NEO Battery Materials is Disrupting the Lithium-Ion Battery Industry with Silicon Anode Materials

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Last week I wrote an article about graphite and the potential for it to see prices rise steeply in the future. There's one caveat to that article and that is the advancement of technology. Entrepreneurs, venture capitalists, and generally smart scientists and researchers are always looking for a better, and preferably cheaper, way to get things done. Currently, graphite is the single largest component of lithium-ion batteries used in electric vehicles ("EVs") at up to 48% of total battery weight. But what if someone were to build a better anode that used a different material, and that material provided improvements in capacity and efficiency over lithium-ion batteries that use graphite in their anode materials? That would certainly disrupt, if not completely ruin, my graphite pricing thesis. That's why investing is not easy and why everyone is not a billionaire.

Silicon anode solution for EV batteries

Today we are going to discuss one of the many potential disruptors in the lithium-ion battery world. NEO Battery Materials Ltd. (TSXV: NBM | OTCQB: NBMFF) is focused on silicon materials for lithium-ion batteries in EVs. The Company is looking to develop silicon anode materials, NBMSiDE™, through proprietary nano-coating layers, to transform the anode materials space for the EV industry. The energy density of a

lithium-ion battery is highly dependent on the anode material. Integrating silicon with graphite in the anode can increase battery storage capacity by 9-10 times, as well as help reduce battery cost and increase charging speed. So where do I sign up?!

Commercial plant under construction in South Korea and now US expansion

Despite the Company's strong ties to South Korea, where NEO Battery Materials will initially invest 24 billion KRW or approximately C$25 million to support the construction and expansion of a silicon anode commercial plant, they are more recently focusing on expansion in the U.S. In January, NEO announced it was establishing NBM America Ltd., a U.S. subsidiary. NBM America will actively seek U.S. expansion opportunities that include the Company's core silicon anode business and any new projects in the battery materials space.

The subsidiary will allow closer interaction with U.S.-based parties that are currently under non-disclosure agreements ("NDAs") to expedite business and collaborative activities. It is also anticipated that NBM America will be able to secure funding opportunities from state-level programs and federal-level initiatives that include the Inflation Reduction Act and Department of Energy funding. The subsidiary will also target accessing the large pool of U.S. venture capital funding that focuses on cleantech thematic investing and strengthening EV infrastructure, assuming those targeted companies are not tangled up with the collapse of Silicon Valley Bank ("SVB").

NDAs and LOIs driving potential commercial

relationships

Pursuing this strategy appears to be paying off because, by the end of February, NEO Battery Materials was announcing it had signed 5 additional NDAs in the EV battery industry including a U.S.-based investment bank and a private equity firm. The Company also further elaborated on its U.S. aspirations stating they plan to establish an R&D Center to manufacture silicon anode samples for North American battery manufacturers to expedite the timeline for joint venture opportunities. This facility will improve logistical efficiency by reducing the time between material evaluation and optimization.

