Focused on feeding the EV boom with battery metals, Global Energy Metals understands the value of their Nevada location

Without doubt one of the biggest disruptions this decade will be the rapid move to electric vehicles (EV). As reported here, UBS recently forecasted US$100kWh batteries by 2022, EV/ICE (Internal Combustion Engine) parity by 2024 and that “there are not many reasons left to buy an ICE car after 2025”. Three of the key metals in demand to feed the EV boom will be cobalt, nickel, and copper. Today I discuss a company that has all three as well as some gold potential. The Company still has a very low market cap and has 3 combined projects in safe countries. These include a recently purchased project (Lovelock Mine & Treasure Box) in Nevada only 150 kilometers from Tesla’s gigafactory.

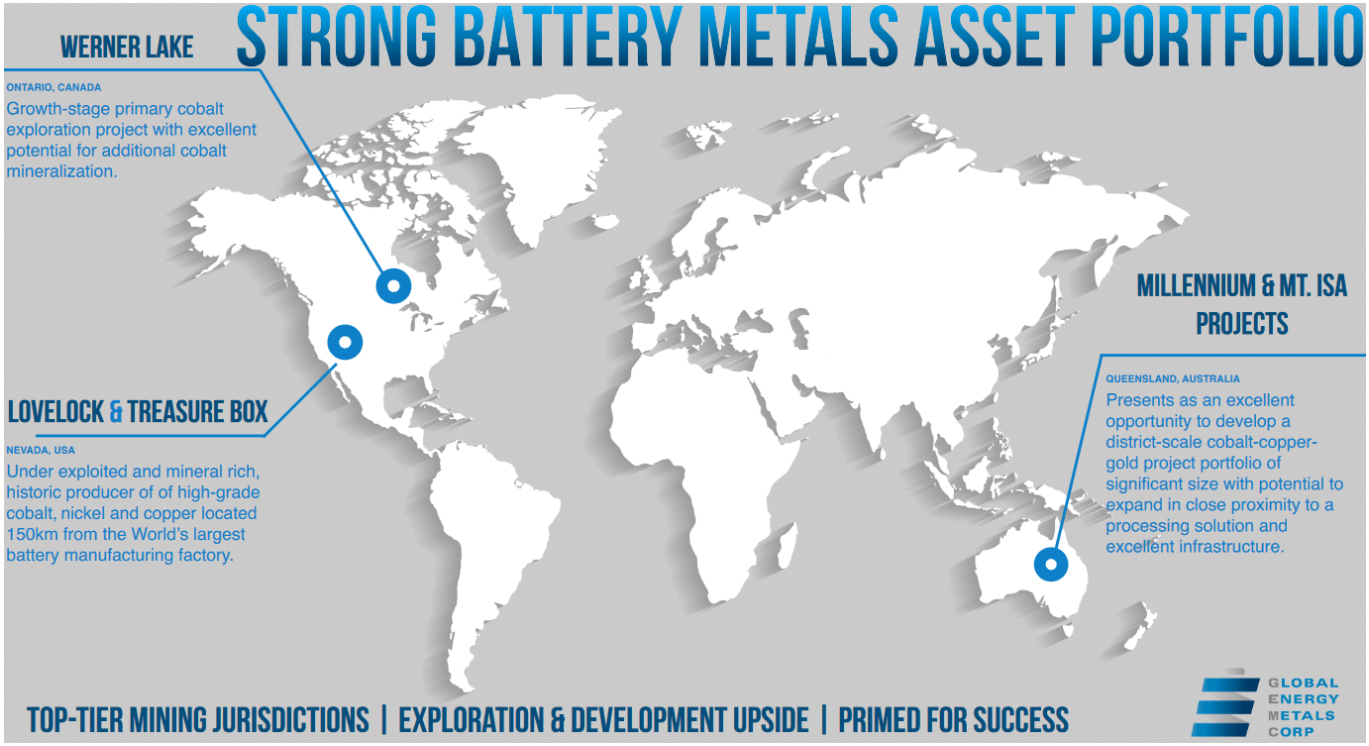
That company is Global Energy Metals Corp. (TSXV: GEMC | OTCQB: GBLEF) (‘GEMC’). Their focus is to build a portfolio of battery metal assets across key locations such as the USA, Canada, and Australia.

