Codemge's CEO on Leveraging Minas Gerais' Position as Brazil's Niobium Mining Powerhouse

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In this interview with Critical Minerals Institute (CMI) Director Melissa (Mel) Sanderson at PDAC 2024, Thiago Coelho Toscano, CEO of Companhia de Desenvolvimento de Minas Gerais (Codemge), discussed the strategic endeavors and visionary pursuits of Codemge in Brazil's mining sector. As the economic development agency for the state of Minas Gerais, Toscano shared insights into the state-owned company's role in leveraging Minas Gerais' position as Brazil's mining powerhouse.

Toscano highlighted Codemge's collaboration with CBMM to exploit niobium deposits in Minas Gerais, a venture that not only boosts regional development through significant profit-sharing but also invests in diverse sectors including real estate and other minerals. Toscano shed light on the innovative use of niobium in enhancing steel and revolutionizing battery technology for electric vehicles (EVs). Niobium, when used in conjunction with lithium in batteries, significantly reduces charging times due to its ability to maintain lower temperatures, thus preventing overheating. For instance, an electric bus utilizing this technology could be charged in just 10 minutes. This breakthrough has implications beyond EVs, potentially benefiting energy storage solutions in wind turbines as well.

The discussion also touched upon Codemge's efforts to attract global investors to the rich mineral sector of Minas Gerais. By simplifying the mining license acquisition process and creating

a more transparent marketplace, Codemge aims to create a conducive environment for investors, thereby accelerating economic development within the state.

To access the complete interview, click here

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NEO Battery Materials’ next generation EV battery is the focus of its new Korean R&D hub

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I’m going to make a bold prediction. The electric vehicles we see on the road today will be virtually obsolete in 5 years. The amount of capital and brain power being applied to battery technology coupled with the desire/need for fewer and lower carbon footprint resources that go into those batteries is going to result in material step changes in vehicle range, speed of charging and hopefully the corresponding cost. Whether the electrical grid can keep up with this rapid transition to EVs remains to be seen but we can save that discussion for another day.

Imagine you want to go on a road trip in your EV, but every 300-400 miles you have to spend a few hours charging. What if the next generation of EVs could add 50+% to that range and

fully re-charge in 15-30 minutes. How much would you be willing to pay for the old generation of EV versus the convenience of a new one? For sure there will still be a market for used EVs as some people only need it for their daily commute or trips to the grocery store and otherwise the vehicle sits idle for hours, at which point in time there is little to no inconvenience to charge it. But for me, as someone who likes to fish and hike in the great outdoors of the Rocky Mountains, I can assure you there is no chance I'm buying a current generation EV with its theoretical range that potentially leaves me stranded in the middle of nowhere when the actual range ends up being 25% lower than optimal operating conditions.

One company leading the charge into the next generation of batteries is NEO Battery Materials Ltd. (TSXV: NBM | OTCQB: NBMFF), a Vancouver-based company focused on lithium-ion battery materials for electric vehicle and energy storage applications. NEO has a focus on producing silicon anode materials through its proprietary single-step nanocoating process, which provides improvements in capacity and efficiency over lithium-ion batteries using graphite in their anode materials. The Company intends to become a silicon anode active materials supplier to the electric vehicle industry with their all-star management and technical advisory team cherry picked from LG Chem, Samsung and various renowned universities.

The numbers are impressive both from a capacity/capability perspective and relative cost to their competition. In mid-2021 the Company announced that in a half-cell coin test that its nanocoated silicon anode allowed for a safe full charge within 5 minutes, which demonstrates the potential for scaling and implementation in larger cells such as those used in high power EV batteries. Through a mix of treatments and nanocoating materials, NEO utilizes pure metallurgical-grade silicon (Si) particles, which provide a 40-70% higher initial capacity

compared to current competitors that employ SiOx, SiC, or other composite silicon materials. Due to NEO's advantage of retaining a higher initial capacity, on average, a 5% silicon weight loading of NBMSiDE™ can have the equivalent impact of a 10% loading of a competitor's materials. Initial coulombic efficiencies (ICE) – the ratio of the discharge capacity after the full charge and the charging capacity of the same cycle and is usually a fraction of less than 1 – for NEO's 100% micron-size level Si anode have exceeded the 86% level, and cycling performance presents excellent capacity retention after 300 charging/discharging cycles.

