

NEO Battery Materials Focuses on EV Market Transformation with Silicon Anodes

written by InvestorNews | July 19, 2023

In this InvestorIntel interview, Tracy Weslosky talks with [NEO Battery Materials Ltd.](#)'s (TSXV: NBM | OTCQB: NBMFF) Strategy and Operations Manager Danny Huh about their South Korean commercial plant to manufacture silicon anode materials for lithium-ion batteries. With the pre-construction phase expected to start in August 2023, Danny explains how NEO Battery Materials has accelerated its commercialization efforts with targeted completion of the South Korean plant by the first half of 2024.

Highlighting the need for expanded production capacity due to their growing customer pipeline, Danny discusses NEO Battery Materials' recent decision [to upsize](#) their R&D Scale-Up Centre in "one of the epicenters of battery production, as well as battery research, in South Korea."

Danny goes on to provide an update on their American subsidiary, NEO Battery Materials America LLC (NBM America), to market NEO Battery Materials' silicon anode materials in the US. Danny also discusses their plans to establish another R&D facility in either Ontario or Quebec, Canada, to establish closer ties with battery manufacturers and other battery material players involved in the Canadian EV battery supply chain.

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About NEO Battery Materials Ltd.

NEO Battery Materials is a Canadian battery materials technology company focused on developing silicon anode materials for lithium-ion batteries in electric vehicles, electronics, and energy storage systems. With a patent-protected, low-cost manufacturing process, NEO Battery enables longer-running and ultra-fast charging batteries compared to existing state-of-the-art technologies. Building the first commercial plant in South Korea, the Company aims to be a globally-leading producer of silicon anode materials for the electric vehicle and energy storage industries.

To learn more about NEO Battery Materials Ltd., [click here](#)

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Elcora order is just the beginning of its journey in the manganese market

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Manganese is becoming a key part of the lithium-ion battery market, traditionally used in nickel, manganese, cobalt ("NCM") batteries; but now it is also used in lithium manganese iron phosphate ("LMFP") batteries. This new battery type offers greater energy density (and hence EV range) than the standard LFP battery. Manganese is still largely used in steel, but the battery demand looks set to grow much faster. Overall the global

manganese market is expected to grow at a CAGR of 5.5% from 2023 to 2027.

Biden Leads the build-out of an EV market critical minerals supply chain outside of China parade

written by Matt Bohlsen | July 19, 2023

For the past decade it has been China that has massively supported its battery and EV industry resulting in China now being by far the leader in EV production globally; and quite frankly a threat of totally dominating the future global auto industry as it goes electric.

Now, finally, the tide is turning with the Western governments starting to make very significant moves to support the EV and energy storage sectors (including batteries & the electric grid) and its supply chain. Today's article gives a summary of major western governments' new policies to support the EV and energy storage supply chain so far in 2022.

USA

As [announced](#) last week the DoE awarded **US\$2.8 billion** of grants to accelerate U.S. manufacturing of batteries for electric vehicles and the electric grid. As [stated](#) by Energy.Gov.:

"The 20 companies will receive a combined US\$2.8 billion to

build and expand commercial-scale facilities in 12 states to extract and process lithium, graphite and other battery materials, manufacture components, and demonstrate new approaches, including manufacturing components from recycled materials.”

A key component of the US\$2.8 billion in grants is that they will be matched with [US\\$9 billion](#) in recipient funds. Furthermore, the 20 company's projects are spread across the key areas of the battery supply chain with the key purpose to build a new U.S lithium-ion battery industry.

As shown below some of the winners were lithium companies Albemarle Corporation (NYSE: ALB) and Piedmont Lithium Inc. (Nasdaq: PLL | ASX: PLL), spherical graphite (soon to be a producer) company Syrah Resources Limited (ASX: SYR), nickel junior Talon Metals Corp. (TSX: TL0) and several others.

Location map showing the planned project locations of the DoE project grant recipients



Source: [Energy.Gov DoE](#)

Earlier in 2022, the U.S government announced funding in the [Inflation Reduction Act](#) of [US\\$369 billion](#) towards clean energy and climate change initiatives.

The Biden Administration is certainly leading the West in supporting the environment and building up a new clean energy industry with factories and jobs in the USA.

Canada

Canada has recognized that it is extremely well positioned to be a [supplier of EV metals](#) and components due to its inherent

wealth of critical raw material resources. In the 2022 Canadian Budget the government allocated an additional [“C\\$3.8 billion](#) for critical minerals, including those that feed into clean technologies”. Clean Energy Canada [stated](#):

“This new funding will help Canada realize its vision of building an “end-to-end” battery supply chain through which Canada can do it all, from sourcing the materials to building the parts, batteries, and clean cars.”