GEMC’s 3 projects are:

- Lovelock Mine & Treasure Box Projects – Nevada, USA (85%)
- Werner Lake Cobalt Project – Ontario, Canada (70%)
- Millennium Cobalt Project (flagship) and Mount Isa Cobalt-Copper-Gold Projects – Queensland, Australia (100%)

GEMC’s 3 combined battery metal projects – USA (Lovelock Mine

& Treasure Box), Canada (Werner Lake), and Australia (Millennium & Mount Isa)



Source

The Lovelock Mine & Treasure Box Projects in Nevada USA (85%)

In a very exciting and strategic move recently announced, GEMC has issued shares and made a cash payment as consideration for its acquisition of an 85% interest in the Lovelock Mine and Treasure Box Projects. The properties will be held in GEMC's newly established U.S. Battery Metals Corp., a new U.S. listed vehicle and wholly owned subsidiary of GEMC.

The Lovelock Mine and property consists of approximately 1,400 acres (567 hectares) in the Stillwater Range of Nevada, USA. It was discovered by George Lovelock and Charles Bell in about 1880 and saw limited production of nickel, copper and cobalt beginning in 1883. GEMC reported that "**the general average of the 200 tons shipped in 1886 averaged 14% cobalt and 12% nickel**", which is extremely high grades. After intermittent production no further production from the Lovelock Mine is known for well over a century. Several of the rock samples

collected in 2017 showed strong enrichment in cobalt, nickel and copper.

The Treasure Box Project hosts mine workings from limited copper production, which occurred until early into the 20th century. A reverse circulation hole drilled on the Treasure Box in 1976 returned 1.55% copper over 12.2 metres from a depth of 25.9 to 38.1 metres.

Both projects are at the very early stage but appear to have good exploration potential based on their history. A bonus is their location in mining friendly Nevada, USA, and just 150 kilometers from the Tesla Gigafactory.

The Lovelock Mine & Treasure Box Projects are located effectively on the doorstep of Tesla's Gigafactory in Nevada just 150kms away

Source

Werner Lake Cobalt Project in Ontario, Canada (70%)

The Werner Lake Cobalt Project has an Updated NI 43-101 (2018)

Indicated Mineral Resource of 79,400 tonnes at 0.43% Co not including the 2018 drill program. This is an excellent grade for a western located project. There is also exploration potential for copper and gold.

Millennium Cobalt Project and Mount Isa Cobalt-Copper-Gold Projects – Queensland, Australia (100%)

The Millennium Project is a significant cobalt-copper deposit which remains open for further expansion. There is a historical JORC (2012) Inferred Resource estimate which showed grades of 0.14% Co, 0.35% Cu and 0.12g/t Au (using CuEq cutoff of 1.0%). This historical resource estimate is not yet NI43-101 compliant. GEMC intends to upgrade this resource to a current NI43-101 complaint resource.

The Mount Isa Projects include Mount Dorothy and Cobalt Ridge. Early stage drilling results included 7m @ 0.14% Co, 2.55% Cu, and 2m @ 0.12% Co, 0.13% Cu at Mount Dorothy, and exploration rock chip sampling results of 0.31% Co, 3.63% Cu, 1.25g/t Au at Cobalt Ridge.

Closing remarks

GEMC has a current market cap of just C$2.8m. Perhaps the reason the market cap is so low is that the company has had to endure the past 2.5 year cobalt bear market, and has only recently made the USA acquisition.

Recently, companies with USA EV metal assets have done very well as we saw with Piedmont Lithium, Lithium Americas, Westwater Resources, and many others. For investors that are positive on the outlook for EVs and the key EV metals (cobalt, copper, nickel) then GEMC should definitely be on your radar. Plus there is always the chance of GEMC finding gold.

Dominating global electric car sales – can anyone catch Tesla?