And all this technology is advancing beyond research lab theoretical work. The latest press release from the Company confirms an MOU with the Province of Gyeonggi (basically Seoul, South Korea, and the surrounding area) to establish grounds for investments and cooperation between NEO and the Province to advance the mass production of silicon anode materials for EV batteries. NEO Battery Materials will initially invest, over the next 5 years, 24 billion KRW or approximately C$25 million to support the construction and expansion of the silicon anode commercial plant located on a 107,000 sq. ft. site in Oseong Foreign Investment Complex, Pyeongtaek City, Gyeonggi-do. The Company aims to transform the Province into an essential manufacturing and R&D hub of silicon anode materials. The first phase of the commercial plant will possess an initial annual production capacity of 240 tons of NBMSiDE, and the facility will be built as a 4-story office building with additional space that can accommodate production expansion to 1,800 tons annually of the Company's anode material.

I have no idea if NEO Battery Materials will be one of the success stories to advance the next generation of battery technology for EVs and energy storage. I do know that they have generated some interesting results and have NDAs signed with

over 20 globally established industry players in the battery cell manufacturing, materials manufacturing, and automotive industries. With a market cap of roughly C$30 million, you can decide if this is one of the companies you'd like to hold if you are investing in the future of EVs.

Nano One Materials' Dan Blondal with Chris Thompson on decarbonizing the battery materials supply chain

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In a recent InvestorIntel interview, Chris Thompson spoke with Dan Blondal, CEO, Director & Founder of Nano One Materials Corp. (TSX: NANO) about Nano One's place in decarbonizing the battery materials supply chain and about the company's product development collaboration with Euro Manganese and a global OEM automotive company.

In this InvestorIntel interview, which may also be viewed on YouTube (click here to subscribe to the InvestorIntel Channel), Dan Blondal said that Nano One's patented technologies are used to make a wide range of the cathode materials used in batteries for electric vehicles, energy storage, and for consumer electronics. Dan also provided an update on Nano One's One-Pot process, which increases the energy density and durability of lithium ion batteries, and how its M2CAM technology addresses supply chain complexities while reducing costs and carbon

footprint.

To watch the full interview, click here.

About Nano One Materials Corp.

Nano One Materials Corp (Nano One) is a clean technology company with a patented, scalable and low carbon intensity industrial process for the low-cost production of high-performance lithium-ion battery cathode materials. The technology is applicable to electric vehicle, energy storage, consumer electronic and next generation batteries in the global push for a zero-emission future. Nano One's One-Pot process, its coated nanocrystal materials, and its Metal to Cathode Active Material (M2CAM) technologies address fundamental performance needs and supply chain constraints while reducing costs and carbon footprint. Nano One has received funding from various government programs and its current "Scaling of Advanced Battery Materials Project" is supported by Sustainable Development Technology Canada (SDTC) and the Innovative Clean Energy (ICE) Fund of the Province of British Columbia.

To learn more about Nano One Inc., click here

legislation. Forward-looking statements are based on the opinions and assumptions of management of the Company as of the date made. They are inherently susceptible to uncertainty and other factors that could cause actual events/results to differ materially from these forward-looking statements. Additional risks and uncertainties, including those that the Company does not know about now or that it currently deems immaterial, may also adversely affect the Company's business or any investment therein.

Any projections given are principally intended for use as objectives and are not intended, and should not be taken, as assurances that the projected results will be obtained by the Company. The assumptions used may not prove to be accurate and a potential decline in the Company's financial condition or results of operations may negatively impact the value of its securities. Prospective investors are urged to review the Company's profile on Sedar.com and to carry out independent investigations in order to determine their interest in investing in the Company.

If you have any questions surrounding the content of this interview, please email info@investorintel.com.