$340m) ungeared, with a production life of 14 years. That's on average output of 4,900 tons per annum of battery-grade lithium hydroxide (at only 87.5% design capacity), using Lepidico's proprietary conversion solutions. The C1 cost is US\$1,656/t lithium carbonate equivalent and the All-In Sustaining Cost is US\$3,221/t after credits from other products. With 460x scale up from their pilot plant and rising lithium prices, this company is well-positioned to be a low-cost producer of battery-grade lithium. An added bonus: 38% of the revenue is forecast to be made up of by-products of their proprietary process.

A chemical conversion plant is currently being built in Abu Dhabi using Lepidico's patented L-Max process. Lepidico wants the process to be as hyper-efficient, climate-friendly and zero-waste as possible, extracting metals out of Lithium Mica and putting the extracted product into solution, then concentrating it. What sets Lepidico and its L-Max process apart is that it is the first company moving lithium mica in development and production, offering a cost-effective way to compete with direct brine miners, like Lake Resources. It isn't power or energy-intensive; the process is done in ambient atmospheric pressure, with a maximum temperature during the production process of 120 degrees Celsius. The L-Max process also allows Lepidico to access to the lucrative by-products we pointed out earlier, creating Caesium, Rubidium, Sulphate of Potash and amorphous silica. Lepidico reckons it will have 7,000 tpa worth of product to sell, in terms of 'lithium hydroxide equivalent'. The latest information was released on 12 October 2021, when the company announced it had secured the land for its Phase 1 Chemical Plant within the Khalifa Industrial Zone of Abu Dhabi for an initial term of 25 years.

## **A truly multicultural 21st century company**

Lepidico is fully permitted to re-develop two open-pit mines in Karibib, South Africa to provide feedstock lithium mica into a concentrator. Why Karibib though? Why not set up shop at the alluring Lithium Triangle? Ultimately, Karibib is a strategic choice, aligning with Lepidico's philosophy of efficiency. Karibib covers two already open pit mines with extensive data, saving Lepidico the effort of permits, drilling, exploration and development. The Definitive Feasibility Study showed Ore Reserves of 6.7 million tons, grading 0.46% Li<sub>2</sub>O, 2.26% rubidium and 320ppm caesium.

Once Lepidico has the concentrated feedstock from Karibib, it plans to ship it off to Abu Dhabi, once again displaying their craftiness. Sulphuric acid is a key reagent in the proprietary L-Max process and Abu Dhabi is the world's largest producer of sulfur. A dedicated acid plant is planned to be built after the first three years of the operation.

Sure, this NPV might not be as high as Vulcan's, but it doesn't have to be because it's just tracking Phase 1. Subsequent expansions can add considerably more value. The team at Lepidico have leveraged everything they have to make a hyper-efficient and efficient production line, ensuring strong profit margins to come. Not to mention they've already started development whilst the LKE and VUL are still in the DFS phase. Everyone loves a good underdog story and we reckon the market has yet to wake up this sleeping dog. Four stars from us.

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Source: Tradingview

## Advancing on Lake Rebecca

Lake Rebecca, which is located 145 km east of Kalgoorlie, comprises three deposits: Rebecca, Duke and Duchess. The latter was previously named 'Redskin', but Apollo thought it prudent to change this last year, for obvious reasons. Apollo has other greenfield gold interests at the Larkin and Yindi Projects in the same region, but the Rebecca deposit shows the most potential as a mine because infill and resource definition drilling continues to reveal shallow, high-grade gold mineralisation. In May 2021 the company recorded positive intercepts including 7 metres at 12.5 g/t Au from 78 metres from the eastern margin of the project, a welcome addition to Rebecca's resource upgrade to 815,000 ounces at 1.3 g/t Au in April.

The project currently has a mineral resource of 29.1 million tonnes at 1.2 g/t Au for 1.1 million ounces of gold, with 74% in the indicated category, while neighbouring Duke and Duchess have also received resource boosts. Helpfully, in February the company acquired an extra 1.35 sq km of north-eastern ground from gold buddies Matsa Resources (ASX: MAT) and Bulletin Resources (ASX: BNR) to expand the resource, a decision which appears to be paying off.

## **A surprise within a surprise**

The Ivory Coast was initially Apollo's main area of interest with attachments to three gold projects in the country when Lake Rebecca started to return a string of high-grade results in 2017, prompting the company to concentrate on Western Australia.

Despite the Kalgoorlie region's popularity, Lake Rebecca remains deeply underexplored with multiple exploration targets to be included in the next MRE update. RC drilling has helped uncover new high-grade gold structures at the eastern footwall (known as the Jennifer structure) and northern edges of the optimised pit shell and down-plunge exploration potential in the southern portion of the deposit. May's results will add significant value to the next MRE update as well as the project's technical studies to determine the feasibility of a standalone operation, which are also currently underway.

While the company awaits more assay results from 40 RC holes, it has renewed confidence in new structural targets outside the pit shell, including the Cleo discovery, which sits 1.5 km west of the Rebecca deposit. Hits such as 2 metres at 9.29 g/t Au provides Apollo with a new exploration front to supplement the growing MRE. Not to be forgotten, both the Duchess and Duke deposits look to provide further upside at 160,000 ounces and 65,000 ounces respectively. Duchess contains promising targets to the north and south, which could make it a significant contributor to a gold operation.