Specifically, the Canadian government will spend up to [C\\$1.5 billion](#) over seven years, starting in 2023-24, for infrastructure investments that would support the development of the critical minerals supply chain, with a focus on priority deposits. Many very promising Canadian projects, such as Frontier Lithium Inc.’s (TSXV: FL | OTCQX: LITOF) PAK Lithium Project, need roads to be built to help bring their projects to production. Canada has a plan to make this happen, albeit rather slowly.

Australia

The Australian government under Prime Minister Albanese has brought a new focus towards EVs and climate change. As announced last week the [“support for critical minerals breakthroughs”](#) policy is designed to accelerate the growth of the critical minerals sector. The announcement [stated](#):

“The Strategy will complement other Government initiatives including the National Battery Strategy and the Electric Vehicle Strategy. The National Reconstruction Fund will include the \$1 billion Value Adding in Resources Fund which will work alongside the \$2 billion Critical Minerals Facility.....The Government will also allocate \$50 million over three years to the Critical Minerals Development Program for competitive grants to support early and mid-stage critical minerals projects, building on the

\$50 million recently committed to six key projects across Australia.”

The winning “six key projects” [are owned by](#) Alpha HPA Limited (ASX: A4N), Cobalt Blue Holdings Limited (ASX: COB), EQ Resources Limited (ASX: EQR), Global Advanced Metals Pty Ltd, Lava Blue Ltd., and Mineral Commodities Ltd. (ASX: MRC).

Europe

Last month the European Commission [announced](#) a new policy proposal called the ‘European Critical Raw Materials Act’. The announcement emphasized Europe’s need to secure a safe and secure supply of critical minerals, notably lithium and rare earths. The announcement [stated](#):

“Lithium and rare earths will soon be more important than oil and gas. Our demand for rare earths alone will increase fivefold by 2030. [...] We must avoid becoming dependent again, as we did with oil and gas. [...] We will identify strategic projects all along the supply chain, from extraction to refining, from processing to recycling. And we will build up strategic reserves where supply is at risk. This is why today I am announcing a European Critical Raw Materials Act.”

The European Critical Raw Materials Act is still being developed but it looks like it will follow along similar footsteps as the U.S Inflation Reduction Act, supporting and building local supply chains, but also relying on ally countries. The European Commission [stated](#) one objective as:

“To facilitate the roll-out of targeted raw materials projects in the EU, the Commission should be empowered to list Strategic Projects – which would be labelled as of European interest – based on proposals from Member States. These projects could benefit from streamlined procedures and better access to

finance.”

An excerpt from the recent 2022 State of the European Union address discussing the need for Europe to source critical raw materials



Source: [European Commission](#)

Some possible winners might be rare earths processing company [Neo Performance Materials Inc.](#) (TSX: NEO) and European Metals Holdings Limited (ASX: EMH | AIM: EMH | OTCQX: EMHXY). The former owns [the only commercial rare earth separations and rare metal processing plant in Europe](#) and the later has a JV 49% ownership of the [largest hard rock lithium project in Europe.](#)

Closing remarks

The Western governments have woken up from a decade long slumber and are now finally moving to build key critical raw material, battery, and EV supply chains both locally and with ally countries. Project funding and permitting are key obstacles being addressed as they are the reason why much of USA and Europe have virtually no EV supply chain today.

As we approach COP 27 starting on November 6, the 2022 awakening of the Western governments should lead to one of the biggest investment themes this decade. That is, investing in quality companies that are likely to succeed in supplying the EV and energy storage supply chains as the Western world looks to gain independence from China.

InvestorIntel has been bringing attention to these companies for more than a decade and provides the ideal starting point to research and learn about promising critical raw materials companies. Stay tuned.

Disclosure: The author is long Albemarle Corporation, Piedmont Lithium Inc., Syrah Resources Limited, Frontier Lithium Inc., Cobalt Blue Holdings Limited, European Metals Holdings.

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Molten Metals sees opportunity in bringing antimony projects back into production

written by | July 19, 2023

[Molten Metals Corp.](#) (CSE: MOLT) is a relative [newcomer](#) to the world of antimony (Sb) and tin (Sn). Formed by Christopher Ecclestone in 2021 to look at near term production of lesser-known battery material antimony, the focus of the company is to look at previously operating mines to develop [non-Chinese sources of material](#).

