



Resources

Stocks Down Under

📖 *Do not wait to strike till the iron is hot; but make it hot by striking.* 📖

- William Butler Yeats (1865 - 1939), Irish poet

CYPRIMUM METALS

Heating up the copper

LEIGH CREEK ENERGY

More fertiliser production at home

MINDAX

Waiting in the wings

CYPRIMUM METALS

Heating up the copper

Stocks Down Under rating: ★★☆☆

ASX: CYM
Market cap: A\$132M

52-week range: A\$0.14 / A\$0.37
Share price: A\$0.245

Cyprimum has a growing portfolio of near-term copper projects in the Murchison and Paterson districts, but we believe the recent acquisition of the mothballed Nifty Copper mine in the Pilbara has set the company on the fast track to the Big Time.

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LEIGH CREEK ENERGY

More fertiliser production at home

Stocks Down Under rating: ★★☆☆

ASX: LCK
Market cap: A\$112M

52-week range: A\$0.067 / A\$0.31
Share price: A\$0.14

Leigh Creek Energy (LCK) is focused on becoming the first and only low-cost urea fertiliser producer through its in-situ gasification and syngas strategy. Given the rising price and demand for nitrogen-based fertilisers, the company wants to bypass Australia's current reliance on exports and create a pathway for production at home. Having successfully demonstrated its proof of concept through earlier testing, LCK's first stage of commercial syngas production is underway.

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MINDAX

Waiting in the wings

Stocks Down Under rating: ★★☆☆

ASX: MDX
Market cap: A\$88M

52-week range: A\$0.015 / A\$0.235
Share price: A\$0.048

The Perth-based explorer Mindax has had a complicated few years, having been suspended from trading during the last two and working in vain to get its flagship Mt. Forrest Iron Ore Project off the ground. Reinstated to Official Quotation back in May and with a brand-new joint venture partner, it finally looks like Mindax has a shot at producing magnetite ore from Mt Forrest.

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Cyprium has a growing portfolio of near-term copper projects in the Murchison and Paterson districts, but we believe the recent acquisition of the mothballed Nifty Copper mine in the Pilbara has set the company on the fast track to the Big Time.

Share price chart



Source: Tradingview

Building on previous work

In an effort to build its portfolio beyond the scope of its Cue Copper and Nanadie Well Copper-Gold Projects in the Murchison, Cyprium did a deal with Metals X (ASX: MLX | [see 15 April 2021 report](#)) earlier this year for three projects in the Paterson: the Nifty Copper Mine, the Maroochydore Copper Project and the Paterson Exploration Project. The latter comes with a \$32m farm-in agreement with IGO Ltd (ASX: IGO | [see 9 April 2020 report](#)). The price tag for these three assets was a cool \$60m, which was funded by a \$90m share placement at \$0.20 per share. The acquisition represents a combined 1.1 million tonnes of contained copper at Nifty and Maroochydore.

These projects join nicely with Cyprium's existing WA assets at Cue and Nanadie, with Cue mirroring the opportunity at Nifty to begin open pit leaching operations. Unlike Nifty, however, both Cue and Nanadie Well are further back in the development pipeline with continued RC/diamond drilling expected to inform a maiden JORC mineral resource at Nanadie and a joint Scoping Study, although no dates have been given. The Hollandaire deposit at Cue has a mineral resource estimate (MRE) of 2.8 million tonnes at 1.8% Cu, while Nanadie Well continues to deliver extensive, shallow and broad oxide copper-gold mineralisation. And then there's Nifty, where the best may be yet to come.

Time is money

Nifty, which has been on care on maintenance since 2019, has had a history of stalled development in the 30-odd years since it was discovered, but before the most recent shutdown it had yielded in excess of 700,000 tonnes of copper metal. Although it was restarted under Metals X as an underground copper concentrate operation, Cyprium sees the mine's earlier incarnation as an open pit heap leach and solvent extraction electrowinning (SX-EW) processing hub as the most cost-effective strategy going forward. There is, after all, a 2.8Mtpa copper concentrator and 25ktpa SX-EW plant already in place. All that is needed is a dedicated ore feed reasonably close to surface.

Heap leaching is a simplified and low-cost processing method where copper is leached from crushed ore using sulfuric acid, while SX-EW works to recover copper to produce copper cathodes. Cyprium will incorporate Metal X's June 2020 Scoping Study to quicken its timeline to first copper metal production in March 2022, but there remains a significant exploration upside to Nifty's JORC mineral resource of 658,000 tonnes given its proximity to Maroochydore.

