





## Corcel

22<sup>nd</sup> March 2022

**Blue-sky battery metals exploration & flexible grid solutions energy development led by an experienced team in the microcap space offer compelling exposure to the decarbonisation of the global economy**

Corcel is best known for its vast PNG nickel laterite Mambare Project, once valued at £40m. Management positioned the company to benefit from structural increases in battery metal prices, in particular through a doubling of its nickel/cobalt resource size through the discounted acquisition of the Wowo Gap project. Investors are now witnessing the continued development of a highly relevant vehicle supported by all-time highs and massive disruptions in the nickel market. Additional moves have been made into potential cash generating peaker plants & energy storage via the Flexible Grid Solutions business unit. Also, the Chairman has converted his recently acquired debt to equity at 1.5p and agreed to an 18-month lock-in period.

### ■ Heavily leveraged to the ongoing turmoil in global nickel markets

The transition to a low carbon world needs grid level storage and support for renewables to be a viable and stable source of energy. Investors have been clamouring for exposure to batteries & battery metals where a supply crunch had been expected in the mid-2020s onwards with accompanying big structural price hikes. These structural price hikes appear to have arrived early due largely to the Russia-Ukraine conflict and questions around the security and reliability of nickel supplies from Russia - a major producer.

### ■ Mambare & Wowo Gap shaping up to be DSO nickel suppliers to China

A Mining Lease for Mambare could be awarded at any time, allowing a DSO operation to proceed at the project. Great synergies also exist with Wowo Gap, the company's second nickel asset. This all suggests that Corcel is positioned to become a major nickel-cobalt player in the region. An MoU, whilst nonbinding, has been signed with a heavyweight offtake partner & perhaps will assist (alongside recent nickel prices) financing the move into DSO production.

### ■ Big opportunities as the UK switches to flexible power generation

Corcel is investing in energy storage/renewable projects to provide critical services to the UK grid as it transitions from coal, nuclear and fossil fuels to renewables. Already, the team has 165MW of well-advanced projects, and a major pipeline of projects which could result in 4 or 5 projects being developed annually.

### ■ Peer comparisons & industry metrics suggest c.700% upside

Our highly conservative valuation begins to show the potential of this company. We updated coverage of Corcel with a target price of 10.92p and a **Conviction Buy** stance.

*Table: Financial overview. Source: Company accounts & Align Research*

Year to end June	2020A	2021A	2022E	2023E
Revenue (£'000)	-	-	2,000	4,800
PTP (£'000)	(1,482)	(1,227)	600	2,600
EPS (p)	(2)	(1)	0.15	0.56

## CONVICTION BUY

Price target – 10.92p



### Key data

EPIC	CRCL
Share price	1.35p
52 week high/low	2.40p/1.02p
Listing	AIM
Shares in issue	400.56m
Market Cap	£5.4m
Sector	Mining

### 12 month share price chart



### Analyst details

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## Business overview

### Corcel Operations

Corcel PLC is an established AIM-listed resources company with a growth strategy focused on exploring for battery metals and developing flexible energy storage and production assets. The company is seeking to use energy generation and storage revenues to support corporate overheads as well as to finance the further development of its blue-sky battery metal mining opportunities.

- **Mambare Nickel/Cobalt Deposit** – The company has a 41% interest in this project in SE Papua New Guinea (PNG) which lies 90km NE of Port Moresby. Mambare is one of the world's largest laterite deposits and has seen a substantial amount of historic exploration. **Even so, just 3% of the main target has been drill tested, creating very substantial upside potential.** Currently, an application for a Mining Lease is underway which is expected to enable progression of the planned direct shipping ore (DSO) operation.

- **Wowo Gap Nickel/Cobalt Deposit** – Corcel has a 100% interest in this project which is also located in Papua New Guinea and provides obvious synergies with Mambare, where a DSO operation has also been contemplated. **The board sees the opportunity to create a significant regional nickel-cobalt player with these two large scale projects at a time when the nickel market is going through accelerated structural change driven long term by decarbonisation and short term by the isolation of Russia, one of the world's larger Nickel producers. The company has recently announced that current spot nickel prices are many multiples of the assumptions underpinning its base case economics and the Align house view is that nickel may well stay elevated to the company's benefit.**

- **Dempster Vanadium Project** – The company also has a 50% interest in this vanadium project that is located in the Yukon in Canada. This project has more than 20km of potential strike where the target is vanadium black shale deposits which are similar to projects being developed in Nevada. **Recent exploration has been highly encouraging and looks like it will generate accessible drill targets.**

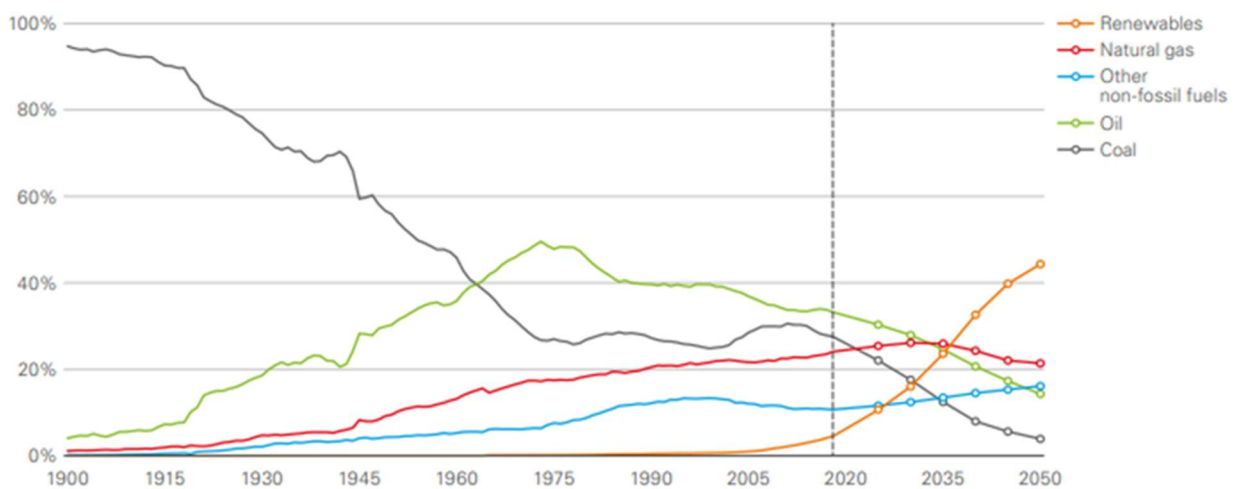
- **Flexible Grid Solutions (FGS)** – This business unit is a developer of UK based energy storage and flexible power generation projects. As the energy mix in the UK transitions from base load generation provided by coal, other fossil fuel and nuclear power generation to become largely reliant on renewables, there are significant opportunities in this space. Such investments neatly fit in with the UK's Net Zero 2050 initiative which concerns greenhouse gas emissions and increasing pressure on the UK grid. **Corcel has a 100% interest in the Burwell Battery Storage - a 50MW project (100MW grid connection) in Cambridgeshire which the team are negotiating with the landlord with a view to moving to shovel ready status despite congestion in the local grid and the requirement for grid upgrade works. In 2021 the company acquired interests in two gas peaker projects, now owning 40% of the Tring Road 50MW site and having rights over 100% of the Avonmouth 50MW installation. Both of these gas peaker opportunities are fully shovel ready and in the process of being funded, and if successfully completed add significant immediate impact to the FGS portfolio.**



*Burwell substation, the location one of the company's FGS projects. Source: Company*

## Climate change and energy transition

Climate change is considered to be the major environmental challenge facing the world. The Paris Agreement was designed to control and reduce greenhouse gas emissions and became the centrepiece of the 21<sup>st</sup> Conference of the Parties (COP21) to the United Nations Framework Convention on Climate Change (UNFCCC) which took place in Paris in December 2015. The event was a watershed moment in the way in which the world interacts with the Earth's atmosphere. But it really represented just the first step in a long process designed to hold countries accountable for their emissions of any CO<sub>2</sub>, methane, and other greenhouse gases. Today, CO<sub>2</sub> emissions are rapidly becoming a significant liability for any emitter.



*Low carbon transition – shares of primary energy in BP's rapid scenario.*

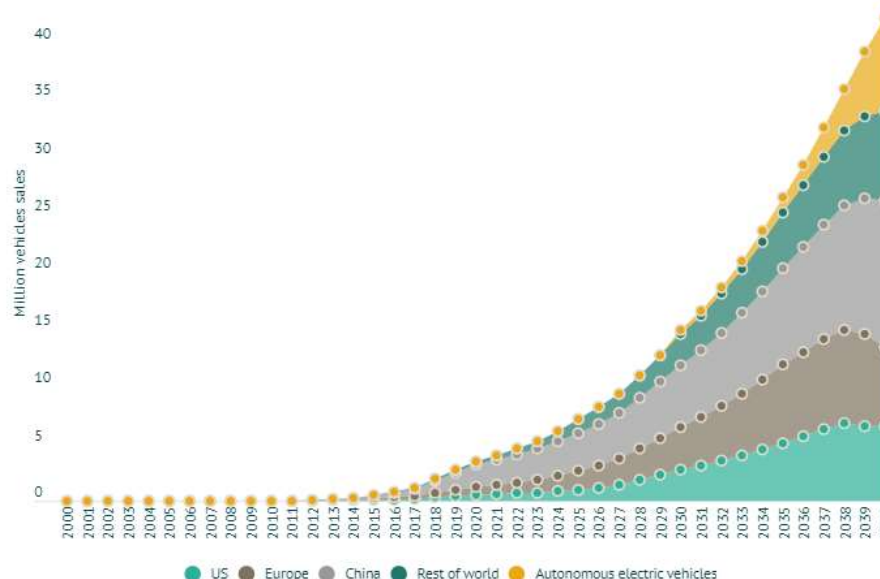
*Source: BP Energy Outlook 2020*

The transition to a low carbon world has begun in earnest. Renewable energy is set to play an increasingly important role in meeting the planet's energy needs. **The Energy Research & Consultancy group Wood Mackenzie reckons that by 2032, renewables will overtake conventional power sources, making them the world's fast-growing energy source.** The electrification of transport, homes and industry will require substantial investment into electricity generation for decades. Technological advances mean that the cost of developing renewables has been falling significantly, resulting in renewables like wind and solar becoming cheaper sources of electricity than those generated by fossil fuels in most parts of the world. **But to be a viable and stable source of energy for the grid, these renewable sources must be paired with flexible energy assets.**

The international rise of batteries to support the inevitable variable production of both wind and solar has been a big talking point. This requires the whole gambit of grid balancing, standby power, flexibility and energy storage. **The switch to renewables and changing demand habits are rapidly resulting in energy storage being seen as the next major frontier in electrification.** Battery storage can effectively integrate an increased share of solar and wind renewables in power systems around the world. Storage batteries offer a viable solution for storing intermittent energy supplies associated with renewable energy and so it is of little surprise to see that the global energy storage market is growing fast. Back home, the UK is having an energy crisis, largely caused by the ongoing reduction in baseload power amongst the penetration of intermittent renewables.

