





# The Investor's Guide to Battery Metals -ASX Stocks to Watch



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The Investor's Guide to Battery Metals

# Content

1. Battery Metals Day 20201
2. European Battery & EV Markets5
3. Vulcan Renergy Resources (ASX: VUL   FRA: 6KO)10
4. Euro Manganese Inc (ASX: EMN   TSX-V: EMN)15
5. Our Investment Process21
6. Our Next Battery Metals Play?23



# **Battery Metals Day 2020**

Tesla's recent "Battery Day", an event livestreamed around the world, grabbed the attention of not just Tesla investors and car enthusiasts, but those with interests across the entire automotive, electric vehicle, rechargeable battery, environmental and ESG industries.

Having almost singlehandedly spurred the mainstream auto industry towards an electric powered future, all eyes were on Tesla's chief executive, Elon Musk, as he revealed the company's plans and its technologies under development. Musk noted the importance of transitioning to clean energy and transportation, including reducing the carbon footprint of supply chains and source materials local to manufacturing plants and Gigafactories.

To summarise, Tesla is going to be making a lot more electric vehicles (EVs) and a lot of batteries.

Tesla's Gigafactories will purchase battery metals, such as lithium, directly from producers and it will require the source of those battery metals be in close proximity to its Gigafactories. There will be a heavy focus on securing supply of battery metals that can be sourced in an environmentally sustainable way.

Tesla revealed plans for an affordable, sub-US\$25,000 electric vehicle (EV), plans to manufacture 'tabless' batteries that will improve range and performance, and it is working to eliminate cobalt from its battery cathodes.

In addition to relying on third-party battery suppliers, Tesla plans to start making its own lithium-ion batteries for use within its products.



It is looking to increase nickel use in battery cathodes, that require no cobalt, and could also use a mixture of nickel and high purity manganese (HPM) to help boost production capacity.

Tesla is expected to incorporate manganese in a series of new battery plants that it proposes to build, at a scale that defies the imagination: 3 Terawatts/annum of batteries.

This year has delivered exceptional growth for TSLA shareholders — the Nasdaq listed stock rose by as much as 500% between January and August. The stock is now trading at ~US\$420 per share for a ~US\$392 billion market capitalisation, while its revenues grew from \$100 million in 2010 to \$24.6 billion in 2019.

Tesla may now be looking expensive to new investors, but there are plenty of juniors with exceptional upside potential leveraged to this growing sector.

Of particular interest, not just to us at Next Investors, but also to Elon Musk, is the European lithium-ion battery industry that is supported by a widespread shift in both thinking and legislation towards green energy and transportation.

Tesla has quickly created a storm in Europe with the introduction of its Model 3 one of the best-selling cars on the continent — a shock to local automakers that are now playing catch up to Tesla.

Telsa's Gigafactory Berlin-Brandenburg in Germany (now under construction) will be the most advanced high-volume electric vehicle production plant in the world. Tesla plans to produce 500,000 electric vehicles at the Grünheide site starting from the European summer of 2021.

EVs are no longer the sole province of Tesla – automakers like Volkswagen,



General Motors, and Ford are pouring billions of dollars into EV development, so we can expect huge ongoing investment in this space as these major players fight over the growing consumer market.

Against that backdrop, here at Next Investors we have developed a list of three requirements that must be met when we invest in companies leveraged to the European electric vehicle (EV) and lithium-ion battery (LIB) industries:

- 1. **Biggest resource** in Europe for that commodity.
- 2. Highly ethical and green focus.
- 3. **Proximity** to central Europe's battery and EV hubs.

As explained in further detail later in this book, our two existing ASX-listed European battery metal stocks check each of these requirements.

The first in Vulcan Energy Resources (ASX: VUL | FRA: 6KO) which is one of the biggest holdings in our portfolio.

- 1. Biggest Resource: Vulcan has Europe's largest lithium Resource.
- 2. Highly ethical: Vulcan is targeting production of Zero Carbon Lithium<sup>™</sup>
  in a world first CO2-negative geothermal and lithium brines operation.
- 3. **Proximity:** Vulcan is located in Germany's Upper Rhine Valley, at the heart of the European auto and lithium-ion battery manufacturing indus try.

Our second investment in the space is the recent addition of Euro Manganese Inc. (ASX: EMN | TSX-V EMN) to our portfolio.

1. **Biggest Resource:** Euro Manganese has the largest manganese resource in Europe.