## **The sun shines on Apollo**

At 815,000 ounces in indicated resources, the Rebecca deposit already supports a potential mining scenario and the company has wasted no time in using 2021's results to feed into its preliminary engineering and mine planning. This will in turn provide data to feed into a Pre-Feasibility Study. Outside of exploration drilling, Apollo has begun work on licencing, environmental studies and hydrology – specifically six water monitor bores. The company also remains one of the better-funded juniors following the March sale of its 1.2% net smelter royalty from the Sequela Gold Project in the Ivory Coast for \$20m.

That royalty sale boosted the cash balance to \$36m, but with its 25,000 metre RC and DD drill program still in progress, the number is now down to \$15m. That said, the company's confidence in a future mine at Lake Rebecca presents opportunities for funding further down the line. The next steps for the remainder of CY21 Apollo will make the most of its aggressive exploration push, with multiple remaining points to explore – including six core diamond drill holes at Rebecca and the structural corridor between Duchess and Rebecca. And, while it's still early days, prospecting has begun at its Larkin and Yindi Gold Projects to explore more greenfield land.

The impressive progress made by the company has drawn the attention of Ramelius Resources (ASX: RMS | [see 1 February 2021 report](#)). On 1 November 2021, Apollo announced it had received an unsolicited offer from Ramelius at \$0.62 per share for all shares not currently controlled by the company. The offer is split between \$0.34 in cash and 0.1778 Ramelius shares. The offer provides an impressive premium of 53.2% to Apollo's one-month VWAP of \$0.405 and 91.5% to its six-month VWAP of \$0.324. At this time, it seems unlikely to us that the acquisition won't go through as management is fully supporting it and Ramelius has already locked in 19.9% of shares to vote yes. The market seems on top of this acquisition leaving us no option but to give Apollo only three stars.

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## Stronger than ever

Magnum bought Buena Vista in 2020 and already calls the project 'shovel ready' for a DSO operation with required drilling, metallurgy and plant design completed and permits secured. Located 160 km east-north-east of the Nevada capital of Reno, Buena Vista is an advanced magnetite iron ore project with an impressive history. The field first began in 1890 but the project's heyday was in the middle 20th century when it produced around 900,000 tonnes under various companies, including Columbia Iron Mines, a subsidiary of the legendary US Steel. Magnum reckons Buena Vista still has 232 million tonnes at 18.6% Fe on the most recent resource estimate.

Magnum plans for a staged approach at Buena Vista, starting with a direct ore shipping operation targeted for fourth quarter 2021, followed by a 68% Fe magnetite concentrate operation starting in the second quarter of 2022, which will enable production of high-quality pig iron and hot briquetted iron products, which attract a significant premium over DSO. The company has an exclusive agreement with Anglo American, which could see the latter grab all of the project's DSO.

If you thought Anglo American was just a South African gold and platinum miner, you're a little out of date. These days the company is based in London (LSE: AAL) and it's big across a range of commodities, including iron ore, where it has massive interests in South Africa (via Kumba, the world's fourth largest producer thanks to the Sishen mine in Northern Cape Province) and Brazil.

## **Green steel zealotry**

Now that Magnum has a first entry to the American market through Anglo American and short-term cash flow, the company is already making plans to exploit the long-term opportunity in green hot-briquetted iron (HBI) and pig iron. Both products are used as raw materials in steelmaking and foundry production, and there are ongoing supply issues of pig iron globally even though America is a significant importer – making Buena Vista's unique magnetite ore perfect to supply the gap.

But now that the Biden Administration has put forward its global emissions strategy, there is a more pressing opportunity in greener versions of HBI/pig iron using clean hydrogen technology and biomass/waste materials unique to the region. So far, the company has an arrangement with Nevada-based hydrogen provider AVF Energy to construct a commercial-scale green hydrogen plant onsite.

AVF is big on producing green hydrogen from waste materials, like landfill, but in this case there's potential in using the Juniper tree as biomass. Hardy old *Juniperus occidentalis* is an excellent source of fuel and as it's an invasive tree it's readily available. All of which makes it a good carbon credit. As premium is everything in the iron ore space, prices for pig iron and HBI reside around \$650 and \$500 per tonne respectively, meaning there is healthy profit potential from both import and export routes via America's transcontinental rail system. Much of Buena Vista's product went straight to Japanese markets more than half a century ago and Asian market demand for premium products outside China remains as high now as it was then.

## **Finding a new path**

Oddly enough, Buena Vista is not the company's flagship project – that honour goes to its Gravelotte Emerald Project in South Africa. Gravelotte provides Magnum a medium-term shot at a very niche market, but now that Buena Vista is in the picture – and COVID-19 and recent civil unrest in South Africa have continued to hamper production – the company is rethinking Gravelotte's future options, one of which could be to sell. Given that the company only acquired Buena Vista for \$7m, it makes sense that Magnum might trade all those emeralds for a shovel-ready project at a time of global stimulus in the US.

With monthly payments from Anglo American and AVF agreeing to fully fund the hydrogen plant, the next hurdles for the remainder of the year are signing MoU's with port and railway providers as well as utility supply, plant design and permitting for its magnetite concentrate for Phase 2. As more companies look for more ways to reduce carbon emissions under ESG policies, Magnum believes it could be a leader in green steel.

What's not to like about Magnum? Managing Director Dano Chan, who runs Magnum from Hong Kong, likes where his company has got to so much he was an on-market buyer of stock in late August and early September. The problem is the price of iron ore, which has only been going one way lately, and that is down. Buena Vista is, however, is a different kind of iron ore story than many we've looked at in Stocks Down Under lately and the involvement of Anglo American bodes well. Which is why we're giving three stars rather than two. Once iron ore settles down a bit, we can revise our view, particularly if Chan and his colleagues make more progress.



## Pitt Street Research Pty Ltd

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