## Battery metals

**Mass electric vehicle (EV) adoption is now becoming reality.** Electric vehicles are here to stay. Range, cost competitiveness and availability of charging stations are improving fast and if you purchase a car now you have multiple electric choices available from all the large manufacturers including Porsche, Mercedes and BMW. Governments around the world are ushering in regulations that favour EV use. This is being led by the UK government, which is now set to ban the sale of new petrol and diesel cars by 2030 in its plan to accelerate the switch to EVs.



*Electric vehicle sales forecast to 2040. Source: Wood Mackenzie*

**Critical battery metals include lithium, nickel, cobalt and vanadium and these are impacted positively by both the recent conflict with Russia and an expected structural supply crunch (originally expected from mid-2020s onwards).** Below we investigate the three battery metals which Corcel currently offers exposure to.

### Nickel

Nickel is seen as one of the critical metals for use in batteries as its inclusion facilitates the key metric of energy density. Importantly, nickel also comes at a much lower relative cost than other effective battery metals. In the past, the use of batteries was confined to consumer electronic products, but the rapid rise in EVs, which require much larger batteries, has focused increasing attention on nickel in order to provide the desired vehicle range. Nickel markets are currently in meltdown with a suspension of trading last week. **The Align house view is that this is an acceleration of the significant structural increase widely expected by industry analysts, driven by both the EV and energy storage markets.**

Moving forward, it does increasingly seem that the prospects for nickel will be driven by EVs which have already and look set to continue to remodel demand. Concerns about pollution and environmental benefits are creating a dramatic increase in the adoption of EVs globally. To illustrate, even last week in London SUV tires were being bled in protest against climate change. Rapidly rising demand has also been fuelled by green legislation being embraced by many countries including the UK, India, Germany, France, Norway and China. **Morgan Stanley believes that by 2050, four out of every five cars sold will be a battery-electric vehicle.** The fact that Russia is a major supplier of nickel which may well now be cut-off from international markets clearly is a huge supply shock. This, alongside recognition of nickel's importance as a battery metal in EVs and energy storage applications, as well as increased demand in China, has led to all-time record highs in the nickel market. Additionally, electric vehicle manufacturers have begun acquiring upstream deposits and executing offtake agreements. The Russian-Ukraine conflict has resulted in a truly dramatic rise in the nickel price with three-month contract prices more than doubling to over US\$100,000 per ton.

## Cobalt

There is no doubt that cobalt is a vital component of lithium-ion batteries in EVs as it allows the structural integrity of the battery cathodes to be maintained. Cobalt's key role is to provide much needed stability to energy dense batteries giving them the required stability and longer life spans. It is cobalt's high energy density that allows batteries to be both energy dense and lightweight.

**Cobalt is the key to battery stability and so far, no viable alternative exists. The metal is also used in smart phones and laptop batteries as well as in EVs where each vehicle requires 6-12kg of the material.** In all, around 50% of cobalt produced around the world is used for rechargeable batteries. Cobalt is usually mined as a by-product of copper and nickel mining, which just serves to make it harder to obtain in quantity.

For all of the above reasons, Cobalt is essential for EV manufacturers and Tesla agreed to buy 6,000tpa from Glencore a few months ago. A report by researcher Benchmark Mineral Intelligence published in November 2020 forecast that the battery industry will need a further 100,000t of cobalt by 2025. **The researcher reckons that in 2020, 57% of the world's cobalt demand came from the battery sector but now sees that rising to 72% over the next five years.**

## Vanadium

Demand for vanadium looks as though it could rise substantially due to the advancement of vanadium redox flow battery (VRFB) technology. In a nutshell, VRFBs store energy in a liquid vanadium electrolyte (which makes up to 80% of the VRFB) that never degrades. **This looks like the ultimate green energy storage system as the hardware can be recycled whilst the vanadium can be used repeatedly.**

VRFBs are fast being heralded as the most sustainable and advanced technology available for large scale energy storage for electricity generated by solar and wind. **These redox flow batteries can discharge and recharge up to 20,000 times with little performance loss.** In fact, VRFBs do seem to offer the potential to give rise to a true revolution in power grids and brand-new applications based on sustainable energy storage. The real key to the full-scale commercialisation of this green energy storage technology looks as though it hinges on having a sustainable supply of vanadium.

**For these sorts of reasons, the World Bank in a 2019 report on battery metals said that vanadium would be one of the top five minerals and expected that there will be a significant increase in demand by 2050 on the back of a forecast 500% increase in demand for battery metals.** This is all to meet the mushrooming demand for clean energy technologies.



## Corporate Background

Corcel plc, previously called Regency Mines plc, was founded in 2004 and listed in London in 2005. On flotation, Regency had a number of option agreements over exploration licences applications in Australia. Soon after listing, Regency acquired the Mt Ida iron ore project, north-west of Kalgoorlie in Western Australia, which formed the basis of the AIM-quoted Red Rock Resources when it was spun-off in 2005.

In 2006, the company acquired a 75% interest in the 584km<sup>2</sup> nickel/cobalt exploration interest covering the Mambare Plateau in Papua New Guinea, which it subsequently increased to 100%. The decline in the nickel price in 2008 led management to move the focus of its exploration efforts to nickel sulphide opportunities in Western Australia, acquiring several prospective tenements in 2009.

One of the keys to unlocking the value at Mambare has always been to have access to an economic beneficiation technology. The company's search led to a 50:50 joint venture being agreed in 2009 with Direct Nickel, a company which had the requisite nickel treatment technology. The joint venture company has a 100% interest in Mambare along with a licence to use DNI's technology. **In 2012, the maiden JORC-compliant Mineral Resource Estimate for Mambare was announced together with the successful installation and testing of Direct Nickel's pilot plant in Perth, Australia.**

Over the years, the company has been involved in Australian exploration interests in the Fraser Range, onshore oil interests in the UK near Gatwick Airport (Horse Hill Developments - HDDL), a US onshore West Virginia shallow-oil project, the Motzfeldt Multi-Element Project in Greenland and the Rosa metallurgical coal mine in Alabama, USA amongst others.

In 2017, the interests in the HDDL were sold, netting the company a profit of around £1.8 million. These funds were invested in the then newly launched Battery and Storage Technologies business unit. **Since then, Corcel acquired a 50% interest in the Dempster North American vanadium project in early 2019.**

A strategic review in 2019 resulted in the company being refocused around mineral interests in nickel and vanadium alongside existing business in UK flexible energy assets. The interests in metallurgical coal and natural gas were held as non-core assets for future realisation.

In December 2019, the company's energy storage business seemed to come of age with the execution of an MOU with ion Ventures with a view to partnering up with the company to identify commercially attractive projects, securing funding and moving to cash flow. Straight after this move there was news that James Parsons had joined the board and there was a 1-for-100 consolidation to make the stock more attractive to investors.

The name was changed in August 2020 to Corcel as part of a larger rebranding effort, which better reflected the company's strategy to develop its businesses across the battery metals exploration and flexible grid solutions space.

Scott and James, CEO and Chairman respectively, are the architects of this new strategy which appears to have correctly called the acceleration of some of the big changes which are happening in the world today. Both Executives bring significant experience on AIM and in growing and developing microcap stocks.

October 2021 saw the completion of the acquisition of a 100% interest in the Wowo Gap Nickel Cobalt Project. **This effectively doubled the scale of Corcel's nickel and cobalt business for a fraction of the historic cost of development at the project. Following this move the near-term priorities included resource updates, exploring synergies with the Mambare project, and the early securing of long-term shipping and offtake arrangements.**

## Operations

Corcel has a clear growth strategy focused on battery metals exploration and flexible energy asset development. The company is seeking to use energy generation and storage to support corporate overheads as well as to finance the further development of its blue-sky battery metal mining opportunities.

## Battery Metals Exploration

Corcel identifies, evaluates and develops mineral exploration projects in critical battery metals at a number of projects around the world. **The forecast rapid increase in demand for batteries for EVs etc. is pointing towards a looming supply crunch for metals such as nickel, cobalt and vanadium.** The company has worked hard to position itself in these key battery metals ahead of these expected structural price rises, perhaps now paying off years ahead of schedule.

### Mambare Nickel/Cobalt Project (41%)

**The Mambare Plateau in Papua New Guinea represents one of the world's largest laterite nickel/cobalt deposits.** The project is located 90 kilometres inland north-east of Port Moresby, near the village of Kokoda. This joint venture company has a 100% interest in licence EL1390 which covers 256km<sup>2</sup>, with a nickel-cobalt laterite deposit in eastern PNG. Mambare is 100% owned by Oro Nickel Vanuatu, which is a joint venture between Corcel 41% and Battery Metals Pty Ltd 59%. The project is licenced to use Direct Nickel's revolutionary nickel laterite treatment process.



*Mambare nickel laterite project. Source: Company*

On the Mambare Plateau, the weathered ultramafic bedrock has formed significant layers of nickel and cobalt bearing lateritic and saprolitic material which are overlain by volcanic ash up to six metres in thickness. Laterites are rich in iron and aluminium and are a rusty-red colour due to the high iron oxide content and are caused by tropical weathering. Saprolites are also chemically weathered rocks but form a lower zone and represent deep weathering of the bedrock surface.



## Exploration

Mambare was explored in the 1960s with fairly good results. Between 1960-71, there were a total of five exploration phases conducted by different operators totalling 240 auger holes, 56 test pits and one costean (a small pit through the superficial deposits down to solid rock). In 1999, Anaconda Nickel Ltd carried out data compilation of the previous work over 158km<sup>2</sup> of Mambare plateau.