Molten Metals' first target was the historic [West Gore antimony/gold mine](#) in Nova Scotia, Canada, that produced

antimony and gold from the 1880s to 1917. From 1915 to 1917 operations were expanded, and over 35,000 tons of ore were milled yielding 7,761 tons of concentrate at 46% antimony. The total amount of gold obtained from the deposit up to 1917 was 6,861 oz. According to reports, high grade material (46% Sb) was shipped to England but lower grade material was kept on site, which would be readily available with no mining cost. The mine site is located one hour by road north of the provincial capital, Halifax.

Molten Metals' second move was to incorporate a company in Slovakia, Slovak Antimony Corporation. Slovakia was the key source of antimony for the Soviet Union. They have purchased a processing plant in July in Eastern Slovakia. It is planned to process material from the tailings from their Tienesgrund project. Samples from this project show antimony levels of 39.4% and 9.69 g/t of Au.

I am a strong believer in looking at ex-producing mines or mine tailings as new sources of raw material. Typically, they have infrastructure and possibly tailings that were processed using old technology which can be economically recovered with today's improved processes.

The largest applications for metallic antimony are in alloys with lead and [tin](#), which have improved properties for [solders](#), [bullets](#), and [plain bearings](#). It improves the rigidity of lead-alloy plates in [lead-acid batteries](#). [Antimony trioxide](#) is a prominent additive for [halogen](#)-containing [flame retardants](#). Antimony is used as a [dopant](#) in [semiconductor devices](#). It is increasingly important as an essential element in high-capacity molten metal batteries. Antimony production in 2016 was 130,000 tonnes with China producing 100,000 tonnes. A recent report from the USGS shows that total global production of antimony fell to 110,000 tonnes in 2021, and Chinese

production dropped to 60,000 tonnes, with Russia in second at 25,000 tonnes and Tajikistan at 13,000 tonnes. Some of the reduction in China was due to COVID production problems and China's focus on environmental issues. As a result, antimony prices rose from an average of \$2.67 per pound versus \$6.65 per pound in October of last year.

A growing fear is that China can use rare earths as a weapon against the USA by throttling back or even banning rare earth exports to the USA. However, I believe there would be a more direct and immediate impact on American industry if China curtails shipments other key minerals like antimony, which would result in problems for the manufacturing of bullets and electronics plus lead-acid batteries. The USA buys components and assemblies with rare earths in them but not much of key rare earth oxides/carbonates. However, antimony goes directly into manufacturing companies like East Penn, which is the world's largest lead-acid battery producer. It is not hard to imagine the consequences of a sudden reduction in bullet manufacturing and batteries for new vehicles.

On the corporate side, Molten Metals [recently announced](#) additions to their advisory board. An impressive group has been assembled including Donald Sadoway, an inventor of the liquid metal battery for large scale stationary storage and Professor Emeritus in the Department of Materials Science and Engineering, Massachusetts Institute of Technology ("MIT"). Also on the board is Anthony Balmmeis who is active in both private and public companies and David Henderson who is very familiar with opaque markets and critical materials over his 35-year career. The fourth member is Alon Davidov, an Angel investor in several companies in the construction-tech, FMCG, natural resources and media industries.

There is much to applaud in Molten Metals' enlightened approach

to pursuing opportunities in some of the less-followed elements. I am sure there are other opportunities out there in tailings and old mines which traditionally have been shunned by the markets just waiting to be recognized for their potential.

Argentina, the new Saudi Arabia of Lithium

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Former Chinese leader, Deng Xiao Ping, is most famous in mining circles for his oft-repeated aside from the 1980s that whereas “Saudi Arabia has oil, China has Rare Earths”. It didn’t grab much attention at the time because Rare Earths were largely a mystery to most listeners and, moreover, were not worth all that much and did not have many day-to-day applications then besides bringing red colors to one’s cathode ray tube television. The rest is history with the final wake-up call in 2009-10 as to what Deng was actually referring to in strategic terms.

Now we can add a third leg to the mantra because Argentina has lithium and oh, potentially, how much lithium it does have! In theory, Chile was the place to source lithium from brine lake lithium deposits (salares), but in a curious own-goal situation, Chile has squandered that advantage by trying to keep a tight control on the number of players and advantaging the two incumbents. Predictions are that Argentina will overhaul Chile in terms of lithium production by 2030. The result of the Chilean torpor at welcoming new entrants is that the surprisingly more laissez-faire attitude in Argentina has made it the go-to place for those wishing to stake positions in

salares. Argentina has become something like, to paraphrase Deng, the Saudi Arabia of Lithium.