When looking at 2019 electric car sales there can be no doubt that Tesla (NASDAQ: TSLA) is dominating global sales. Tesla is number 1 in global electric car sales, number 1 in US sales, and number 1 in Europe. Model 3 sales are almost triple the next model, and in the US Tesla sales make up a massive 75–85% market share. In this article, I take a look if anyone can catch up with Tesla as we head into the 2020s.

Tesla is number 1 globally with 16% market share, and Tesla Model 3 sales are almost triple the nearest competitor (2019 YTD, as of end of October)

Pl	Global Brands	October	2019	%	P.'18
1	Tesla	16 565	273 627	16	1
2	BYD	12 084	198 426	11	2
3	BAIC	8 601	116 079	7	3
4	SAIC	9 367	107 086	6	6
5	BMW	13 070	103 238	6	4
6	Nissan	5 225	68 969	4	5
7	Geely	3 379	65 339	4	14
8	Volkswagen	6 747	64 477	4	10
9	Hyundai	6 414	62 341	4	8
10	Kia	4 265	46 916	3	19

Pl	Global Models	October	2019	%	P.'18
1	Tesla Model 3	13 359	221 274	13	1
2	BAIC EU-Series	7 623	81 926	5	15
3	BYD Yuan / S2 EV	3 227	64 006	4	17
4	Nissan Leaf	5 041	58 909	3	4
5	Mitsubishi Outlander PHEV	3 583	42 381	2	10
6	SAIC Baojun E-Series	4 636	41 889	2	NE
7	BMW 530e/Le	4 850	41 608	2	12
8	Renault Zoe	3 546	38 722	2	11
9	Hyundai Kona EV	3 335	36 409	2	NE
10	BMW i3	3 305	34 050	2	18

Why is Tesla dominating?

- Brand, style, performance and quality – Model S won the best car ever, and Tesla is now famous for stunning looking cars with top tier performance.
- Range and efficiency – Tesla's cars achieve more range per kWh than any of their competitors. They just won an

award for the most efficient global electric car ever.
- Charging network – Tesla has by far the world's most expansive charging network.

To summarize the above, Tesla is dominating as they are at least 5 years ahead of their competition. Only the Chinese BYD Co., BAIC, SAIC, Geely pose a challenge. The ICE manufacturers have been asleep at the wheel in past years making compliance cars. Volkswagen, BMW, Renault/Nissan, and Hyundai/Kia are making better progress in recent years, but will still take some years to try and catch up with Tesla.

Tesla Model 3 – Recently rated the most efficient electric car ever

Tesla in 2020

By early 2020 we will see Tesla's Shanghai China gigafactory start ramping up production of Model 3. Tesla began Model 3 sales in China in October 2019, with some early production models released in November 2019. Production capacity at the

Shanghai factory is set to rise to 250,000 initially, with a capacity of 500,000 cars a year.

This has the potential to boost Tesla's global dominance even further. By the end of 2020, Tesla will also be selling (or soon to start producing) Model Y SUV. Tesla state: "Model Y production is expected to begin in late 2020 for North America, and in early 2021 for Europe and China."

Tesla in 2021

By the end of 2021, Tesla should be producing the Tesla Cybertruck pickup. Also, Tesla should be starting to produce some small volumes of the Tesla Semi and Roadster 2. The latter two may be delayed into 2022, we will see.

Tesla models to come – Model Y, Roadster 2, Cybertruck, and Semi

Tesla is already leading the pack by a significant margin (5% ahead of BYD co). As we head into 2020 that lead may increase with Model 3 sales starting in China. Once Model Y production

starts sales should surge again, then again with the cyber pickup truck, Roadster 2, and Semi.

Add in Tesla's growing energy storage business with Powerwall, Powerpack, and Megapack and it is hard not to see Tesla continuing to dominate electric vehicles (EVs) and Energy Storage (ES) for the next decade ahead.

Valuation is hard to assess given the accumulating debt, small profit at this stage, and large CapEx ahead. But one thing looks certain – Tesla is set to be the most popular electric vehicle company for the next decade as all its competitors scramble to catch up.

What do you think? Can anyone catch up with Tesla?

Note: The author is long Tesla (TSLA).