In 2006, Regency acquired a 75% interest in a 584km<sup>2</sup> exploration licence from a private entity for £45,000. Regency went on to commence the first phase drilling programme on 100 metre centres at the southern end of the licence area. A total of more than forty drill holes were completed by hydraulic auger drill and wacker drill.

The 2008-09 period saw Regency gain a 100% interest in Mambare and successfully conclude the first phase of the exploration and drilling programme, producing 4,000 metres of drill core from 335 drill holes. One of the keys to unlocking the value within Mambare has always been access to mineral processing technology which was both economical and provided decent levels of recovery. To achieve this, the company entered into a 50:50 joint venture agreement with Direct Nickel Pty Ltd (DNI).

The DNI process is specifically designed to process nickel laterites and has been tested at the pilot plant stage in Perth. The process is sustainable and cost effective using nitric acid, with 95% of this acid being recycled. As well as having very reasonable operating costs, capital expenditure is also low by industry standards and in particular scalable; not requiring expensive high atmospheric pressure tanks. **The Mambare project is licensed to use DNI's revolutionary nickel laterite treatment process up to a production capacity of 40,000tpa.**

The then joint venture partners were committed to the development of Mambare as well as piloting and applying DNI's advanced nickel-cobalt extraction technology. In 2010-11, the second phase of the exploration and drilling programme began, which comprised of 220 holes for a total of 4,000 metres. Also, during this period, an exploration licence application was filed to explore the region for geothermal targets in order to meet the potential power requirements of the project. The team believe that the combination of green geothermal energy and a world-class nickel laterite project coupled with DNI's technology could result in the potential project operating in the lowest quartile of world nickel production cash costs.

## JORC-compliant resource

**The extensive drilling programme allowed the joint venture partners to announce a JORC-compliant Indicated and Inferred Mineral Resource Estimate (MRE) in 2012 of 162.5Mt @ 0.94% nickel and 0.09% cobalt giving 1.53Mt of contained nickel at a 0.60% nickel cut-off grade, which was announced in April/May 2012. This included 47Mt @ 1.23% nickel at a 1% cut-off grade.**

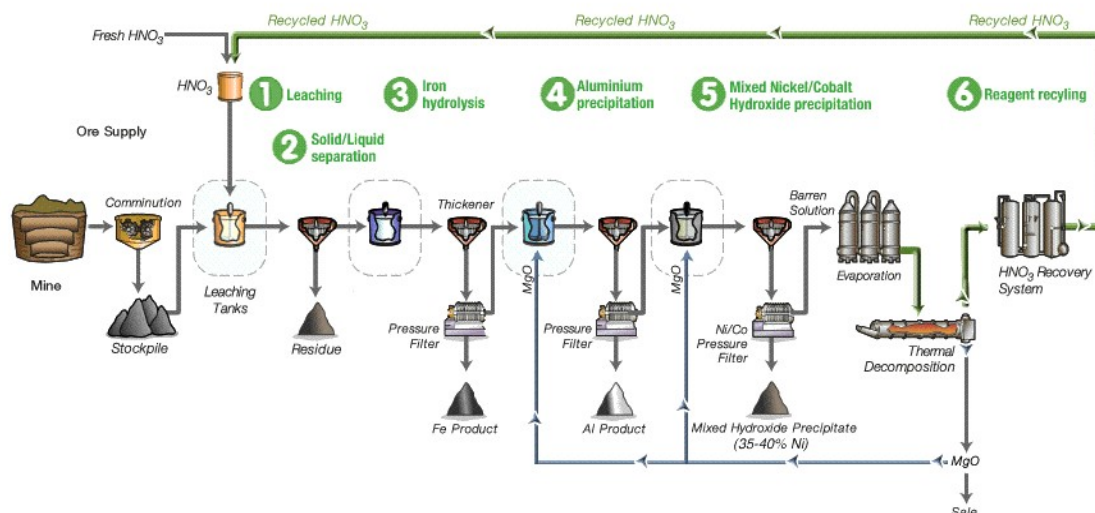
	Mt	Nickel %	Cobalt %
Indicated	3.3	1.00%	0.07%
Inferred	159.2	0.94%	0.09%
<b>Total</b>	<b>162.5</b>	<b>0.94%</b>	<b>0.09%</b>
<b>Contained metal (Kt)</b>		<b>1,528</b>	<b>146.25</b>

*JORC-compliant MRE for Mambare Nickel/Cobalt Project June 2012. Source: Company*

In all, there have been 477 core holes (average 16.3m depth) 297 auger holes, 45 wacker holes, 61 test pits and 1 costean drilled and dug over the years. In addition, there has been extensive ground mag, ground penetrating radar, airborne mag & radiometrics analysis, along with a satellite topography survey. **The resource at Mambare could be far, far larger than this MRE outlines as it was calculated primarily over the flank of the plateau which includes just 2km<sup>2</sup> of the 80km<sup>2</sup> of the plateau, 3% of the main target of the project (which has been drilled tested).**

## Direct Nickel production technology

In the past, the company's joint venture partner at Mambare was Direct Nickel. Now the joint venture partner is Battery Metals Pty Limited (BMA) which is decedent of sorts from Direct Nickel and has a proven DNi Process™ for extracting valuable minerals from laterites. The DNi Process™ is protected by registered patents and has been demonstrated to have both low opex and capex. The key to the process is the use of nitric acid as the leaching agent.



*Simplified schematic diagram of the Direct Nickel Process. Source: Direct Nickel*

The DNi Process™ is an atmospheric hydrometallurgical route designed to treat all types of nickel laterite ores in a single flow sheet to produce a number of final saleable products. Direct Nickel believes that the DNi Process™ is the only process available which can treat the whole limonite/saprolite profile (from 90% limonite to 100% saprolite) enabling maximum economic recovery. Limonite refers to a type of laterites (also known as oxide type) which are highly enriched in iron due to very strong leaching of magnesium and silica.

In early 2020, the Mambare partners amended the JV agreement to help drive forward future activities and to reflect work done by BMA during the previous year. As a result, Corcel now has a revised 41% project interest, with BMA holding the remaining 59% via a 100% holding in Oro Nickel. Should a mining lease be awarded over the Mambare project, or at least to be recommended by the relevant PNG government agency by November 2021, then BMA's interest will increase to 65% and Corcel's holding would drop to 35% (At the time of writing this has not appeared to have occurred). The revised agreement required Corcel to pay BMA US\$50,000 in cash along with issuing 4,909,610 new ordinary shares and 4,909,610 warrants (exercisable at 1.245p per share).

## Environmental Permit

In May 2021, the joint venture partners in the Mambare Nickel Cobalt Project received the approval of the Environmental Permit Ep-L2 (708), thus authorising the excavation of laterite ore and DSO operations at Mambare. The approval is conditional, as is normal in PNG, on the activity complying with the Environmental Act 2000 and its policy objectives, and on certain further plans and submissions being completed within three months. This process took a while as the documents were formally lodged with the PNG Government way back in December 2018. **This milestone represents one of the final hurdles before the award of a Mining Lease.**

## Wowo Gap Nickel - Cobalt Project (100%)

Wowo Gap is located at the south-eastern end of the Papuan Ultramafic Belt, a complex of peridotite, pyroxenite and gabbro that forms the prominent east-west trending Didana Range. The project hosts 125Mt @ 1.06% nickel and 0.07% cobalt Indicated Resource Estimate (JORC 2004) within the laterite profile based on drilling along the 12-kilometre strike length. The project lies roughly 160km east of Port Moresby.

Corcel is focused on resource development at the project's main tenement EL1165 which consists of 28 Sub Blocks totalling 94.4km<sup>2</sup> following the acquisition of a 100% interest in this project in October 2021.

At Wowo Gap, the nickel mineralisation is associated with a laterite weathering profile which has developed over the underlying ultramafic geology. This has served to create an enrichment of nickel, cobalt, iron, chromium, magnesium and magnesite. Here the complete lateritic profile has been preserved, with partial truncation associated with recent drainage systems. The depth of lateritic weathering varies according to rock type and the degree that the rocks have been broken down into fragments. The lateritic profile is typically 10-15m thick, and more than 20m in some places.

Over the years this project has attracted a lot of interest. Exploration at the project dates back to the 1950s and has consisted of multiple drilling programmes, including diamond drilling, wacker holes and ground penetrating radar activities.

In 2008, RMI, the previous owners, completed a Scoping Study that indicated that the development of this project would cost US\$626 – 860 million. The study was undertaken by process and metallurgical engineering company Simulus which chose the production of a mixed hydroxide precipitate via heap leaching as being the most favourable out of nine possible options. **An independent valuation of the project in 2009 showed a preferred valuation of A\$168 million which was determined using peer comparisons with other similar lateritic nickel/cobalt projects, mainly in PNG, nearby Caledonia and Australia.**

In 2010, an extensive drilling programme commenced to define the lateritic nickel resources at a drill hole spacing of 200m x 200m along the 12km strike of the project to determine an MRE (JORC 2004), although this has not been independently verified on behalf of Corcel and is not in accordance with JORC 2012. Following on from that in 2014, RMI announced a DSO Exploration Target of 40 - 60Mt at 1.6 -1.8% nickel.

	Mt	Nickel %	Cobalt %
Indicated	72	1.03%	0.07%
Inferred	53	1.09%	0.06%
Total	125	1.06%	0.07%
<b>Contained metal (Kt)</b>		<b>1,325</b>	<b>83</b>

*Wowo Gap MRE (JORC 2004) dated 2011. Source: Company*

Wowo Gap lies 150km SE of Mambare and is a similar deposit with a slightly higher grade and clear synergies between the two projects. Discussions are ongoing with the partner on Mambare, BMA, to explore potential PNG consolidation with the possibility of creating a significant regional nickel player. **In the end, a conclusion of this transaction could result in Corcel becoming a leading PNG exploration company with very significant scale in the region and the ability to get things done with the PNG government and mining authorities.**



## Direct Shipping Ore

At Mambare, Oro Nickel is currently progressing a plan to upgrade the existing exploration licence to a Mining Lease based on plans for a twenty year DSO operation. Such an operation would be fairly simple as it purely consists of excavating, drying and exporting raw ore, and so would not involve any processing plant, chemicals, pipeline or tailings.