The Fluctuating Fortunes of Salares

One of the paradoxes of the middle of the decade was the “talking down” of salares as being in some way “too difficult” or too “long term”. Having said that though, several of the highest-flying stories in the First Lithium Boom such as Orocobre Limited, Galaxy Resources Ltd., and Lithium Americas Corp. were salar-based. Back in that boom, and its current revival, there was/is a staking boom in the Argentine part of the Lithium Triangle of Chile, Argentina, and Bolivia that makes the California gold rush in the 1850s pale into insignificance. Explorers, quite literally, cannot get enough of Argentine lithium territory.

The caution relating to salares exploitation was powered by the mishaps that befell Orocobre and Rincon. However, in both these cases, the lessons learned meant that others will have the benefit of their difficult experiences. The argument that there is a longer lead time for salar development (due to the need to kickstart the evaporation process) does not hold much water (pardon the bad pun) due to the much longer (and more expensive) drilling and resource estimation phase at a hard rock deposit and the much higher development costs at underground mines.

The downfall firstly of Canada Lithium, after the end of the First Lithium Boom, and then the travails of Nemaska, at the beginning of the latest recovery, have cast a pall in many investors’ minds over large-cap underground spodumene mines.

The Road Most Taken

Despite perennial concerns about Argentina’s political direction, the metaphorical road to the Argentine salares opportunity has become more like a Los Angeles expressway in

peak hour, of late. Argentina has been in the Lithium game for decades, so is no newbie, but was always perceived as playing second fiddle to Chile. With opportunities to enter and develop new projects in Chile finding constant stones in the road, several of Argentina's Andean provinces have become veritable boomtowns for the Great & Good of the global EV revolution.

The long-established Livent (formerly FMC) was joined by Orocobre and Galaxy Resources (which then merged), and then a stampede of the elephants in the Lithium space occurred with Posco, Ganfeng, Tianqi and most recently Zijin Mining Group resetting the bar higher with its [stunning move](#) on [Neo Lithium Corp.](#) (TSXV: NLC | OTCQX: NTTHF).

Then in November of 2021 TSX-listed miner Lithium Americas offered \$400 million in shares and cash for Vancouver-listed Millennial Lithium Corp., the third offer for the company this year following one by China's largest battery maker CATL and another one by Chinese lithium producer Ganfeng Lithium. A feeding frenzy has begun.

Beyond these majors, there is an array of junior players hoping to replicate the Neo Lithium success story. One of these stocks that has come to attention lately is [Edison Lithium Corp.](#) (TSXV: EDDY | OTCQB: EDDYF).



Into the Fray

In mid-June 2021, Edison Cobalt Corp. as the company was then known, announced that it had entered into a Definitive Purchase & Sale Agreement to acquire Resource Ventures S.A. (ReVe), an Argentine corporation that owns or controls the rights to over 148,000 hectares (365,708 acres) of prospective Lithium brine claims in the province of Catamarca, Argentina. The claims are

principally located in the two geologic basins known as the Antofalla Salar and the Pipanaco Salar in the famed Lithium Triangle.

The Transaction

To effect the purchase Edison inked an agreement to acquire ReVe and a 100% interest in its properties for a purchase price of \$1.85 million paid by the issuance of ten million common shares of the company at a deemed price of \$0.185 per share. All securities issued pursuant were subject to a hold period of four months from the date of closing.

The Political Scene

For most of the last two decades, Argentina has been ruled by irregular iconoclastic governments, most recently by the dynasts of the Kirchner family and before that the Duhalde regime the country with a brief interlude of fiscal conservatism under Mauricio Macri, elected President in the last quarter of 2016.

The major bugbears of foreign miners operating in the country have been:

- Currency controls – though the devalued Peso results (in theory) in lower costs for project development
- Export taxes on concentrates
- Import restrictions on equipment

The Macri regime reverted these and this coincided with the Second Battery Metal Boom of 2017. Though that boom proved to be fleeting, it reenergized players in the Argentine space.

The Macri regime fizzled after three years and the Kirchnerites were back in power, but mining (and particularly Lithium) scarcely missed a beat with the surge of development of salares (and increasingly large copper projects) at the current time.

There is a good case to be made that the relative lack of salares moving to production pre-2019 was due to the double negatives of the low lithium price between 2011 and 2016 and the death throes of the first Kirchnerite period making Argentina an unattractive place to advance projects. Pricing has resolved itself and the Argentine government is welcoming Lithium players with open arms.