In the medium and longer term, Cyprium will evaluate underground development options at Nifty and Maroochydore to see if they support smaller tonnage and higher-grade operations. But that will require a much better understanding of the orebodies. Since the company calls itself a 'producer, not an explorer', the acquisition of the Paterson projects could provide some much-needed short-term cash flow to work on those Murchison projects. While the Paterson Exploration Project is already covered by IGO (and free carried by 30% up to the Prefeasibility Study), the benefit of Cyprium's 80% earn-in with Musgrave Minerals at Cue, combined with Musgrave's previous gold focus and Silver Lake's work at Hollandaire, makes the path to a second heap leach operation a little clearer. But as always, these developments are set for the near future.

Laughing at the horizon

In line with the current Nifty focus, Cyprium is looking to commence early engineering works for the open pit and the design and refurbishment of the SX-EW plant while it continues the drill out of surface mineralisation. Because of the well-received share placement earlier in the year, Cyprium now has \$54.4m in cash from the end of the March quarter to review its list of drill targets at Nanadie Well, while waiting for assay results from Phase 1 diamond drilling. While all of these projects are greenfield to some extent, Nanadie offers four promising extension opportunities at the Stark, Colonel, Mt Eelya and Rapier deposits, while Nifty/Maroochydore holds up to 30 exploration targets.

As Cyprium's whole strategy is to join the ranks of Australian producers ready to make a gain from copper's Green Revolution, a more successful restart of the Nifty Copper mine would do wonders for the company's future outlook, including further potential capital raising and M&A opportunities. Although the company's share price is lower than the 36 cents recorded in May, the near-term prospects of Nifty have helped stabilise it since then. We suspect investors aren't even thinking much about Maroochydore, which may yield a mine by 2025 at a projected 20,000 tonnes of copper per annum. For investors looking to balance the near term with the medium-term future of copper, we believe Cyprium is four stars.

LEIGH CREEK ENERGY

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Source: Tradingview

Disruptive technology at home

The Leigh Creek Energy Project, which will be built on the site of the disused Leigh Creek coalfield, 550 km north of Adelaide, is billed as an underground coal gasification plant with a long-term plan to produce urea fertiliser from in-situ gas (ISG) and synthetic gas (syngas). The ISG process works by converting solid coal to its gaseous form to generate syngas, which can then be combined with ammonia and carbon dioxide to produce liquid urea before the product is dried and shipped. The company's exploration permits cover 1,153 PJ 2P gas reserves and a 301.2 million tonne coal resource combined with existing infrastructure and access to export markets.

Although still in the early stages, LCK will begin Stage 1 of the commercial project over the next twelve months. The company has already trialled the successful production of syngas through its ISG demonstration plant during 2018/19, involving the construction of an above-ground plant and below-ground gasifier (ISG) chamber. The November 2020 Pre-Feasibility Study (PFS) outlined a 30-year operation with a plant capacity of 1 million tonnes per annum with an estimated production cost of \$109 per tonne. The study also set the pre-tax Net Present Value for the project at \$3.4bn (at a 10% discount) and an Internal Rate of Return of 30%.

All the ingredients at the ready

Unsurprisingly for such an ambitious (and potentially expandable project), LCK did a capital raise \$18m at \$0.18 per share on 11 June. The money will go towards completing the big milestones at the project, including 3D seismic work drilling up to five new syngas wells, construction of the gasifier chambers and the building of power plant infrastructure, which can generate up to 5 gigawatts of power in the first stage.

The company's development over two permits at the original coalfield is a small part of the effort to re-energise the town of Leigh Creek, which fifty years ago was a struggling outback mining town and is now undergoing a multimillion-dollar state government redevelopment. From LCK's point of view, its integrated operation using downstream processing will make use of Leigh Creek's existing resources while providing a cheaper alternative fertiliser for local farmers, not to mention more local jobs.

Although we cover a lot of premium fertiliser producers in Stocks Down Under, granular urea (46% nitrogen) is the world's most common fertiliser. It is an inexpensive and readily available product that has overtaken ammonium nitrate as a fertiliser of choice because of its range of applications and low pollutant properties. Granular urea now makes up 2 million tonnes of Australian fertiliser sales, but 95% of that is imported from the Middle East and Asia. With LCK's Stage 1 small scale program underway, Stage 2 will see expanded gas production (35PJ per annum) and a power plant supporting up to 100MW power, which could support 2 million tonnes of urea per annum. As the structural demand for upstream fertiliser chains grows in Australia, LCK has gained petroleum licencing approvals and is now focussed on financing with a combination of debt, equity and strategic partnerships to provide for the estimated \$2.3bn capital cost.