The amended JV agreement provided a big incentive for BMA to rapidly progress the award of a Mining Lease for Mambare. In early 2020, Corcel reported that a 230km line cutting exercise had been completed and that a ground penetrating radar (GPR) exploration programme was underway that was targeting 200km of surveys. At that time, it was reported that the Environmental Permit application had been submitted, the Exploration Lease renewal process was underway and also that the Mining Lease application material was being finalised. All of this work was in preparation for the commencement of a DSO operation at Mambare which would allow Corcel to benefit from the strongly growing demand for battery metals.

In the end, the application to renew the EL1390 Exploration Licences, encompassing the project, was submitted to the PNG authorities in March 2019 and is awaiting imminent renewal, with delays considered very normal in PNG. In July 2020, Corcel was able to announce the result of a Warden's Hearing for Mambare, which represents an important milestone in the process of applying for a Mining Lease to conduct a DSO operation over a portion of this vast nickel-cobalt project.

January 2022 saw Corcel take a big step forward towards unlocking the value from its two largest assets. **News was that the company had entered into a non-binding MoU with Shandong New Powder COSMO AM&T (NPC) for the supply of nickel from Corcel's Mambare and Wowo Gap Nickel Projects. NPC is looking to buy up to 0.5Mt per annum of DSO nickel products from Corcel's two nickel projects.** This deal is being negotiated with a powerful Chinese based group NPC, a joint venture between Sentient Global Resources Funds, Dougide Group and COSMO AM&T Co. Ltd, which focuses on producing lithium battery cathode materials. NPC owns and operates a 5,000tpa cathode plant in China and has plans to invest US\$60 million expanding to 16 production lines, which will quadruple production capacity to 20,000tpa this year.

**As far as the agreement is concerned, a binding offtake agreement is being negotiated for the purchase of nickel by NPC with an initial term of 3 – 5 years.** The price paid for the nickel DSO products will be based on the underlying commodity prices on the LME or similar, of course as well as reflecting the purity and specification. The MoU has a 12-month term which can be extended by mutual consent. Moving ahead, NPC and Corcel will be working on establishing product specifications to be used in the offtake agreement. Such work may require additional work to be conducted on the existing feasibility studies along with technical analysis. **Importantly, the two partners will also be working together on sourcing the finance to take Corcel's two nickel projects into production.**

Recent days have seen the suspension in nickel market trading at the London Metal Exchange following a 250% surge in prices over 7-8<sup>th</sup> March, with intraday trading of over \$100,000 per ton recorded. In its analysis, the company has historically used a US\$18,500/t price assumption in its base case modelling for its nickel projects in PNG. In an announcement post the suspension of nickel trading at the LME, the board has pointed out that they now see significant additional core net asset value from Corcel's upstream Battery Metal portfolio. **It does clearly seem that the ongoing turmoil and extended volatility in global nickel markets will serve to significantly enhance the business case for taking both Mambare and Wowo Gap into DSO production as quickly as possible.**

## Dempster Vanadium Project (Yukon, Canada)

The Dempster Vanadium Project is located in Yukon, Canada and lies some 65km north of the Eagle River Lodge. There is excellent infrastructure access with the whole project lying within easy access of the Dempster highway. **In all, the project includes 196 claims over an area of 40.96km<sup>2</sup>.** Corcel has a 50% interest which was acquired in January 2019 for C\$450,000, in a deal which saw the company effectively acquiring this interest for shares.

The project covers a mineralised trend which has over 20km of potential strike. The primary exploration target is vanadium in black shales which are termed Vanadium-rich Black Shale, or BSV deposits, which represent regional scale contact between two distinct sedimentary formations. In these types of deposits, the BSV horizon lies at the bottom of the upper formation and at the base of the BSV horizon is a discrete layer of metal-bearing, organic-rich black shale.

Hole no	From m	Interval <sup>1</sup>	V <sub>2</sub> O <sub>5</sub> <sup>2</sup> %	Comments
DV-01	62.63 95.96	3.67 1.77	0.40 0.15	Missed NiMo target
DV-02	32.18	5.32	0.47	Short hole stopped short of target horizon
DV-03	77.73	12.42	0.07	
DV-04	-	-	-	Lost hole
DV05	66.30	4.20	0.26	
DV-06	79.79 114.56	1.25 4.38	0.54 0.22	
DV-07	33.56	4.19	0.53	

<sup>1</sup> all intersections open up and down hole so the V<sub>2</sub>O<sub>5</sub> intervals are potentially wider than reported

<sup>2</sup> vanadium ppm converted to V<sub>2</sub>O<sub>5</sub> by a factor of 1.7852

*Dempster Vanadium Property – drill intersection reported by Southampton Ventures. Source: Company announcement (Mark Fekete and Marty Huber, 2020, Exploration Proposal 2020)*

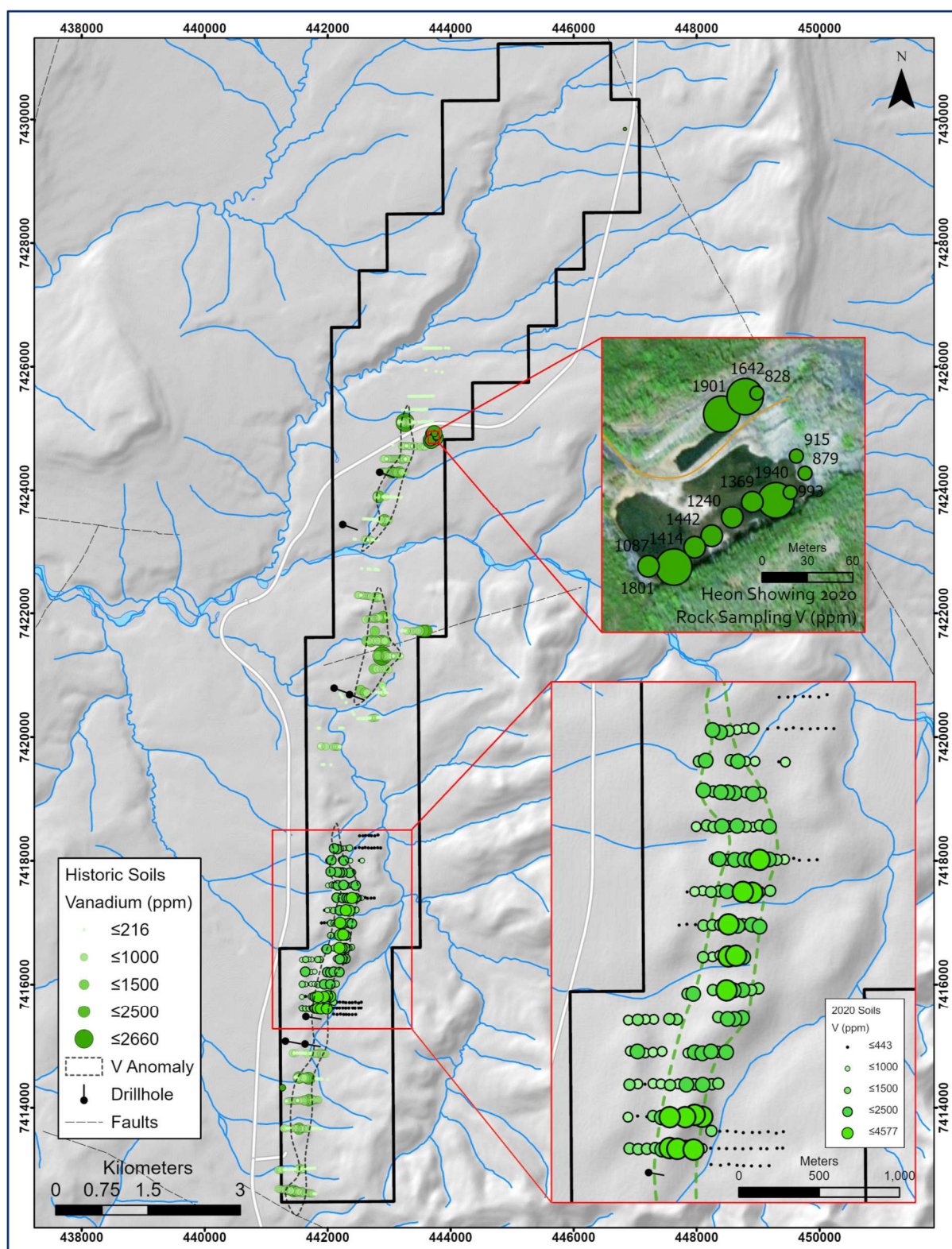
BSV deposits are suitable for low-cost mining/processing and at the moment similar sorts of plays are being developed in Nevada, USA, by Cellcube, Prophecy and First Vanadium. Work in the past at Dempster had focused on the nickel potential and largely ignored the vanadium. A chance discovery led to geochemical sampling followed by the drilling of 7 diamond drill holes for 720.9m in 2006. These showed that the BSV horizon was broadly continuous within the property with minor offsets to vertical faults.

Region	Company	Prospect	Hole no	From m	Interval m	Weighted average V <sub>2</sub> O <sub>5</sub> %	Reference
NE Yukon	DVY196	Dempster	DV07-10	12.34	90.16	0.39	Fekete & Huber 2019
Nevada	First Vanadium	Carlin	RCC18-46	0.00	73.15	0.60	First Vanadium, 2019
Nevada	Prophecy	Gibellini	GIVC-5	2.13	23.17	0.32	Orbock, 2017
Nevada	Cell-Cube	Bisconi- McKay	BMK 05-02	7.01	98.15	0.53	Ullmer, 2016
Nevada	Victory	Iron Point	VM-26i	5.00	37.00	0.55	Victory. 2019
Northwest Territories	Vanadium North	Val	na	na	52.50	0.42	Regency, 2019

*Dempster Vanadium Property – comparison with similar projects. Source: Company announcement (Mark Fekete and Marty Huber, 2020, Exploration Proposal 2020)*

The work on the Dempster Vanadium project conducted to date, as outlined in a report by Breakaway Exploration Management Inc., has confirmed that the shales underlying the property contain significant vanadium over broad stratigraphic intervals. The best results include 0.39% V<sub>2</sub>O<sub>5</sub> over 75.9m, 0.32% V<sub>2</sub>O<sub>5</sub> over 38.2m and 0.39% V<sub>2</sub>O<sub>5</sub> over 90.16m.

These intersections are comparable to grades and thicknesses for similar deposits currently being explored both in Canada and the United States and demonstrate the potential to host an economic deposit of vanadium.