Edison Lithium's pivot from Cobalt to Lithium looks like a prescient move. While Cobalt is much sought after it is seldom found. Unicorn hunting can be a long and expensive sport. With Argentina's rapid evolution as the "Saudi Arabia of Lithium" who could fault the company moving into the territory and building up a substantial position?

It's still early days of course with exploration, resource definition (and presumably more territorial expansion) still lying ahead. However, in elephant country, one is more likely to find elephants than gerbils. The hunt is on at Edison Lithium.

Jack Lifton on why President Biden's EV Plan for America simply does not add up

written by Jack Lifton | July 19, 2023

American President Biden has decreed that by 2030 one-half of all new American car/truck production shall be EVs. If 2030 is a 20 million car/truck build year this would mean that it would also be a 160,000 tons of lithium ($10,000,000 \times 16\text{kg}$

Li/car/truck =160,000 tons) utilization year in and for the USA just for batteries for those cars. **This is twice as much [lithium](#) as was produced globally in 2020.** China, of course, has already committed to producing that number of EVs in 2030, but, unlike the free market USA, it, China's industrial policy long-term planning has already accumulated 60% of current global lithium production and an even higher percentage of lithium processing capacity for battery materials. Although it is very likely that Chinese BEVs will be sold in the USA by 2030 it is very unlikely that domestic American lithium-ion battery makers will fare well in price or volume with their Chinese competitors.

The increasing costs of maintaining global lithium production even, if possible, at twice current levels and the decline of resource grades that is inevitable combined with the increasing proportion of lithium necessary for even a low percentage conversion of the existing global ICE fleet are the reasons that the world's largest EV battery maker, China's CATL, is developing a sodium-based rechargeable battery for mass production and use. It will be used for stationary storage especially in China where vast spaces and large populations are still off the grid and where China plans to use wind and solar to feed the grid during the day and will conserve precious lithium by using sodium for stationary storage batteries to be able to maintain consumer electric power around the clock.

America's [Global Environmental Elites](#) (GEEs) do not understand China's long-term planning for the production of energy, its use, or distribution, so they cover their ignorance by simply declaring China to be the world's biggest "carbon" emitter, and ignore the reasons for China's long-term plan to reduce its dependence on fossil fuel energy production not to eliminate it! This ignorance is making America and the west increasingly unlikely to be able to compete industrially with China much longer.

The production of base, structural metals, such as iron(steel) and aluminum and the key technology metal, copper, require uninterrupted high-density baseload, which cannot be supplied by wind or solar even with battery storage. It is the same for heavy (cars, trucks, large scale machines) industrial manufacturing. The Chinese are now leading the world in these categories and in their maintaining and even increasing their baseload superiority. **Chinese electricity production is today twice that of the USA, and China alone produces 1/3 of the globe's electricity. This is not by chance.**

Nearly 10% of all of the electricity generated within China goes to the production of iron and steel, aluminum, and copper. To compete in volume production would require 20% of all of the power generated in the USA as well as a massive increase in mining. Economically, of course, this makes no sense. I note also that the Chinese steel industry produces enough steel each day and a half to build an entire American navy. Do we really want to decrease our capacity to make structural metals?

Be careful what you wish for.

Can Avalon Advanced Materials ride the lithium tidal wave?

written by InvestorNews | July 19, 2023

Lithium miners have been the best performing sector of almost every sector of the stock market over the past year. This has been due to a 'tidal wave' of new lithium demand as electric vehicle (EV) sales dramatically increased over the past year.

For example global electric car market share more than doubled from [4.2% in calendar year 2020](#) to [8.7% in the month of June 2021](#). This has led to a surge in lithium demand and subsequently lithium prices in 2021.

Lithium prices (1 year chart) have risen rapidly due to a massive demand increase from booming EV sales



Source: [Trading Economics](#)

One under the radar lithium junior is [Avalon Advanced Materials Inc.](#) (TSX: AVL | OTCQB: AVLNF) (“Avalon”). Avalon has six projects, providing investors with exposure to lithium, tin and indium, as well as rare earth elements, tantalum, cesium and zirconium. Avalon is currently focusing on developing their Separation Rapids Lithium Project near Kenora, Ontario, while looking at several new project opportunities, one being a lithium hydroxide (and other materials) refinery in Thunder Bay, Ontario, Canada. They are also working to advance their Lilypad Cesium-Tantalum Project, in Ontario, Canada.