High costs with a low-cost outlook

A note on the project's 'green' development and potential: the company has stated its commitment to carbon neutrality by 2030 through methods like carbon capture and underground storage, although true carbon neutrality would probably require something other than coal gasification – a process that creates large amounts of carbon dioxide. Because this is the nature of the Leigh Creek Project's geology, LCK plans to investigate other opportunities in carbon farming and carbon offsets, including the use of renewable power sources. While environmental approvals are ongoing, the company is busy with its urea offtake negotiations with a number of unnamed fertiliser trading companies.

While costly at the outset, we believe the long-term potential of the Leigh Creek project to utilise existing resources and infrastructure to provide urea-based fertiliser at home and abroad has a lot of promise. At the end of the March quarter, LCK had a total cash balance of \$7.6m, while its share price has dipped slightly to 14 cents from the May high of 25 cents. We think there's more where that came from once the project financing stars line up. However, for now we think LCK will base build for a while. Three stars.

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Share price chart



Source: Tradingview

Rising at the right time

The Mt. Forrest Iron Project is located in WA's Yilgarn Province, 300 km north-west of Kalgoorlie and 150 km north-west of the Menzies railway line, which connects with the iron ore shipping facility at the Port of Esperance. The project holds a JORC resource of 1.71 billion tonnes at 31.8% magnetite Fe (including a smaller regolith resource of 27.1 million tonnes @ 44% Fe) with many prospective areas not yet drilled. Mt. Forrest exists as a joint venture with the major Chinese miner Zijin, which holds 19.9%. Despite the impressive resource, Mt. Forrest has had limited exploration work for the past eight years with the last Scoping Study completed in 2012.

In addition to its iron ore assets, Mindax's main gold asset is its 100%-owned Meekatharra North Gold Project, 40 km north of the town of Meekatharra in the Murchison district. Drilling completed to date has confirmed several high-grade mineralised zones around the northern Lute and Harp prospects. Several of those zones appear to be parallel to those seen at the mothballed Andy Well Gold Project just 2 km away west. A Phase 1 RC drilling program at 14 holes for 2,380 metres started in May. The company is currently waiting on assay results before it sets off on Phase 2 RC/AC drilling targets.

A long time for loyal investors

For Mindax, the pull from Chinese steel mills for less polluting magnetite iron ore has been a major factor in its decision to continue work at Mt. Forrest. But the company has had to jump a few hurdles to get to this point – including weak iron ore prices and a two-year trading suspension because of a breach of ASX compliance rules. Since being reinstated on 14 May, Mindax launched a \$2m two-for-five entitlement offer at 0.5 cents and confirmed its Binding Heads of Agreement (BHOA) with Norton, ending in its share price rising as high as 37 cents. Norton's commitment will bring an extra \$20m for exploration work at the project, although the details are still being finalised.

The initial short-term strategy is to develop a low phosphorus Direct Shipping Ore (DSO) operation from the regolith resource. The idea is to generate enough cash to begin a large-scale operation for the massive magnetite resource that could feed steel mills over a 30-year time frame.

At this point, the company has about \$1.9m in the bank to finally complete a Feasibility Study and restart work to increase confidence in the resource at Mt. Forrest, which spans seven tenements. The majority of Mindax's March quarterly activities have focussed on gold exploration at both projects. Mt. Forrest originally came to Mindax as a gold project, with stringy gold mineralisation associated with quartz magnetite found at the southerly Paradise Bore, Toucan and Jason's Pride prospects. Although there is an inferred resource at Paradise Bore of 400,000 ounces at 2.8 g/t Au for 36,000 ounces, an additional drilling campaign is on the cards to generate a new gold resource which may offer some add-on value.

A bounce-back, but it's just the beginning

Simply because this is something of a restart for Mindax, there's not much to say about any upcoming campaigns at Mt. Forrest until the company sorts out its timeline of priorities. Mindax will continue its Phase 2 drilling program at Meekatharra, following up at its priority drill targets near the interpreted Andy Well Structural Corridor and two gold anomalies at holes MKT3 and MKT4, while it waits on Phase 1 assay results. The existing 500,000-ounce resource next door at Andy Well makes for an intriguing comparison with the underground mine producing around 300,000 ounces a few years ago.

While the company remains confident of Mt. Forrest's magnetite ore potential, the long-awaited project still has a few considerations to be met other than drilling, notwithstanding the development of actual mining infrastructure (including crushing, power and tailings facilities). Fortunately for Mindax, its restart in trading coincides with the perfect time for iron ore production. Still, it remains to be seen how quickly it will take the company to get to development before the opportunity passes. We give Mindax three stars in anticipation of significant updates.



Pitt Street Research Pty Ltd

95 Pitt Street, Sydney, NSW 2000, Australia

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