*Soil and rock chip sampling results from the Dempster Vanadium Project. Source: Company*



## Recent exploration

The summer 2020 exploration programme was planned to increase the understanding of the geology at the site and included soil geochemical surveys to define drill targets for future field seasons. Some of the work on this project was undertaken in collaboration with a PhD candidate from McGill University who collected further data on metal enrichment, which contributed to an improved geological model.

Delays at Canadian labs, mostly due to COVID-19, meant that the results from the 2020 exploration programme were not announced until January 2021. In all, some 14 rock and 179 soil samples were collected during this work programme. **The rock samples yielded anomalous vanadium values in the 0.12 - 0.35%  $V_2O_5$  range, with 13 out of the 14 also returning anomalous zinc and silver values.** Soil samples returned vanadium values up to 0.82%  $V_2O_5$  with 18 samples equal or better than 0.40%  $V_2O_5$ . All this is shown in the map overleaf.

This latest rock sampling around the Héon indicated the presence and grade of the Canol Formation and has convincingly demonstrated that soil geochemistry is an effective tool to trace the vanadium bearing Canol black shales. It is noticeable that grades are higher than earlier reported drill core samples, which can be put down to the weathered rock being relatively metal-enriched. In addition, these latest results seem to show that Canol outcrops on surface further west than is shown on the government's geological maps.

These are excellent results, which indicated the presence and grade of the Canol Formation. Planning for the next stages of the exploration programme is underway and it is expected that the team will have multiple accessible targets for near term drilling. Work will also involve extending the soil geochemistry and gaining a five-year operating licence for more advanced exploration, with the goal of targeting an initial NI 43-101 resource. Planning is now underway for a further exploration campaign.

## Flexible Grid Solutions

**Corcel is establishing itself as a developer of UK based energy storage and flexible power generation projects.** There are impressive opportunities arising in providing flexible grid solutions (FGS) in the UK as the energy mix transitions from base load generation provided by coal and nuclear power generation to become largely reliant on renewables. The company is seeking to invest in the projects and infrastructure required to provide critical services to the UK grid for flexible power generation and storage to smooth grid volatility and maintain system stability.

**Such investments neatly fit in with the UK's Net Zero 2050 initiative which concerns greenhouse gas emissions and increasing pressure on the UK grid.** Moving ahead, flexible energy production and storage capacity is vital to balance growing renewable power generation.

**The board plans that such investments in renewable energy generation and energy storage projects will become the cash generative engine that will not only help to pay the company's overheads, but also provide internally generated funds that can further finance and develop the blue-sky battery metal mining ambitions.**

### Strategic partnership

Corcel has a strategic partnership with ion Ventures Ltd, an investor in and also a developer of energy storage and flexibility assets. Ion's business model involves originating and developing energy storage projects as well as advising international energy developers. Following financial close for individual projects, ion generates earnings through yield from its carried interest and management fees earned by having a continuing role as a project manager and operator of assets. The ideal project is one with a good quick grid connection and a decent lease on the site.

With its strategy of focusing on opportunities in the transition to a low carbon world, the team at ion is seeking to develop a large asset base and provide solutions that maximise the returns. Nowadays, this company prefers taking equity stakes in projects rather than fees. In this way ion is seeking to establish a long stream of growing and reliable earnings stretching many years into the future. Basically, ion is acting as a technical consultant to Corcel and sharing its impressive project pipeline of energy storage and distributed energy projects in the UK with the Company.

### Burwell Battery Storage Project

**Corcel's initial FGS project is the 100%-owned Burwell Project, a 50MW (100MW grid connection) project which is located outside of the town of Burwell in Cambridgeshire.** The company has the core ingredients, such as the grid connection already in place and is finalising the land lease and planning consent. The grid connection is a 100MW 132kV connection at the substation at Burwell and there are multiple expansion options including solar and storage.

**The Burwell Energy Storage project is expected to move forward once grid congestion issues are worked out at the local substation. Once done, Corcel intends to enter the project in the capacity market, providing a fixed and guaranteed source of revenue over an initial 15-year period.** This project is designed to be a virtual power platform with the aim of delivering 100% renewable energy through real-time connectivity between energy source, storage flexibility provided by batteries and demand response services. **Once constructed, the Burwell project will be a very sizeable part of the energy network in the Cambridge area and will generate significant cashflows for Corcel in the form of fees and a likely ongoing carry.**

In December 2020, investors learnt that Burwell's project economic review had been completed with positive results. This review was based on current revenue projections provided by potential project aggregator/trader Limejump, along with current capital cost estimates which thoroughly demonstrated that the 50MW battery storage project at Burwell is highly robust from an economic standpoint. On the back of this favourable analysis, the project simply awaits news on local grid congestion issues, and once sorted is expected to move to shovel ready status, then financial close and ultimately construction and energisation. The project is expected to be funded through a Special Purpose Vehicle (SPV) structure, with Corcel taking a development fee and likely a free carry. In late 2020 Corcel acquired the remaining 50% interest in Weirs Drove Development Limited (WDD) and hence become the 100% owner of the Burwell Project for £90,000 in shares and some additional success based earn-outs for the sellers.

### **Tring Road Gas Peaker Project**

Early May 2021 saw the company acquiring a 40% interest in the shovel ready Tring Road 50MW gas peaking project outside of Aylesbury from Arlington Energy Limited (AE). Gas peaking project plants are natural gas burning power plants which run when there is either high demand for electricity or particularly low or intermittent production from renewables. Further to this, Corcel also intends to look to co-develop and fund additional flexible energy assets with AE, which is expected to cover the full gambit of energy storage, gas peaking and solar projects in the UK.

Corcel and AE have agreed to take the Tring Road project through to financial close, currently targeted as early 2022. The purchase consideration of £400k was satisfied by £150k in cash and £250k in shares at roughly 2.08p each, with a 6-month lock in. **This will result in AE becoming the second industry cornerstone investor in the company, alongside the Chinese owned Sinom Group.**

Corcel and AE have formed an industry standard joint venture to operate the project and plan to jointly arrange the funding for the project over the coming months, targeting financial close in early 2022. AE is expected fall back on their expertise to lead the construction and ultimately operation of the project. The joint venture partners intend to procure a development fee at financial close as well as an equity carry as part of the ultimate arrangements negotiated. On top of this, Corcel expects to get a 3% fee covering all equity funding arranged.

Tring Road seems to have all the makings of becoming a cracking asset in our view, being a 50MW gas peaking project, which lies just 40 miles NW of London. **Importantly, the project is shovel ready. Firstly, a 50MW grid connection has already been secured which will allow electricity to be exported.** Secondly, a binding option to lease has been signed with the landowner. Thirdly, planning permission has been secured. **As a result of Corcel's comprehensive due diligence on the project, third party estimates have suggested annual gross margins of between £72-92k per MW/per annum when the project is operational.**



## Avonmouth Gas Peaker Project

Also in May 2021, the company gained the exclusive rights to acquire a 100% interest in the shovel ready Avonmouth 50MW gas peaking project outside of Bristol from FPC Electric Land Limited (Electric Land) plus an additional 15MW of grid capacity. **This takes Corcel's current pipeline of projects up to a very impressive 165MW.**

The company has acquired exclusivity over a 100% interest in the 50MW Avonmouth gas peaking project from Electric Land. Consideration for the acquisition is £72,000 payable immediately, and a further £72,000 payable at financial close: roughly equating to Electric Land's costs to date. Corcel will also be entering into a formal agreement with Electric Land on a 30-year land lease over the project site.

In addition, Corcel has also acquired the rights over an additional 15MW of potential grid connection capacity and associated land at the Avonmouth complex. All of this means that the company has the rights to take on the connection for use in a potential generation or battery project on similar terms. **The company plans to take Avonmouth through to financial close, alongside Burwell and Tring Road, in early 2022.**

**In February 2022, it was announced that at the Avonmouth 50MW gas peaking project, Corcel was provisionally awarded a 15-year Capacity Market contract with National Grid, which would provide guaranteed gross revenue of approximately £1.5 million per year starting in 2025. What's more, this is index-linked over this period.** Basically, the Capacity Market is a mechanism used to procure capacity to make sure that the National Grid has enough generation capacity to meet the security of supply standards it is required to maintain.

**Recent T-4 Capacity Market auctions established a UK record high price of £30.59 per kw per annum (£30,590/MW/annum) which is 70% higher than that achieved last year. It's worth noting that the company has rights over a 100% interest in this gas peaking project subject to the successful completion of the existing project funding process and ultimate project construction.** Apparently, commercial terms with FPC Electric Land Limited, concerning the manner in which the benefits of the Capacity Market contract are shared, are still to be negotiated. The record high price of £30.59 per kw per annum achieved at the auction is a really cracking result which serves to dramatically change the revenue projections for all flexible energy projects, and so we feel like the number crunchers will be hard at work upgrading the expected economic potential of these projects.

## Corcel's FGS Pipeline

Already, the company has a pipeline of energy production and storage projects in development or under review for sanction that include gas peaking, flexible energy storage, combined heat & power systems and solar projects. Energy storage projects can potentially provide electricity to around thirty markets. Options including power arbitrage where the batteries are filled up at 6am when power is free and then some two and a half hours later the power is sold for £120 per MW when people are up and about, and demand is higher.

It is more than likely that Burwell, Tring Road and Avonmouth will provide the blueprint for further deals in the sector with the company having the ability to take available opportunities, with some going into electricity generation and others being monetised. **With the target of developing 4-5 such FGS projects a year, this rapidly growing division looks set to create an increasing stream of long-term reliable earnings which can be used to fuel the company's battery metal ambitions.**

## Strategy for growth

Corcel is investing in battery metals and transitional energies, making it highly relevant to investors in today's market. The company has been sitting on a stake in the Mambare Nickel Cobalt Project since time in memoriam. **In the period 2007 – 2011, the company, in a previous incarnation, drilled out and established an initial resource which attracted a £40 million valuation. Given the supply demand dynamics for both nickel & cobalt we believe that this project could easily support higher valuations once again.** Very recently, nickel prices have gone crazy, as EV manufacturers race to secure supplies at a time when Russian nickel might become off limits due to sanctions. Corcel's corporate strategy has been to pick up such blue-sky battery metals resources ahead of the expected structural price hikes in battery metals. The second similar sized nickel cobalt play, Wowo Gap, is also in PNG, and was acquired through some neat negotiations for a song; for a fraction of the £8 million which has been spent on the project to date.