Positive feasibility study results reinforce eCobalt's leadership position in U.S. cobalt market

Over the last twelve months, amid a complex interplay of supply constraints and positive demand pressures, the price of cobalt has gone from around $12/lb to just over $27/lb. While we can resultantly expect a number of new projects to begin exploration efforts, there remains a single near term, primary supply of cobalt in the United States. As a company that has recently received confirmation of functional project economics from a positive feasibility study (FS), eCobalt Solutions

Inc. (TSX: ECS | OTCQB: ECSIF) (“eCobalt”) has become perhaps the safest junior cobalt investment that the States has to offer.

Anyone who hasn’t yet heard of the imminent explosion in the electric vehicle market likely doesn’t care, so I won’t go too far into the details, but half of the vehicle manufacturing cost will be taken up by the battery unit, making key ingredients such as lithium and cobalt the next hot commodities. In terms of the manufacturers creating the demand, Tesla may have the Nevada gigafactory, but China has numerous megafactories that deserve far more attention than Mr Musk’s hype-fuelled affairs. The fact that Chinese companies such as CATL and Lishen are already producing large quantities of lithium ion units means that their scaling will have a greater effect on the marketplace than a single factory, regardless of size.

In 2016, megafactories burned through 46,000 tonnes of cobalt, but by 2020, it’ll be more like 76,000 tonnes. eCobalt’s Idaho Cobalt Project (ICP) is slated to provide a weighted average annual production of 2.4M lbs of cobalt, 3.3M lbs of copper and 3,000 oz of gold over a 12.5 year mine life with an estimated pre-production period of 24 months utilizing a 0.25% cobalt cut-off grade. The economic model uses a 34% corporate tax rate and a 7.5% discount rate, resulting in an after-tax NPV of $135.8M and an IRR of 21.3% using an average base case price of $26.65/lb for contained cobalt in cobalt sulphate.

The authors of the study have concluded that it contains adequate detail and information to support a positive outcome for the ICP. Standard industry practices, equipment and design methods were used, and it was further concluded that the ICP contains a viable cobalt and base metal resource that can be successfully mined by underground methods and recovered to concentrate with conventional milling processes. Using the assumptions contained in the FS, the project’s economics merit promoting the ICP to the financing and execution stage.

Moving forward, management's primary goal is to evaluate all opportunities for the ICP. eCobalt is considering securing offtake agreements for cobalt sulphate heptahydrate, which eCobalt has produced from recent metallurgical testwork and shipped to potential offtakers for evaluation. Initial feedback regarding product quality has been positive and requests for additional sample material are being fulfilled, but side projects aside, the fact that cobalt will likely move into supply deficit sometime (very shortly) after 2020 means that those producers lucky enough to be near-term in 2017 should be able to catch the very sharpest edge of the battery upside.

For me, the timing of this operation is just impeccable; looming market expansion and supply constraints will most certainly send explorers running for the drills, but with eCobalt almost powering up the conveyor belts for the first time, this is a company positioned so well as to be difficult to believe. Share performance on eCobalt has been immensely strong over the past two years, but this is nothing compared to what will likely happen over the next five. Congratulations are certainly due for the positive feasibility study results, since this represents a culmination of many years of hard work, but investment is what the ICP needs now, and I don't think it's going to struggle.

Catching the cobalt ride

In the space of a year, the price of cobalt has almost tripled, but the value of shares in eCobalt Solutions Inc. (TSX: ECS | OTCQB: ECSIF) ("eCobalt") have climbed from just ten cents to an impressive C$1.43 as the company confidently marches towards production of a metal that is

increasingly necessary for our most basic of modern conveniences. Those investors who paid attention to our forecasts and bought into eCobalt last year are certainly reaping the most benefit, but is the buy window closed? The short answer is “nope”.

The thing is, since cobalt has always been produced as a byproduct of nickel and copper mining, investors have been largely unable to gain direct exposure to the metal, but since cobalt is essential in the manufacture of a wide range of battery technologies, it has become somewhat of a hot commodity. On the back of near-unanimous forecasts that have consistently promised a serious bull run on all battery materials, eCobalt are one of a handful of companies that identified the need for a pure cobalt play in North America.