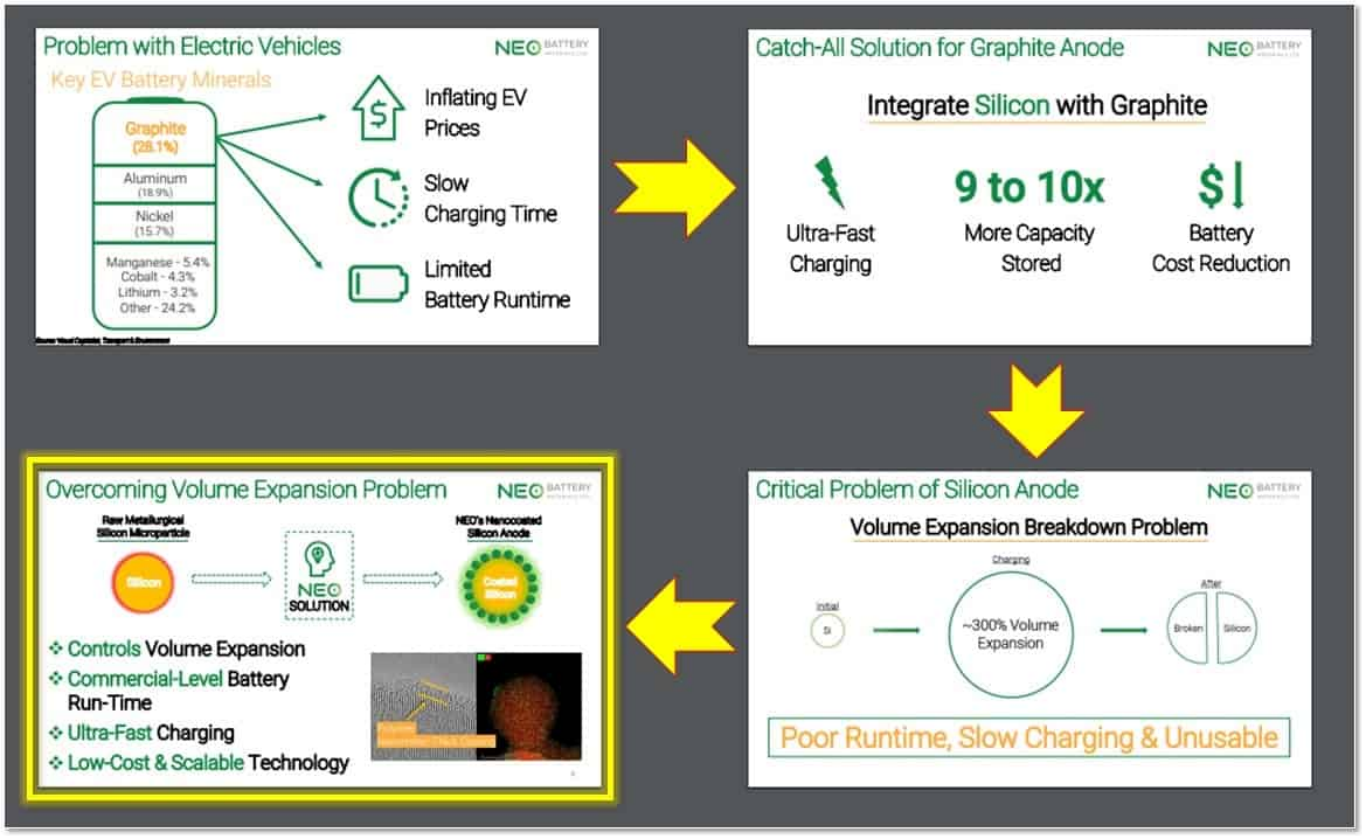
A week later NEO issued a press release that it had signed a Letter of Intent ("LOI") with a developer of robust, durable polymer electrolytes for silicon anode optimization with a spin-out company from a top U.S. university. The LOI will jointly explore opportunities to integrate the counterpart's polymer electrolyte technology into NEO's silicon anode system to improve performance by effectively controlling the silicon volume expansion issue. Additionally, the non-flammable nature of polymer electrolytes can provide increased safety improvements as opposed to conventional liquid electrolytes, preventing the risk of battery fires and explosions. Although it has been a while since I have seen a video of a Tesla burning on the side of the road.

Jump ahead to this week and NEO has confirmed plans to do a tour of various locations in the U.S. The Company announced that management is expected to visit Ohio and Kentucky in late March and early April to select a site for its U.S. headquarter location. The management team and key advisors also plan to visit New York City to hold meetings with prominent cleantech VC and investment banking firms.

Final thoughts

NEO Battery Materials has some pretty ambitious plans but if all those NDAs and LOIs start leading to some deals then they will need both their facility in Korea and in the U.S. to keep pace with business. Getting funding from the big cleantech firms in the U.S. will also support that build-out and top up the treasury which was sitting at almost C$2 million in working capital as of November 30, 2022. The Company currently trades at a market cap of C$30 million.

Neo Battery Materials Focus on Increasing Charging Speed and Storage Capacity with a Nanocoated Silicon Anode



Source: Company Presentation (March 2023)