Reducing charging time for EVs, Neo Battery prepares to open a silicon anode materials commercial plant in South Korea

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NEO Battery Materials Ltd. (TSXV: NBM | OTCQB: NBMFF) ("NEO" or "NBM") is a low-cost silicon anode materials developer. NEO uses a nanocoating manufacturing process that enables longer-running, rapid-charging lithium-ion batteries, all for a claimed much cheaper production cost than other silicon anode materials peers. NEO aims to become among the top 10 global suppliers of silicon anode materials. NEO has recently optimized its one-step process to allow NEO to supply 70% cheaper silicon anodes compared to current competitors. Furthermore, the process has achieved uniformly-coated silicon particles consistently, a key factor for quality and cost control.

NEO's significant technical breakthrough

As announced on April 18, 2023, NEO has passed a significant technology milestone of 'Uniform Nanocoating Capability' on silicon anodes. NEO stated: "*(The) robustness and nanocoating thickness control effectively increases battery run-time and cuts down charging time for EVs. Optimized one-step process will allow NEO to supply 70% cheaper silicon anodes compared to current competitors. Uniform nanocoating technology to open opportunities for different battery and chemical material applications.…..NEO has achieved the ideal nanocoating*

conditions to produce uniformly-coated silicon particles consistently."

NEO's uniform nanocoating layers effectively resolves the volume expansion problem to enable automotive-level use. The result is 70-80% more initial energy capacity compared to other anode competitors, as well as ultra-fast charging potential.

Dr. S. G. Kim, CTO of NEO, commented:

"*By achieving this uniform coating capability through an additional solution process, we have made a remarkable accomplishment and have amassed great interest from 3rd party industry experts and players.*"

Further supporting the above comment, on May 11, 2023 NEO announced: "*Signed over 10 NDAs that Include global-tier battery cell manufacturers and EV automakers through interest in uniform nanocoating capability.*" NEO stated that "over 10 NDA's" were signed in the past month prior to this news. As a result NEO stated that they "will *expedite U.S. operations through an initial R&D facility with subsequent commercial plants*".

NEO's silicon anode material offers many advantages over other anode materials

Source: NEO company presentation

NEO is rapidly progressing their first silicon anode materials commercial plant in South Korea

NEO is rapidly moving to the next stage having recently designated a preferred contractor for their planned South Korean Commercial Plant. NEO aims to have the South Korean Commercial Plant completed by H1 2024. This will be followed by plant commissioning and mass production validation during H2 2024.

Plant capacity is estimated to reach 5,000 tons per annum.

Next NEO plans to duplicate the process globally. NEO states their plan: *"To duplicate commercial plant in Canada, U.S., and Europe to operate as global silicon anode supplier in the EV battery industry."*

NEO Battery Materials is now working to build their first silicon anode materials commercial plant in South Korea and then duplicate the process globally

Source: NEO company presentation

Business model

NEO intends to pursue a dual business strategy. The first part is in-house manufacturing plus potentially JV expansion in North America and Europe. The second part is to sell Licensing Agreements to battery and/or auto OEMs.

Closing remarks

Silicon anodes are now falling in cost and improving in terms of cycle life. Both are not yet as good as graphite anodes for cost or cycle life; however, the trade-off with silicon anodes is much better energy density (EV range) and charging times. There is also a growing adoption of silicon-graphite anodes.

NEO Battery Materials trades on market cap of C$42M, with the stock price recently charging higher on all the good company news. Stay tuned.