2. Highly ethical: Euro Manganese will recycle waste to produce highly



refined manganese metal and salts (no mining involved).

3. **Proximity:** Strategically located in the Czech Republic with 6+ large bat tery factories located just 200 to 500 kms away.

We are actively looking to complement our investments in VUL and EMN with a third European battery metals investment. We will notify nextinvestors.com subscribers once we've made a decision, and will explain our reasoning for the investment then - so please keep an eye out in your inbox.





### **European Battery & EV Markets**

Europe is undergoing a once-in-a-lifetime switch to electric vehicles (EVs), a move that has made it the fastest growing lithium-ion battery production centre in the world.

The EU has increasingly strict hemission requirements as it fights against climate change and seeks to reduce emissions by at least 40% by 2030. This has been reflected in EV sales, as can be seen in this chart of the world's top ten EV penetration rates in Q4 2019 and Q1 2020:



#### Nine of the top ten markets for electric-vehicle penetration rate were European.



In response to this demand, Europe has emerged as a major electric vehicle production hub. However, it relies on the external extraction, production and supply at all stages along the EV and Li-ion battery supply chain.

Given the rate that the EV and battery industries are growing in Europe, it can no longer afford to rely entirely on outside countries for materials supply. In the case of some rare earths, Europe is relying on supply from even just one country.

EC Vice President Maroš Šefčovič said, "a secure and sustainable supply of raw materials is a prerequisite for a resilient economy. For e-car batteries and energy storage alone, Europe will need up to 18 times more lithium by 2030 and up to 60 times more by 2050."

In order to ensure sustainable demand can be met, the EU has announced a plan to secure supply of critical metals (especially battery metals), developing a complete supply chain within the EU.

The EU established the European Battery Alliance, along with changes to existing legislation, to help new start-ups in the market increase production, hopefully more sustainably, in order to meet Europe's battery demands, which driven by the growth in electric vehicles, could be worth €250 billion a year by 2025.

The bloc wants to cut its dependence on Chinese supplies of rare earths, lithium batteries and solar-cell components, as it builds a green-energy economy that doesn't rely on China. It is developing its own capacity for extraction, processing,



recycling, refining, and separation of battery metals and rare earths.

This goal fits in with the "European Green Deal" – a set of policy initiatives that have the overarching aim of making Europe climate neutral by 2050. Government, corporates and consumers are all focused on making the switch with over €24 billion in investments in European EVs and battery supply chains underway.

Recently, in support of the auto sector, which has suffered large hits to sales due to the pandemic, Spain, Germany and France are requiring automakers to increase EV production. Motorists are also receiving incentives to either buy a cleaner car or trade in their old model for a new one.

Throughout Europe, auto makers will be penalised based on vehicles' carbon emissions. These penalties only currently target vehicle emissions, while their supply chains are not yet under such scrutiny. However, this is likely to soon change with new EU legislation that will lead to heavy penalties if carmakers are not sourcing greener raw materials.

Already, automakers face the risk of €14.5 billion in fines from the EU for failing to meet tougher new emissions standards.

Those that exceed the EU's emissions standards can buy credits from other companies that outperform the requirements, potentially paying less than they would in fines depending on the price negotiated. The has benefited Tesla, which expects revenue from emissions credits to double this year from \$594 million in 2019 as



#### automakers buy carbon credits.



"To reduce the EU's dependence on imports of batteries raw materials, access to primary and secondary EU domestic sources must be facilitated. The use of sustainably produced raw materials is critical for the environmental footprint of the battery and of the entire electric vehicle"



European Commission report to the European Parliament

The entire battery supply chain, from mining to end-user, needs to be as green as possible for the electric vehicle market to maximise its ambitions for a lower-carbon future.

In the UK, a ban on new fossil fuel vehicles is set to be brought forward from 2040 to 2030 to help speed up the rollout of electric vehicles across British roads. Finland, which opened a lithium-ion battery assembly plant in 2019, also aims to be carbon neutral by 2035. Sweden and Norway have the same target. However, there is one issue Europe hasn't been able to fully solve yet: securing its own local supply chain of raw materials to go into each and every battery. Companies that can help Europe reach that goal have an excellent chance of outperforming.

Here at Next Investors we are big on the European EV thematic – having made an early, successful investment in Vulcan Energy Resources Ltd, a second venture into





the space with a recent investment in Euro Manganese Inc, plus we continue our search for further investments in the space.