The Idaho Cobalt Project (ICP) is the 100% owned by eCobalt, and remains the only advanced stage, near term, environmentally permitted, primary cobalt deposit in the United States. In fact, construction is expected to commence early next year, and the company are currently in the final stages of a full feasibility study, the results of which should be available within the next few weeks. All of this feeds into why I believe the company remains undervalued; operations have yet to commence at both the ICP and the Gigafactory, and once the latter achieves full capacity, the true scale of the cobalt supply deficit will become clear.

It will be at this point, sometime before 2020, when the tech metals markets reach fever pitch and the people who chose to pursue these valuable modern commodities will be in such high demand that this year’s price action will look considerably more sluggish than it does today. Furthermore, cobalt stands to be a particularly dramatic story since, while other battery materials are expecting a surge in demand, both the supply and demand sides of cobalt are undergoing substantial changes.

Historically, the majority of cobalt has been produced from

the copper belt which runs through the Democratic Republic of the Congo, Central African Republic and Zambia, but once again, this is tied to primary copper production and is unlikely to be able to meet the needs of the new-look markets. Moreover, production and offtake from these regions have been severely reduced of late as a result of the revelation that illicit mining practices and human rights abuses were rife. Add this to the frequent conflict that occurs in the region and one can see why North-America stands to benefit.

Normally, institutional investors are wary of small cap stocks, but right now these are, by and large, the only option for direct access to cobalt securities. To this end, eCobalt have received substantial support from Australia's Tribeca Global Natural Resources; the fund focuses on large liquid opportunities in equities, credit and commodities and has been ranked the number one performing hedge fund in all strategies globally in the 2017 Preqin Global Hedge Fund report.

Doing the math on Tesla's potential new demand for flake graphite

In my June 29th article, I wrote about the tear down of a Chevy Bolt which had allowed UBS to review the manufacturing cost of this car's powertrain lower by $4,600. I also told you they were expecting Tesla to break-even on the Model 3 at a sticker price of $41,000 which they deemed likely based on a high take rate of options.

A lower manufacturing cost for the electric powertrain has

caused UBS to review its 2025 EV market penetration forecast. They now see it at 14% globally, up from 9% before.

Knowing that the annual global production of new cars is well over 90M at the moment, it is fair to expect at least 100M by 2025. An increase of 5% in this forecast is thus 5M of additional EVs to be produced every year. In its reporting, UBS also looks at the impact this forecast will have on battery raw materials such as graphite and lithium.

The UBS Global research report is very impressive. The research team looked at pretty much all aspects to be touched by the electrification of transportation. The battery raw materials though were not at the center of the analysis as they are discussed on a mere two of the 95 pages report. They evaluate the Bolt's battery to contain 1.1 kg of graphite per kWh while it is ~0.9-1 kg per kWh for the lithium carbonate equivalent.

UBS is bullish on the graphite and lithium demand. By 2025, they expect the graphite market to grow by 1.7x as per their base case scenario or by 2.0x if the upside scenario plays out. For lithium, this is by 4.5x and 7.5x respectively. The graphite market today is much bigger than the lithium market. UBS evaluates it at $16.2B while it is $2.7B for lithium. They do not mention the proportion of each type of graphite in this total market value. One has to assume that $16.2B is thus the value of amorphous, flake, vein and synthetic markets together. The li-ion batteries, however, use a feedstock of a combination of natural flake graphite and/or synthetic graphite. As amorphous and vein graphite demand are not expected to grow, one can assume that natural flake and synthetic graphite demands will grow in a higher pace. In the case of natural graphite, the flakes need to be further purified, and both natural and synthetic need to be processed (shaping and coating) to produce anode material. Let's look at this for a moment.