Management are seeking a rapid move to a relatively low-cost starter project in PNG, with a DSO operation shipping nickel ore to China, competing with and providing an alternative to the likes of Indonesia, the Philippines and now Russia, which would provide the prospect of early cash flow. Also, the potential for installing a larger DNI style plant remains after the DSO operation is up and running successfully. **The big inflexion point to this happening is the granting of a Mining Lease, which is expected to come to pass in the coming months. Importantly, the Mambare Environmental Permit has been granted, which is one of the final hurdles ahead the award of a Mining Lease.**

The award of a 20-year Mining Lease will open the door to begin unlocking the value at Mambare for everyone to see and unlock the key for project financing. There is no shortage of supply here as the plateau has yet to be fully or even partially drilled out. At the same time, there are clear synergies with Corcel's second nickel project at Wowo Gap, and we should watch this space to see how the company potentially integrates and co-develops these two nickel-cobalt assets amidst massive price increases.

The DSO operation looks to be rapidly coming together. January 2022 saw the arrival on the scene of NPC and its quite serious partners including Sentient, Doguide Group and COSMO, a publicly listed Korean company which is the country's fourth largest lithium battery cathode producer. COSMO has a capacity of 12,000tpa and an enviable customer base including the likes of Samsung, LG, Sony and Umicore. These are ideal partners for PNG with a real need for Mambare's materials. **The development of the DSO operation is likely to require US\$25 – 30 million of capex and at that stage Corcel would either be looking to bring in larger players for a JV or perhaps consider a complete disposal. Such a disposal along these value lines would be utterly transformative for the company.** Currently, the company owns 41% of Mambare, but given a perceived inability of BMA to fund the asset through to production, it would seem logical that the entire asset is vended into Corcel to allow for meaningful onward development.

Corcel is well-positioned to help in the UK energy crisis as there is an ongoing reduction of baseload power amidst penetration of intermittent renewables. In the FGS space the team is focused on low-risk cash flow generation from UK based energy storage, trading and production.

The recent news of the T4 contracts highlights what a money spinner the company's projects could be. This is all about the National Grid making sure that there is enough power coverage availability. For this they seemingly will pay through the nose - which is all due to the volatility of alternative power sources such as solar and wind. So, the National Grid is paying for future back up even if they don't end up using it. The Capacity Market function was only triggered once (in 2016) and no electricity was actually drawn down. So Avonmouth is in line to get £1.5 million a year for effectively doing nothing, on top of the revenue it would generate from trading electricity when they do turn the peaker plant on when conditions make sense to do so.

Better than that, the T-4 contract starts in 4 years' time and runs for 15 years, but there are also T-1 contracts which are for a lot shorter periods (12 months) and that of late tend to pay a lot more. This year's T-1 auction prices have been high at around £75 per kw per annum (£75,000 per MW per annum), and such a contract would underpin effectively all of the expected annual revenues of one of the peakers.

What seems to be on the cards is that Corcel's Avonmouth would apply for a number of T-1 contracts ahead of the T-4 contract that starts in 2025. Once the team is comfortable with progress on the construction of the gas peaker plant they would go to auction for these T1s as a bridge to the much longer term T4. All of this makes the project more attractive to investors and better able to support debt funding. This back up capacity is required to ensure that the lights can be kept on in the UK. As the country continues to turn its back on coal and nuclear generated electricity, and although renewable power is fine when the sun is shining, and the wind is blowing – there are clearly ongoing power requirements. **Batteries might be quite good for an hour or two, to fill gaps or shave off high prices, but in reality, to cover something like a two-day gap, gas peaker plants are very important.**

All of this means that the financial model will need to be revised. The current model uses an annualised revenue figure in the range of £71,000 – 91,000 per MW. This was based on historical data from the last five years. Given recent trends, this likely isn't indicative of the next five years. We say this because what were previously once in a decade crises are now happening on a quarterly basis with multi-day shortages becoming common. The end result is that these projects are going to be more profitable than perhaps initially expected by Corcel or the broader industry. The mid-case of total revenue for Avonmouth was £82,000 per MW but in the case of the T-1 result, nearly all of that could be government backed by the capacity market, and in the case of the T4 a decent portion as well, but for a much longer timeframe. **On this basis it does look as though the revenue estimates could be increased to c.£80,000 - £100,000 per MW at the very least. At the high end that means gross revenues of £5 million per annum, with no real associated increase in costs.** The Avonmouth gas peaker plant, and the one at Tring Road, are likely to be more profitable than expected in our view. That means they will be more likely to get funded and be more profitable for the ultimate owners, including Corcel.

One thing that is for sure is that the management team has assembled a highly compelling mix of relevant projects where **investors can expect to see value being generated by key inflexion points being triggered, as well as the prospect of M&A action to bulk up the Battery Metals side. This could conceptionally be something like a copper or lithium deal – either of which is likely to be well-received.** Today, we believe that all the elements are in play to push this stock to a £25 million market cap. Strong cash flow generating alternative energy projects mean that moving ahead, investors in Corcel should not be troubled with the normal concerns typical of small cap exploration plays with their regular fund-raising exercises that cause significant dilution and poison relationships with long term shareholders.

## Financials & current trading

Recent years have seen Corcel expanding its interest in mineral exploration projects for battery metals as well as adopting a twin strategy of UK based energy generation and storage. These projects all continue to be at a pre-revenue stage, with recent losses incurred from historic exploration write-offs and administrative expenses.

Y/E 30 June £'000s	2017A	2018A	2019A	2020A	2021A
Revenue	113	-	-	-	-
Pre-tax profit/loss	(534)	(1,550)	(2,608)	(1,482)	(1,227)
Net profit/loss	(534)	(1,550)	(2,608)	(1,482)	(1,227)

*Corcel five-year trading history. Source: Company accounts*

### 2021 results

The twelve months ended 30<sup>th</sup> June 2021 saw the team continuing to build the core NAV in the portfolio which spans the compelling intersection of battery metals mining and their end use in both energy storage and the EV revolution. Key costs included project expenses of £0.121 million and a slightly higher administrative cost of £1.014 million, which reflects the additional work required on the growing tally of projects across multiple industries. Corcel incurred a loss of £1.277 million, with basic and diluted earnings per share of 1p.

### Recent developments

January 2022 saw Corcel announcing a non-binding Memorandum of Understanding with Shandong New Powder COSMO AM&T (NPC) for the supply of nickel from the company's Mambare and Wowo Gap nickel projects. This announcement highlighted that NPC was seeking to purchase up to 0.5Mt per annum of nickel DSO products for production from the Mambare and Wowo Gap projects. NPC is a joint venture between Sentient Global Resources Funds, Dougide Group and the Korean COSMO AM&T Co. Ltd, and is focusing on producing lithium battery cathode materials.

In February 2022, the board noted the provisional results of the T-4 Capacity Market Auction for delivery in 2025/26 (T-4 Auction). The company's Avonmouth gas peaking project was successfully entered into the T-4 Auction and was provisionally awarded a 15-year Capacity Market contract by National Grid Electricity System Operator (NGESO). The T-4 CM Auction cleared at a record high of £30.59/kW/annum.

**March 2022 brought news that the Mambare mining lease application was progressing, with the application now passed to the National Executive Council, which is thought to be the final step in the application process. At the same time at Wowo Gap, a JORC upgrade and gap analysis is now well underway.** In this announcement, the board was able to point out that the company had historically used a US\$18,500/t price assumption in the base case modelling of its nickel projects in PNG. The company noted the suspension in nickel market trading at the London Metal Exchange following a 250% surge in prices over 7-8<sup>th</sup> March, with intraday trading of over US\$100,000 per ton on Tuesday 8<sup>th</sup> of March. **Given this, Corcel sees significant additional core net asset value from its Battery Metal portfolio and sees the extended volatility of global nickel markets enhancing the case for taking both Mambare and Wowo Gap into DSO production.**



## **Risks**

### **Geological risks**

There are a series of technical risk factors concerning the amount of understanding of the geology of the project areas, the mineralisation being targeted and the distribution and magnitude of the indicators that have been identified in exploration work.

### **Political risk**

There are political risks involved in companies operating in PNG. The mining industry is arguably the most susceptible sector of the market to political risks largely due to its importance to the host country's economy and potential resource nationalisation.

### **Commodity price risks**

Metal and electricity prices are highly cyclical and changes in these prices could have a negative or positive impact on the valuation of the company's projects and sales revenue.

### **Exchange rate risks**

Movements in the value of currencies will have an effect on the company's accounts on translation from US dollars, Canadian dollars and PNG Kina into sterling. Fluctuations in the value of such currencies against the pound may have an effect on the valuation Corcel is awarded by the UK stock market.

### **Future funds**

The fundraising market for small cap companies looks to have had improved from the worse conditions a couple of years ago. However, the global spread of the COVID-19 pandemic has meant that equity markets have become extremely difficult. Even with the worst of the pandemic now seemingly behind us, some fund raisings in the small cap mining and energy sector are still seeing share prices being undermined by incoming investors demanding substantial discounts to provide the necessary capital.

## **Board of Directors**

### **James Parsons – Executive Chairman**

James has more than 20 years' experience in the fields of strategy, management, finance and corporate development in the energy industry across Europe, South America and Central America.

He was formerly the Chief Executive Officer at Sound Energy plc for eight years. James started his career with the Royal Dutch Shell group in 1994 and spent 12 years with Shell working in Brazil, the Dominican Republic, Scandinavia, the Netherlands and London.

Leading up to 2006 (when he left Shell to join Inter Pipeline Fund), James held various positions in Shell's exploration and production business, latterly as Vice President Finance – New Business. He is a qualified accountant and has a BA Honours in Business Economics.

James is also the Non-Executive Chairman of Echo Energy plc, Non-Executive Director at Coro Energy plc and Executive Chairman at Ascent Resources plc.

### **Scott Kaintz – CEO**

Scott joined Corcel Plc in 2011 in a Corporate Finance role before becoming an Executive Director. Previously he worked in corporate finance and investment funds in London, focusing on capital raising efforts and debt equity investments. Scott has over a decade of experience in management and operating international natural resource businesses. Originally, he was US Air Force Officer and has a degree in Russian and a MBAs from London Business School and Columbia Business School.