## Vulcan Energy Resources (ASX: VUL | FRA: 6KO)

Located in Germany's Upper Rhine Valley — at the heart of the European Battery industry and just 600km from Tesla's soon to be completed Berlin Gigafactory — Vulcan Energy Resources has Europe's largest lithium JORC Resource (15.37Mt contained LCT) at its Zero Carbon Lithium<sup>™</sup> Project.

The company has developed the world's first and only Zero-Carbon Lithium<sup>™</sup> process and plans to produce battery-grade lithium hydroxide from geothermal brines pumped from wells with a renewable geothermal energy by-product.

The project has potential for dual revenues from its battery grade zero-carbon lithium hydroxide product and geothermal energy that can be injected back into the power grid.

This will go towards meeting Europe's rising demand for low carbon solutions in transport sector and VUL's core market for Zero Carbon Lithium<sup>™</sup>, and its secondary market of geothermal energy for zero carbon heating and zero carbon electricity.

The zero carbon, or CO2-neutral, development of Europe's lithium deposits is crucial for a sustainable and strong European battery industry and will bring the EU significantly closer to meeting its goal of a climate neutral economy by 2050.

The region has more than adequate lithium resources to cover its forecast demand and now that direct lithium extraction (DLE) technology has been shown to work on VUL's brines, Europe is all the more closer to its first local battery grade Zero Carbon Lithium<sup>™</sup> supply.



This places the company in a very strong strategic position.

Currently, processed battery material is transported to battery manufacturers and automakers in Europe from environmentally damaging hard-rock mining or salar type brines operations in Australia, China and the Americas.

This results in the generation of significantly more CO<sub>2</sub> emissions than the manufacture of vehicles with traditional internal combustion engines.

In fact, the current main pathway for producing and refining lithium, from hard-rock mines, will emit approximately 1.05 billion tonnes of CO2 to produce the quantity of lithium required to electrify all the world's passenger vehicles. That's equivalent to the total annual emissions of UK, France and Italy combined.

Here are the comparable CO2 emissions linked to hard rock lithium sources and Vulcan's Zero Carbon Lithium<sup>™</sup> production:





Unlike current lithium extraction processes, Zero Carbon Lithium<sup>™</sup> will incur virtually zero disruption to communities or the environment.

This means no large open pit mines, no large, unsightly and water-hungry evaporation ponds, or process plants running on fossil fuels.



With a successful scoping study under its belt, VUL is working towards completion of its Pre-feasibility study that's targeted for the year end. This will be followed by construction of pilot plant, then a DFS in 2021. First commercial Zero-Carbon Lithium<sup>™</sup> production is targeted for 2023.





Vulcan is located central to Europe's auto and EV battery industry in Germany not far from Volkswagen, Northvolt and Tesla's planned Gigafactory Berlin-Brandenburg. And aside from Tesla, there are no less than 18 battery factories dotted around Vulcan's project, at a negligible distance for supply chains.

Next Investors first brought VUL to our readers in August 2019. It has since returned a total of 420% and has been up by as much as 550% in that time. In February 2020, we named Vulcan as our Top Stock Pick for the year. Yet even after its recent strong performance there remains considerable potential upside.

Earlier this year, German research house Alster gave Vulcan a A\$2.45 (€1.45) per share valuation.

Since then, there have been many encouraging updates on the project and the Vulcan team, including VUL's lithium extraction process having been shown to work at the geothermal brine, and numerous expert additions to the Vulcan team.







For all our articles on Vulcan Energy see: https://www.nextsmallcap.com/company/vul/



## Euro Manganese Inc (ASX: EMN | TSX-V: EMN)

Capitalising on the once in a generation shift to electric vehicles, battery metals developer Euro Manganese intend to produce battery grade manganese by reprocessing tailings at its Chvaletice Manganese Project (CMP).

EMN has the largest manganese resource in Europe and its location in the Czech Republic positions it right on the doorsteps of multiple battery makers' European factories in world's fastest growing battery and EV market.

Euro Manganese will be re-processing Europe's largest manganese deposit, which is hosted in historic mine tailings, in order to produce high-purity manganese products (HPM) in an economically, socially and environmentally-sound manner.

While critical in the production of steel, Manganese is also used in the storage and supply of electricity from batteries, including rechargeable lithium-ion batteries and non-rechargeable alkaline cells. Manganese enables safe storage of high-energy capacity – often recharged from renewable energy sources.