The world flake graphite market is roughly 450,000 tonnes on a yearly basis. The growth multiple of 1.7x on the total graphite market by 2025 looks conservative to me when we look at the combined li-ion battery capacity currently in construction or expansion around the world. We know that Tesla's Gigafactory 1 in Nevada needs 50 GWh of li-ion packs as soon as next year. That will give Tesla enough batteries for a production rate of 500,000 cars. 50 GWh is 50,000,000 kWh. The rule of thumb we use at Nouveau Monde Graphite (TSXV: NOU | OTCQB: NMGRF) is 1.2 kg of graphite per kWh, all li-ion chemistries combined. This type of graphite is the heavily processed anode material also known as coated spherical purified graphite (CSPG). Let's keep things simple and let's assume a yield of 50% from the feedstock of flake graphite when CSPG is produced. The math then tells us Tesla could consume up to 120,000 tonnes of new supply of flake graphite as early as 2018. Obviously, this will be split up with synthetic graphite but I think you get the picture. Tesla by itself can potentially generate a source of new demand of 26% with the Gigafactory1 running at 50 GWh as early as 2018. Musk also said they expect the total capacity of the fully completed Gigafactory1 to be 150 GWh at the pack level.

The math

50 GWh or 50,000,000 kWh

Multiplied by 1.2 kg of CSPG

Equal 60,000,000 kgs of graphite anode material.

Multiplied by 2 to account for the 50% yield in producing CSPG from flake graphite.

Equal 120,000,000 kgs or 120,000 tonnes of flake graphite.

We are not even talking about the other 16 Gigafactories that are either in construction or expansions elsewhere in the world. Once completed these 17 Gigafactories will have a

yearly combined potential output of 265 GWh of li-ion batteries and that capacity will be available by 2021, not 2025. When we do the math on 265 GWh, we get 636,000 tonnes of potential new flake graphite demand. Fast forward to 2025, and the UBS forecast of a growth of 1.7x today's graphite market appears conservative to me.

Can Tesla make money by manufacturing the Model 3?

I have just returned from London where I attended an event hosted by Patrick Hummel, the Executive Director and Head of European Autos & Mobility Research at UBS. He presented a detailed analysis on the manufacturing cost of the Chevy Bolt. When they extrapolated this cost to the Model 3, the results were very surprising and demonstrated a way that Tesla may improve its bottom line.

For the purpose of this analysis, UBS Evidence Lab entered into a partnership with Munro & Associates of Auburns Hill, Michigan. This firm specializes in teardown benchmarking and accurate costing in the automotive industry. The project included a breakdown of all electric powertrain-related parts and components as well as the modules related to connectivity/ HMI and ADAS (advanced driver assistance systems). The Munro cost estimates reflect the cost an automaker would pay a supplier. Generally, these costs are calculated by estimating the raw material costs, the amortization of parts tooling, an estimate of labour costs and applying an industry standard mark-up for supplier overhead and profit. To create its estimates, Munro looks for numerous variables, including materials and material comparisons, process, machinery,

tooling, labour (modelled by region of production), geography, competition, and logistics.

The components of the Bolt under analysis turned out to be $4,600 cheaper than previously anticipated. The car had the "Premier" trim but they also did the math for a "naked" Bolt without any options. The contribution margin of the "Premier" would be 14% or $5,063 over all direct costs, while the contribution margin of the "naked" would be 10% or $3,165. At the EBIT level though, both trims are unprofitable although over the next few years, the economics changes and they start turning profitable. They are further expected to generate an EBIT margin of about ~20% by 2025, assuming the sticker price stays the same.

A lower manufacturing cost has an important impact on the total cost (TCO) of electric vehicle (EV) ownership. UBS now sees TCO parity with internal combustion engine (ICE) cars as early as 2018 in Europe. That's 2-3 years ahead of what they thought before analysing the Bolt. They see TCO parity in 2023 for China and in 2025 for the US where gas is cheaper and environment regulations more lenient.

There are many similarities between the Bolt and the Model 3. Thus UBS believe the profitability analysis of the Bolt can be applied to the Model 3. Both cars have similar base version pricing, range/battery capacity, a single e-motor with two-wheel drive and about the same interior space. The differences overwhelmingly play into Tesla's advantage. The Model 3 will enjoy the higher premium appeal of the brand which translate into more pricing power and a longer list of profitable options. The rear-driven Model 3 will use a different battery chemistry to be produced at the Gigafactory which will give Tesla more scale in battery manufacturing. The car's software will be kept current via over-the-air-upgrades and it will ship with autonomy-relevant hardware (cameras, sensors) as standard. Tesla's production target for the Model 3 is more than 10 times what GM has for the Bolt.