### **Lord Henry Bellingham – Non-Executive Director**

Lord Bellingham has enjoyed a distinguished Parliamentary career of almost 40 years and held a number of senior positions including: Foreign Office Minister for Africa, The UN, Caribbean, Overseas Territories and Conflict Issues; Chairman of the Westminster Foundation for Democracy; Chairman of the All-Party Group on the Commonwealth; and the Prime Minister's Trade Envoy to Libya. In 2016, he was Knighted in the New Year Honours list for Parliamentary and Political Service. He sits in the House of Lords after being awarded a Life Peerage in 2020.

In addition to his Parliamentary career, Lord Bellingham has held several non-executive roles on AIM companies and, until recently, was Non-Executive Chairman of Pathfinder Minerals Plc since 2014. Prior to entering Parliament, Lord Bellingham practised as a barrister having graduated from Magdalene College, Cambridge with a master's degree in Law.

### **Ewen Ainsworth – Non-Executive Director**

Ewen is an experienced AIM company director. He is currently the CFO at Coro Energy Plc and CEO of Discovery Energy Limited, an advisory, consultancy and investment company, and has worked in a variety of senior and board-level roles in the natural resource sector for over 30 years, most recently as Finance Director for Gulf Keystone Petroleum Ltd. He qualified as a chartered management accountant, before moving into leading commercial roles. He holds a degree in Economics and Geography from Middlesex University, and is a member of the Energy Institute.

## Forecasts

We update coverage of Corcel with forecasts for the financial years ending 30<sup>th</sup> June 2022 and 2023. In 2022, it is thought that the Mambare Nickel/Cobalt Project could be awarded a Mining Lease, which would allow the planning of the DSO to begin in earnest. In this period, it is forecast that one of the shovel ready Tring Road and Avonmouth gas peaking projects will reach financial close. It is likely to be Avonmouth first as this 50MW gas peaking project has been provisionally awarded a 15-year Capacity Market contract with National Grid providing guaranteed gross revenue of c.£1.5 million per annum. Financial close will result in the payment of a development fee and may involve a free carried interest. These are normally equivalent to £30,000 per MW but given current market conditions is expected to be slightly higher than that at £2 million. The pre-tax profit is forecast to total £0.6 million, with no tax paid due to accumulated losses. Earnings per share of 0.15p are expected.

In fiscal 2023, the 40%-owned Tring Road 50MW gas peaking project is expected to reach financial close with the receipt of a development fee of £2 million, where £0.8 million would be attributable to Corcel. Plus, another two further 50MW 100%-owned projects with a development fee of £2 million each as the company moves towards achieving its goal of bringing 4 to 5 such projects onstream annually. There will not be any revenue from electricity generation yet as the build out for both Avonmouth and Tring Road is expected to take 12-13 months and so first electricity is likely after the end of this financial year in the summer of 2023. The pre-tax profit comes out at £2.600 million which equates to earnings per share of 0.56p.

Year End 30 June (£'000s)	FY 2020a	FY 2021a	FY 2022e	FY 2023e
<b>Revenue</b>	-		2,000	4,800
Gain on sale of financial instruments as FVTPL	-	(5)	-	-
Exploration expenses	(205)	-	(100)	(500)
Project expenses		(121)	(150)	(250)
Impairment of investments in joint ventures	-	-	-	-
Impairment of goodwill	(106)	(25)	-	-
Impairment of right-to-use asset	(41)	-	-	-
Impairment of loans and receivables	(37)	-	-	-
Administration expenses	(838)	(1,014)	(1,050)	(1,200)
Foreign currency loss	(26)	-	-	-
Other income	21	9	-	-
Finance costs, net	(247)	(65)	(100)	(250)
Share of loss of associates and joint ventures	(3)	(6)	-	-
Profit/(loss) for the year before income tax	(1,482)	(1,227)	600	2,600
Taxation	-	-	-	-
<b>Profit/(loss) for the year</b>	<b>(1,482)</b>	<b>(1,227)</b>	<b>600</b>	<b>2,600</b>
<b>Profit/(loss) attributable to:</b>				
Equity holders of the Parent	(1,477)	(1,227)	600	2,600
<b>Non-controlling interest</b>	<b>(5)</b>	<b>-</b>	<b>-</b>	<b>-</b>
	<b>(1,482)</b>	<b>(1,227)</b>	<b>600</b>	<b>2,600</b>
<b>Earnings per share attributable to owners of the Parent:</b>				
Basic (p)	(2)	(1)	0.15	0.56
Weighted average number	75,338,810	279,406,266	394,298,868	461,175,246
Total shares plus options and warrants	250,749,674	567,611,998	618,540,075	630,782,384

Source: Company/Align Research

## Valuation

Our intention is to generate a valuation which makes sense in today's equity market in order to determine a meaningful, realistic & robust target price for the stock. **Corcel seems to have missed out on the uplift in valuations enjoyed by base and precious metal resources plays in 2020 and today sits at a derisory valuation, which we believe is totally disconnected with the company's current fundamentals. All of this is surprising to say the least considering that the company has two large-scale undeveloped nickel projects in development, just as Russian nickel supply might be coming completely off the market. Particularly so when married with the fact that this is happening at a time when forecasts for nickel demand are being escalated on the back of the large-scale penetration of EVs and grid storage installations.**

In addition, we are also seeking to place a valuation on the vanadium play and the rapidly developing FGS interests. **There is a lot of value here that we believe is not remotely reflected in the share price and below we look at these assets in turn.**

### Mambare Nickel/Cobalt Project

**We believe quite simply that Mambare has the potential to be a large-scale nickel laterite project on a worldwide basis.** In seeking to place a valuation on the project we have looked at two peers, Sunrise Energy Metals (ASX:SRL) and Horizonte Minerals (LSE:HZM), both of which are in the midst of moving their respective nickel projects in Australia and Brazil towards production.

Company	Share price	Market Capitalisation £m	EV £ million	Nickel Resource kt	EV/t £
Sunrise Energy Metals (ASX: SRL)	A\$2.16	96.6	80.42	922	87.22
Horizonte Minerals (LSE: HZM)	6.78p	263.31	273.03	3,234	84.42
Average					85.82

*Nickel laterite exploration/development companies. Source: Align Research*

Sunrise Energy Metals is the new name for Clean TeQ, a company which has the backing of billionaire mining investor Robert Friedland. It owns the Sunrise Nickel/Cobalt/Scandium Project in New South Wales and is also a leader in metals recovery and industrial water treatment through its proprietary Clean-iX continuous ion exchange technology. The Clean TeQ Sunrise Project is one of the largest and most cobalt-rich nickel laterite deposits in the world and is now development-ready, with all key permits and approvals already in place. On top of that, Sunrise also represents one of the largest and highest-grade scandium deposits globally.

The Definitive Feasibility Study (DFS) on Sunrise was completed in June 2018 and demonstrated the global importance of this project as a sustainable, long-life, low-cost source of high purity cobalt and nickel sulphates for the battery revolution. The post-tax NAV came out at NPV(8) US\$1.392 billion, with a post-tax IRR of 19.1% based on a long-term production rate of 18,520tpa nickel and 3,450tpa cobalt. The latest MRE shows a total of 922kt nickel and 162kt cobalt (Measured, Indicated and Inferred categories) at a 0% cobalt cut-off grade. The EV/t came out at £87.22.

Horizonte Minerals has two tier 1 nickel projects in Brazil, both 100% owned. The flagship project Araguaia has been through a Feasibility Study and Stage 2 (expansion case) had an estimated IRR of 30.7% and NPV of US\$1.2 billion for a 29,000tpa nickel to stainless market project and represents a construction ready project.



Project number 2 is Vermelho which is at the Prefeasibility Study (PFS) stage. This showed an estimated IRR of 26.3% and NPV of US\$1.7 billion for 24,000tpa nickel contained in sulphate for the EV battery market. These studies were both undertaken using a \$16,400/t nickel price. Araguaia's resources total 132.257Mt (Measured, Indicated and Inferred) at an average of 1.27% nickel and 0.06% cobalt for 1,679kt Ni and 7,752t cobalt. The larger Vermelho project's resources (Measure, Indicated and Inferred) all add up to 148.8Mt at 1.05% nickel and 0.05% cobalt for 1,555kt Ni and 78.7kt cobalt. The EV/t for Horizonte came out at £84.42.

**On just a small corner of the deposit, Mambare has 1,528Kt of contained nickel and 146kt of cobalt.** The presently outlined JORC resource is purely a function of exploration effort and available funding. **So, the true scale of the resource at Mambare could be very substantially larger. To be highly conservative, considering all this, we have chosen to risk the average peer EV/tonne figure of £85.82/t by 90%, which results in a value of £8.58 per tonne.** This suggests a valuation of £13.11 million for Mambare, or £5.37 million for Corcel's 41% stake. This figure has been carried forward into our SOTP calculation.

	Mt	Nickel %	Cobalt %
Indicated	3.3	1.00%	0.07%
Inferred	159.2	0.94%	0.09%
<b>Total</b>	<b>162.5</b>	<b>0.94%</b>	<b>0.09%</b>
<b>Contained metal (Kt)</b>		<b>1,528</b>	<b>146.25</b>

*JORC-compliant MRE for Mambare Nickel/Cobalt Project June 2012. Source: Company*

### Wowo Gap Nickel Cobalt Project

Wowo Gap is at a slightly earlier stage of development than Mambare. **So, we have chosen to reflect this by using the EV/t figure ascertained for Mambare of £8.58/t but then applying a further risk reduction haircut of 35%.** This results in a value of £5.58/t, which applied to the 1,325kt of contained nickel suggests a valuation of £7.39 million. We feel very comfortable about this value as we know c.£8 million has been spent here over time.

	Mt	Nickel %	Cobalt %
Indicated	72	1.03%	0.07%
Inferred	53	1.09%	0.06%
Total	125	1.06%	0.07%
<b>Contained metal (Kt)</b>		<b>1,325</b>	<b>83</b>

*Wowo Gap MRE (JORC 2004) dated 2011. Source: Company*

### Dempster Vanadium Project

Over recent years it has become clear that the global energy transition is happening faster than previous models predicted. Given this, it is little surprise that Canadian vanadium juniors have been attempting to position themselves to benefit from the vanadium-based energy storage chain by providing future supplies of this metal. **Vanadium has in fact been deemed to be on the critical list by the US administration.** Corcel has a 50% interest in Dempster which was acquired in January 2019 for C\$450,000. The best results from Dempster include 0.39% V<sub>2</sub>O<sub>5</sub> over 75.9m, 0.32% V<sub>2</sub>O<sub>5</sub> over 38.2m and 0.39% V<sub>2</sub>O<sub>5</sub> over 90.16m. These intersections are comparable to grades and thicknesses for similar deposits currently being explored in North America and demonstrate potential to host an economic deposit of vanadium.