Separation Rapids Lithium Project (100% owned; Ontario, Canada) + possible lithium battery materials refinery (Thunder Bay, Canada)

Avalon completed a [PEA](#) of their 100% owned Separation Rapids Lithium Project in 2018, resulting in a pre-tax NPV8% of [\\$156 million](#), post tax IRR of 22.7%, CapEx C\$77.7 million with a 20 year mine life.

Then in March 2021, Avalon [announced](#) a Letter of Intent (“LOI”) with Fort William First Nation (“FWFN”) to collaborate on the development of a lithium battery materials refinery located on industrial lands owned by FWFN in Thunder Bay, Ontario. As

stated in the announcement: “This facility would be designed to accept lithium mineral concentrates from Avalon’s Separation Rapids Lithium Project (70 km north of Kenora) and Rock Tech’s Georgia Lake Lithium Project (145 km northeast of Thunder Bay), as well as potentially other emerging, new lithium mining operations in northern Ontario, to produce lithium hydroxide and other lithium battery materials.”

Then in May 2021, Avalon [reported](#) that their recent process testwork using dense media separation (“DMS”) technology had proven to be successful at producing a high-quality petalite lithium mineral concentrate (4.0% – 4.2% Li₂O) from their Separation Rapids Lithium Project. The concentrate is suitable for the needs of specialty glass-ceramic end-users. As a result, Avalon is now looking at acquiring their own DMS equipment so they can more quickly meet the needs of the many end-users that have expressed interest over the years in their petalite product samples. Avalon will also resume exploration work this summer on the western part of the Separation Rapids property to further work towards growing their resource.

Avalon Advanced Materials Separation Rapids Lithium Project – PFS & PEA completed



Source: [Company presentation](#)

[Announced](#) in July 2021, Avalon is now in active discussion to potentially progress their lithium materials refinery in Thunder Bay. The release [stated](#): “On the lithium battery materials market development work, Avalon continues to engage with potential customers looking for new supply sources and are in active conversation with one group in Europe. With a firm commitment on off-take, Avalon can then proceed with its plans for establishing a lithium refinery in Thunder Bay.”

Lilypad Cesium-Tantalum Project (100% owned; Ontario, Canada)

Avalon's Lilypad Property, located 150 km northeast of Pickle Lake, Ontario, is an exploration stage project with cesium-tantalum-lithium mineralization. It has some potential to be a secondary lithium supply source for Avalon, however, cesium and tantalum are the key products for now.

In July 2021 news, Avalon [stated](#): "Following the closing of the recent flow-through financing, an exploration work program was initiated in June on its 100% owned Lilypad Cesium-Tantalum Project involving re-establishing a field camp and new grid on the property **in preparation for detailed mapping and geochemical sampling to commence later this month**. Additional cesium mineralized rock was collected from the Pollucite Dyke for continued process research on techniques to efficiently concentrate the rare cesium mineral pollucite, which continues to be in high demand. **Drilling is planned for later this year.**"

Avalon Advanced Materials project pipeline



Source: [Company presentation](#)

Closing remarks

As evidenced by a recent record lithium spodumene spot market price achieved this past week of [US\\$1,250/t](#) (around 3x the contract prices from 12 months ago), there is now a new realization that lithium supply is critically low. This means it is a great time to be a lithium miner and it generally acts to boost the sentiment of the sector thereby helping lithium juniors raise capital and hopefully reach production.

Avalon Advanced Materials is not only a junior lithium miner, as they have a total of 6 projects across multiple critical metals

and rare earths. Key critical metals Avalon has are lithium, tantalum, cesium and zirconium; all are on [the list of U.S critical materials](#). The Company trades on a market cap of only C\$52 million. One to watch.

With lithium demand forecast to increase 10x's this decade, Neo Lithium steps up to the mark

written by InvestorNews | July 19, 2023

2021 Electric vehicle (EV) sales continue to smash records, notably in China and Europe. Global electric car sales for March 2021 were [up 173% YoY](#), reaching 8.2% share, and the second best month ever. Europe sales [rose 169% YoY](#), reaching 16% share, while China sales [rose 244% YoY](#), reaching 11% share. In April China EV sales jumped [173% YoY](#) and reached 10% market share. Booming EV sales means booming demand for EV metals, such as lithium, cobalt, graphite, nickel, manganese, copper, and neodymium and praseodymium (NdPr).