Higher production will likely give Tesla better fixed cost absorption.

There are also differences in the distribution model and marketing. The absence of dealerships allows Tesla to receive the full retail price, whereas GM's manufacturer's suggested retail price (MSRP) includes a ~15% mark-up for the independent dealerships and incentives. However, Tesla has higher distribution costs.

UBS believes the biggest uncertainties in applying the read-across from the Bolt to the Model 3 is the battery costs. Since Tesla has guided for a battery size of less than 60 kWh and accounting for cells with better energy density and economies of scales at the Gigafactory, UBS thus believe the Model 3's 55kWh battery pack will be 26% cheaper to build than the Bolt. They also analysed the expected manufacturing cost of the Model 3 against the BMW 330i and they came to the conclusion that Tesla will lose $2,830 at the EBIT level for each "naked" Model 3 they sell, but will break even at a sticker price of $41,000. For example, enabling autopilot functionality shall allow Tesla to make close to a 100% margin on that option alone. UBS thus sees the break-even price of $41,000 likely to be exceeded on a high take rate of options.

Ultra Lithium scores a hat trick

One of the most telling considerations regarding a new discovery is whether it is close to an existing producer with confirmed geology. If there is a mine nearby, and the sites can be shown to share features, it is a massive boost to the

likelihood that the project will succeed. Ultra Lithium Inc. (TSXV: ULI) have placed their bets on a stretch of land just outside of Nevada's renowned Clayton Valley, the home of the only brine-based lithium producer in the United States.

Clayton Valley's geology means that it has amassed significant pools of lithium over time in liquid brine pools, and although explorers have been digging at it for years, Albermarle's Silver Peak mine remains the sole output, so to find an experienced company exploring a promising resource only sixteen miles north deserves at least a little investigation.

Ultra Lithium are busy advancing three distinct lithium-bearing sites right across the Americas, from Canada to Argentina, but are presently focused on the area closest to Tesla's Gigafactory in Nevada, named the Big Smoky Valley project. The surrounding land shares a similar weathering history and geology to Clayton Valley itself, hinting that large quantities of lithium-rich brines exist throughout the area.

The price of lithium carbonate has more than tripled since 2015, and with nothing but growth from the mobile device, electric vehicle and energy storage markets, is expected to continue to rise for a number of years. Current battery products are seen by many as problematic, and researchers the world over are searching for a more reliable and long-lasting solutions. The majority of the ideas currently being circulated depend on battery-grade lithium being available in large quantities, and Tesla's commitment to lithium-ion as a viable long-term answer was evident in the construction of the Gigafactory.

The existence of a lithium battery factory of such a scale means that Tesla will spend as much as it needs to in order to put it to good use. There's no way that Elon Musk is going to spend $5bn on a facility with a limited shelf-life, and the security afforded by this fact alone has spurred lithium

explorers and investors on for years. The management team at Ultra Lithium are ensuring they have a strong spread of assets available to meet the resulting escalating demand in a low-risk manner.

In addition to the Big Smoky Valley brine resource, the company boasts a hard rock project in Canada, and last year acquired a salar in the Argentina section of the famed “lithium triangle.” The diversity afforded by owning multiple resource-types makes for a robust option for equity investors looking to get in at the earliest stages, as production is likely to be achieved at multiple sites. Clayton Valley is home to the only producing lithium mine in the States, and the lithium triangle hosts around half of the world’s lithium reserves; Ultra Lithium have certainly used their experience to set their sights on the most promising areas they could find.

The presence of a management team that features award-winners, stretches of land already famous for lithium production, and a diversified portfolio of assets to develop all lead me to believe that Ultra Lithium will take the junior world by storm over the next few years, confidently butting heads with the heavyweights in the fight for Tesla’s affections.