Demand for high-purity manganese metal and high-purity manganese sulphate is expected to increase dramatically in the foreseeable future, driven largely by an expansion of electric vehicle production and grid storage devices capacity in Europe and other production hubs.

As Elon Musk revealed, Tesla will soon begin using high purity manganese (HPM) to power its next generation of electric vehicles.

Tesla will incorporate this manganese in a series of new battery plants and is





seeking high purity manganese as a primary raw material for battery manufacture.

At least six large battery factories that will consume manganese inputs are located between 200 and 500 kilometres of the Chvaletice Manganese Project. Others are being built across Europe.



Chvaletice Manganese Project as becoming an important and environmentally sustainable part of the international and European lithium-ion battery supply chain.

In addition to its strategic location, what makes this project even more significant for an automotive industry focused on making our world greener, and for



consumers striving to secure sustainably produced raw materials, is that these products would be produced by recycling waste.

Effectively the company will be waste recycling from historic mines, delivering high purity manganese to EU battery makers, whilst at the same time cleaning up what is currently a polluted site for the local community.

Management expects that EMN will become the only primary producer of high-purity manganese in the EU, where 100% of manganese requirements are currently imported.

Currently, the bulk of the world's production of manganese ore occurs in South Africa, China, Australia, Brazil, India and Gabon.

Several prospective customers have expressed interest in procuring high-purity manganese products from the project, and in conducting supply-chain qualification of the products of the proposed Chvaletice demonstration plant.

Attracted by the strategic European position of Chvaletice, the incomparable low environmental footprint of the project (no mining or new solid waste generation), and the exceptional purity of the products that Euro Manganese has produced in previous pilot plant trials, five memorandums of understanding have been signed to date with major customers. These are intended to evolve into long-term offtake agreements.



EMN has initiated a definitive feasibility study and expects construction of the full-scale facility would take between 18 months and 24 months. The company is targeting commercial production by late 2023 or early 2024.

As the processing of manganese is extremely socially and environmentally friendly, it presents an attractive proposition to institutional investors seeking ethical investments.

As investors, we are looking for EMN to start catching up to VUL in the coming months. The stock is already up 54% since we added the it to our portfolio in early September 2020; and has been up by as much as 146% in that time.

For all our articles on Euro Manganese Inc. see: https://www.nextsmallcap.com/company/asx-emn/



#### **Our Investment Process**

Our inhouse team of analysts conduct due diligence and analysis using our 20 point check list.

- 1. Our investment committee makes the final investment decision.
- 2. We aim to increase our investment as the company delivers over time.
- 3. We aim for "free carry" within 24 months of investing.

We put a lot of work into our portfolio companies and we want as many people as possible to discover them.

However, we cannot give you personal investment advice.

When entering any investment, you must have a plan. Many new investors buy a stock without any kind of exit strategy and are therefore more likely to take premature profits, or worse, let run losses.

- How long do you plan on being invested for?
- At what price will you sell out and take some profit?
- At what point will you reassess the investment, sell out and choose another stock?

These are the questions you must ask yourself prior to entering an investment.

Unfortunately, not every stock will increase by 1,000% and be a 'ten bagger'. There are a lot of success stories of people having huge windfalls by choosing the right stock, but the odds are stacked against you.



That said, given the potential for large returns from one single investment, not all of your stocks have to rise to get a good return. This just relies on each stock making up only a small percentage of your portfolio (no more than 20%), and on not falling in love and cutting your losers early.

Investors need to know what exits are available to them and know how to create an exit strategy that will help minimize losses and lock in profits.

It is imperative, due to the high risk nature of investing in small cap stocks, that you 'only invest what you can afford to lose', and don't invest using credit. As always, we invite you to follow what we are invested in, in the nextinvestors.com portfolio.



## **Our Next Battery Metals Play?**

Recognising the huge (and growing) potential on offer for investors in the European electric vehicle and battery metals space, here at Next Investors we are searching for an additional ASX-listed company with exposure to the sector.

We are currently undertaking due diligence on a number of potential portfolio additions but can't yet reveal what's on our watchlist.

However, by subscribing to our (free) mailing list you'll to be amongst the first to hear which ASX-listed companies make the cut... https://www.nextinvestors.com/

We'll also alert you to any other small cap additions to our portfolio, along with updates on those companies that have already been added to our long term portfolio, including Vulcan Energy and Euro Manganese.

## All the best in your investments.

The team at nextinvestors.com