As a result of the impending decade long EV boom analysts continue to increase their EV metals demand forecasts. [UBS](#) and [others](#) are **forecasting lithium demand to surge 10-11x this decade**. To meet the surging demand new lithium mines will be needed, especially from 2023 onwards as the market potentially heads into deficit. One lithium junior, with the world's largest battery manufacturer CATL as a strategic investor, looks poised

to potentially fill this supply gap and become a 2023/24 lithium producer.

The company is [Neo Lithium Corp.](#) (TSXV: NLC | OTCQX: NTTHF).

Neo Lithium 100% own, and has fully paid, their 3Q lithium brine project in Argentina. The 3Q Project is very large in size and has the 4th highest lithium grade globally, or the 3rd highest if counting only their high grade core. Proven & Probable reserves are [1.3 million tonnes of Lithium Carbonate Equivalent \(LCE\)](#). The M&I Resource is 4.0 million tonnes of LCE. The mine life is forecast at [35 years](#) taking into account only 1/3 of the known resource. The 3Q Project has the lowest level of impurities globally which should result in industry low operating expenses. The 3Q Project has an [outstanding PFS](#), including a post-tax NPV8% of US\$1.144 billion, post-tax IRR of 49.9%, and CapEx of US\$319 million, based on 20,000t pa LCE production, and assuming a life of mine lithium carbonate average price of US\$11,882/t. Current lithium carbonate prices are at [US\\$13,000/t](#). Payback on the 3Q project is just 1 year and 8 months. The 3Q project is at a quite advanced stage with pilot ponds and established infrastructure.

[Final Environmental permit](#) for construction has been presented to the government and is in the process of approval. CATL now has [board representation](#) (Mr. Tang Honghui) and input into the current Feasibility Study (FS) due for completion in Q3 2021. CATL has a board nomination right pursuant to the strategic investment and investors rights agreement signed with the Company that closed on December 16, 2020. After the FS is released and assuming the environmental permit is granted, it would be fairly reasonable (not guaranteed) to expect some major moves forward towards project partner/project funding, most likely from CATL or affiliated funding groups.

In Neo Lithium's most recent news the Company [announced](#) that they are expanding and optimizing the Pilot Ponds at the 3Q Project. Neo Lithium [stated](#):

"The Company completed five years of pilot pond evaporation and design to be able to bring the latest technology to the new pilot pond system. Results confirm less than one year of evaporation from in-situ brine to final ~3.6% lithium brine concentration prior to shipment to the carbonation plant. The new pilot pond system will test different technologies to lower total cost of industrial scale ponds by making ponds smaller and more efficient."

Neo Lithium COO, Gabriel Pindar, [stated](#):

"As we get closer to completing the Definitive Feasibility Study, we move our pilot system to a final piloting system that is efficient, lower cost, consumes no fresh water or reagents and requires less capital cost to produce than other comparable projects."

Neo Lithium look set to be the next major lithium brine producer after LAC/Ganfeng



Source: [Neo Lithium website](#)

For lithium brine producers the two main aspects are the brine evaporation using evaporation ponds, then the final processing plant where impurities are removed. Neo Lithium is advancing very well on the ponds and once funded for project construction can build the processing plant. Neo Lithium has already proven they [can produce battery grade lithium carbonate at 99.599% purity](#).

Closing remarks

It looks like all the pieces of the puzzle are now coming together very nicely for Neo Lithium. Successful pilot ponds achieving fast brine evaporation (pilot scale), low impurities and ability to produce battery grade lithium carbonate, rising lithium demand and prices, abundant cash reserves (as of April 1, 2021 cash was C\$59 million) and the world's largest battery manufacturer CATL as a strategic investor and taking a seat on the board.

[CATL recently increased their initial investment](#) to maintain its 8% ownership in Neo Lithium with a C\$2.6 million investment at C\$3.05/share. When the world's largest lithium-ion battery manufacturer chooses you there can be no greater endorsement.

Neo Lithium trades on a market cap of just C\$348 million and remains one of the very best potential near term lithium producers for investors to consider. 2021 should be a landmark year for Neo Lithium.

Disclosure: The author is long Neo Lithium Corp. (TSXV: NLC).

Dan Blondal on Nano One's breakthrough in lithium-ion cathode materials and the 'million mile battery'

written by InvestorNews | July 19, 2023

"The idea of a single crystal cathode has been around for a while but the conventional methods for making them are very

expensive. You want to spend as little time in the furnace as possible and we have developed a way to do that. Our crystals form very readily in the furnace and they self coat in the furnace so you don't have to have a secondary coating process. We have simplified the process. It is less complex and because the crystals form quickly we get an inexpensive way of making them that doesn't have the downside of spending too long in the furnace." States Dan Blondal, CEO, Director & Founder of [Nano One Materials Corp.](#) (TSXV: NN0), in an interview with InvestorIntel's Tracy Weslosky.