Since the acquisition of this interest, vanadium plays have benefitted and there are now some quite chunky valuations given the excitement surrounding vanadium redox flow batteries. **We can see some close parallels with Vanadium Energy (TSX-V:VEC) and its Huzyk Creek Property in Manitoba.** Like Dempster, the vanadium potential was discovered by chance when testing for other metals (copper and zinc mineralisation for VEC). A broad vanadium zone was encountered at the Huzyk Creek Property from a single drill hole (NIM19 – 2017). Subsequent drilling in winter 2019 saw 13.77m (from 300.03m to 313.8m) at 0.18% V<sub>2</sub>O<sub>5</sub> including 9.74m at 0.22% V<sub>2</sub>O<sub>5</sub> (HZ-19-1) and 14.05m (from 153.95m to 168m) at 0.11% V<sub>2</sub>O<sub>5</sub> (HZ-19-2). With the shares trading at C\$0.04, Vanadium Energy has a market capitalisation of £1.13 million and an Enterprise Value of £1.29 million.

**Based on this peer analysis, we believe that the Dempster Vanadium Project is worth at least £1.29 million, with Corcel's 50% stake worth £0.65 million.** We believe that such a valuation is innately conservative as drilling at Dempster by the previous operator has resulted in better grades and widths which were recorded in mineralisation that was a lot shallower than that encountered by Vanadium Energy.

The peer group does show the sort of rating awarded to companies as they push their vanadium projects up the valuation curve through defining a NI 43-101 resource. Vanadium Corp Resources (TSX-V:VRB) has an NI 43-101 for its Lac Dore Vanadium MRE (2020) of 2.97 billion pounds of V<sub>2</sub>O<sub>5</sub> in 300Mt and at a share price of C\$0.04 has an EV of £6.76 million.

### **Flexible Grid Solutions**

The move into renewable energy and battery storage began a couple of years ago with the establishment of the Esteq business, subsequently renamed to FGS. Management is keeping its project pipeline under wraps so as not to jeopardise future deals, **but investors can be assured that there is a lot going on to put together a sequence of robust projects.** The relationships with ion Ventures, Arlington and Electric Land look as though they can provide an enviable flow of projects through to FGS.

We have valued the FGS business solely on the 100% interest in the 50MW Burwell battery, the 40% interest in the Tring Road 50MW gas peaking plant and the 100% interest in the Avonmouth 50MW gas peaking projects. **We have ignored the pipeline of further projects that have yet to reach the stage of public disclosure as well as the 15MW of additional grid connection available at Avonmouth.**

**Lots of battery storage projects built in the UK are a bit on the small side, and so Corcel's 50MW projects are set to provide a pretty sizeable amount of power to trade and so FGS should have little problem in attracting the attention of the major aggregators.** Capex, opex and cash flow from such projects are well-known and so the risk profile is fairly low. The excitement in the sector used to be surrounding peaker plants which basically go on and only jump into action when electricity prices are high. But now investors are moving onto batteries, which allow much more nuanced and advanced trading techniques and strategies. The key take away here is that we believe all this means Corcel should have little difficulty in moving its projects to financial close.

**An industry rule of thumb is that once energy storage projects are shovel ready, they are seen to be worth £20,000 – 50,000 per MW.** "Shovel ready" means the lease, grid connection and planning are in place. These sorts of operations have had a cracking time of late and cashflow, rather than being something like £48,000 per MW broadly assumed, has reached c.£120,000 per MW, largely due to the market in ancillary services such as Dynamic Containment. Such Wild West conditions are unlikely to go on forever but could provide a flavour of what to expect over the next few years as batteries are so important in smoothing out the volatility inherent in renewable power generation.

There is growing attention on the dramatic shift from fossil fuel plants to a lower carbon generation model. This is creating huge opportunities for the requirement for a continuous uninterrupted supply of electricity, which Corcel is addressing. **April 2021 saw the arrival of a comparable stock on the market with the IPO of Mast Energy Developments (LON:MAST).**

MAST has a growing portfolio of small-scale flexible power plants in the UK and currently seems to have under development/construction a total of 18.4MW of generating capacity. MAST also states that it has a clear strategy to establish a portfolio of 300MW generating capacity in the UK.

**Comparative analysis makes for interesting reading. Corcel's attributable 165MW of projects very neatly trumps MAST's portfolio.** Since we last performed this analysis, MAST's share price has been under pressure and the stock now sits at a discount to its IPO admission price of 12.5p and below the high of 16.25p the stock attracted in early trading.

Total electricity generation capacity	c.20MW
MAST EV	£12.57m
Valuation per MW	£0.629m
50% discount	£0.314m

*Valuation per MW for MAST. Source: Align Research*

Our analysis suggests a valuation per MW for MAST of £0.629 million. **Discounting this figure by 50%, to remain conservative, points towards a valuation of £51.9 million for Corcel's growing tally of projects which now totals 165MW.** This is a very attractive space to be in as it is critical to the UK's transition to renewables and there is a lot of money is chasing such deals.

#### Total

Our SOTP valuation totals £64.19 million. Based on the number of shares currently in issue (400,560,001) the per share valuation would come out at 16.03p. Adding the funds that would result from options and warrants being exercised (£3.38 million) gives a total of £67.57 million. **This equates to 10.92p on a fully diluted basis, a figure which we have chosen to use as our target price.**

Asset	£ million
Mambare	5.37
Wowo Gap	7.39
Dempster Vanadium Project	0.65
Flexible Grid Solutions	51.9
Debt	(1.51)
Cash	0.39
<b>Sub-total</b>	<b>64.19</b>
<b>Per share</b>	
Based on the number of shares in issue (400,560,001)	16.03p
<b>Fully diluted basis</b>	
Funds coming from warrants and options being exercised (ignoring warrants exercisable at 25p & 60p and options exercisable at 45p & 80p)	3.38
Total	67.57
Based on the number of shares on a fully diluted basis (618,540,075)	<b>10.92p</b>

*Sum-of-the-parts valuation. Source: Align Research*

## Conclusion

**We believe that Corcel remains a yet to be recognised, early leader of the energy transition in the micro-cap space.** Certainly, the company provides an extremely compelling way in which to play the push to clean power through its on-trend combination of impressive blue sky battery metal exploration plays and down to earth, and potentially highly cash generative FGS projects. A couple of years ago, the company established the Esteq business, which has been rebranded FGS. The original idea was to copy the Friedland model out of Australia which saw a bumper valuation being placed on Sunrise Energy Metals for an outfit that had a foot in both camps – battery metals exploration and technology. There is a lot of logic to add such a second prong to the corporate strategy of a junior explorer.

Nickel had been out of favour but the management team at Corcel had the firm belief that it was going to structural re-rate due to the combination of fast-growing demand and constrained supply. It was a mid-term bet as nickel moved from being used mainly for stainless steel products to its emergence as a leading battery metal. **The sort of future they saw seems to have happened a little earlier due to the ongoing Russia/Ukraine conflict.** Norilsk is a big nickel producer with ridiculously low nickel production costs due to a wealth of by-product credits. But in just a couple of weeks the nickel world has changed massively. **Russian nickel supply could be completely off the market for a lengthy period of time and groups like NPC must be a little nervous about where their nickel might come from going forward and what price they will have to pay.** This move brings Corcel's nickel pipeline to the forefront and the company is seeking to accelerate things to fill the widening supply-demand gap that is becoming obvious. At this stage it is worth pointing out that the funding risk of nickel projects looks to be reducing dramatically.

Big mining projects involve both risk and massive upside potential from 100s of millions to billions of dollars being spent. In contrast, FGS provides more immediate and more fixed returns, but with much less risk. In addition, a typical FGS project only takes 10-24 months to get into production, whilst mining projects often can take a decade or longer to go from early exploration to a producing mine. Developing a business such as FGS does sit well with battery metals exploration as it allows management to keep their finger on the pulse of the industry and to truly understand where batteries and battery metal markets are going and what the banks are ultimately prepared to fund.

The Align house view is that the progress of Corcel to-date is largely due to the strategic foresight of the executives who have designed and begun executing some years ago a strategy to build a material company supporting growth in the battery space. Furthermore, the Chairman (through his controlled Company C4 Energy Limited) recently bought a portion of the company's debt and converted it to equity at 1.5p, electing to lock it in for 18 months. Combine these facts with their prior track record, deep AIM experience and "desire to win" and we believe there is a highly compelling proposition here.

**There looks to be a decent flow of news coming down the pipe. The granting of a Mining Lease for Mambare could happen anytime.** The potential funding of both Tring Road and Avonmouth looks likely to play out over the coming months – as it does take time for a funder to get economically comfortable with the projects before writing out the £55 million cheque required to fund the pair. On Burwell, moves to get the grid congestion issue resolved sees Corcel working with others affected in that area. The Mambare Mining Lease being in place and the tightening nickel situation should speed up the move from an MoU to the partners economically committing to help get Mambare and Wowo Gap into production. Corcel is not looking to start off with anything bigger than a \$25 million capex DSO project. A processing plant would need infrastructure which is not currently in place in PNG, whereas the DSO is just a simple ship to China proposition. So, the plan is DSO first and if it performs and capital is available, then fund and co-locate a much larger processing plant.



**We continue to believe that Corcel is hugely undervalued by any yardstick and as evidenced by our capital provision on both the debt & equity sides.** The lowly battery, which once was perhaps best known for powering kids' toys or your torch, is now shaping up to become a huge industrial play that will change the world. As such, Corcel has a seriously on-trend portfolio. Wowo Gap was picked up for buttons and the team can leverage it as there is big demand for both nickel and cobalt going forward. In parallel, the FGS division is being carefully crafted to become a cash cow to fund corporate overheads and further value creation in this ever so hot battery metals space.

We look forward to updating our valuation going forward as the obvious key value inflexion points get ticked off. **We update coverage of Corcel with a Conviction Buy stance and a share price target of 10.92p.**

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