Dan went on to say that even with single crystal there is degradation but if you coat that single crystal the cathode material lasts four times longer. Dan further added, "by making the material more durable you can get many more charges out of it. The electric battery that goes into a car is somewhat restricted by the durability of the materials. If the material is not very durable then you have to make the battery a bit bigger. A more durable battery allows you to either drive a million miles which is important for taxi drivers, buses and utilities, or charge is much faster because as the battery is more durable it can take more aggressive charge or drive a little bit further everyday."

To access the complete interview, [click here](#)

Disclaimer: Nano One Materials Corp. is an advertorial member of InvestorIntel Corp.

Well partnered (and well-funded) with key battery suppliers, Nano One charges forward on 'Mission Possible'...

written by InvestorNews | July 19, 2023

Nano One secures an additional \$11 million in cash to provide a multi-year funding runway for their work on lithium-ion battery cathodes

For companies that are not yet producing revenues, the threat of running out of funding is a significant business risk. As the COVID-19 disruption deepens and some companies run low on cash, Nano One Materials has secured an additional \$11 million in funding which will provide them with “a multi-year runway extending over three years.” This essentially removes the short-term funding risk making the stock a safer buy for investors.

[Nano One Materials Corp.](#) (TSXV: NNO) is working on making lithium-ion batteries better. Nano One has developed patented and scaleable industrial processes for producing low cost, high performance, battery materials typically used in the battery cathode. The processing technology enables lower-cost feedstocks, simplifies production, and advances performance for a wide range of cathode materials.

Nano One is working to make lithium-ion battery cathodes cheaper and better



[Source](#)

Nano One's recent funding success

- [\\$11m](#) raised from private and institutional groups
- [\\$5.25m](#) grant from Sustainable Development Technology Canada (SDTC)

In connection with the closing of the \$11m financing, Nano One issued 9,565,000 units at a price of \$1.15 per unit with each unit comprising of one common share in the capital of the Company (the "Shares") and one-half of one common share purchase warrant (the "Warrants"). Each whole Warrant is exercisable into one share at an exercise price of \$1.60 per until February 21, 2023.

The proceeds from the financing will be used for corporate development, facilities expansion, technology advancement and general working capital.

Nano One CEO Mr. Dan Blondal [stated](#):

*"We are thrilled with the capital market response to this latest placement. The proceeds from this financing will also be leveraged by an additional five million dollars in non-dilutive and non-repayable contributions, that was awarded to Nano One by Sustainable Development Technology Canada in May of 2019. **The sum of sixteen million dollars** enables us to accelerate business plans and co-development activities including those already underway with Volkswagen, Pulead, Saint-Gobain and other undisclosed global automotive interests."*

Note: Nano One also receives financial support from the National Research Council of Canada Industrial Research Assistance Program (NRC-IRAP).

Nano One – Why invest?



Nano One's development partners

Nano One is [very well partnered](#) into key battery suppliers and some car manufacturers, including several big names – Pulead, Saint-Gobain and Volkswagen. Nano One is working with Pulead to develop better LFP batteries, with Saint-Gobain to improve thermal processing and to develop enhanced high temperature cathode processing, and with Volkswagen to develop advanced materials for next generation batteries.

Apart from the partnerships discussed above and other undisclosed opportunities, Nano One has 16 patents with 30+ patents pending.

Nano One's business model

Nano One's goal is to achieve [up to \\$1 billion in licensing fees revenue](#) for their patented cathode technologies, by tapping into the rapidly growing cathode market that is forecast to be worth \$23 billion by 2025.

Nano One is tapping into the battery cathode market which is forecast to be worth \$23 billion in revenues by 2025



[Source](#)

Closing remarks

Nano One is ticking all the right boxes.

- Great patented technology – Check.
- Industry leading partners (Pulead, Saint-Gobain and

Volkswagen) – Check

- Funding secured (\$16 million in total) – Check
- Government backing – Check

With a potential up to \$1 billion licensing fees opportunity and a market cap of just C\$80 million, it is not too late for investors to get on board. If Nano One succeeds it will have been a great time for investors to have bought in now after the recent dip. Execution risk remains, but the rewards look large if Nano One can pull it off.