NEO Battery Materials Scaling-Up Production to 20 Tons Per Year for Mass-Producibility Testing

written by Raj Shah | February 6, 2025
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- Scaling-Up Silicon Anode Production Capacity to 20 Tons Per Year for:
    - Increasing Supply Requirements Among Downstream Partners, Particularly For Use and Tests in Full Cell
    - Initiating Mass-Producibility Testing to Prepare for Factory-Level Production

- Mass-Producibility Testing: Critical to Ensure Quality Assurance, Process Optimization, and Cost Control
- Notice of Allowance for Silicon Anode Patent from Korean Intellectual Property Office

NEO Battery Materials Ltd. ("NEO" or the "Company") (**TSXV: NBM**) (**OTC: NBMFF**), a low-cost silicon anode materials developer that enables longer-running, rapid-charging lithium-ion batteries, is pleased to announce the production scale-up to 20 tons per year to accommodate the increasing demand for NEO's high-performance silicon anode products and to initiate mass-producibility testing to prepare factory-level production.

Production Scale-Up & Initiation of Mass-Producibility Testing

As announced on January 7, 2025, NEO's P-300 silicon anode demonstrated breakthrough battery capacity and cycling performance. These results reinforce the P-300 series as a strong commercial candidate for integration in lithium-ion batteries. In parallel with full cell[1] evaluations for long-term performance validation, NEO is undertaking efforts to scale-up production to 20 tons per year to meet growing silicon anode demand and to initiate mass-producibility testing.

The scale-up for NEO's silicon anodes will first accommodate the increasing customer requirements for material supply. The high-performance P-300 series has mainly driven demand among downstream partners, as the product is ideal for silicon-graphite anodes[2]. For supporting supply, NEO's production expansion plan will implement additional equipment, larger batch processing capabilities, and an optimized synthesis method to increase capacity. Additional facilities in Gyeonggi Technopark have been secured as part of the scale-up.

Concurrently, the Company will conduct mass-producibility testing to optimize the manufacturing process from pilot-scale to factory-level production. Mass-producibility tests will ensure that P-300 silicon anodes can be manufactured in large volumes without compromising quality or performance: these tests will further identify potential bottlenecks, refine process parameters, and control costs. With a proprietary particle size and structure technology and a modular, scalable process, NEO expects to scale production efficiently to the mass-production level.

Notice of Allowance for Patent from Korean Intellectual Property Office

NEO Battery Materials has received a Notice of Allowance from the Korean Intellectual Property Office ("KIPO") regarding a

patent named *Composite nanoparticle comprising non-carbon nanoparticle and carbonaceous layer thereon, and process of preparing the same*. KIPO has granted the patent application under Article 66 of the Korean Patent Act. The patent will be duly registered upon payment of the registration fee.

[1]Full Cell: Lithium-ion battery comprises all four core materials (cathode, anode, separator, and electrolyte). Generally, battery anode materials proof-of-concept and optimization are completed with half cells in which only the anode, separator, and electrolyte are used with a lithium-metal counter electrode that may supply infinite lithium-ions. Full cells have a limited number of lithium-ions, given that commercial-level cathode materials retain a limited supply of lithium-ions compared to lithium-metal. Consequently, capacity retention is heavily affected by Coulombic efficiency at every charging cycle.

[2]Silicon-Graphite Anode: For commercial-level lithium-ion battery anodes, silicon anodes cannot wholly replace graphite anodes. Hence for certain batteries, silicon anodes and graphite anodes are mixed to form a blended anode called silicon-graphite anodes. On average, silicon anodes comprise approximately 5 to 10% of the anode material.

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. The Company aims to be a globally-leading producer of silicon anode materials for the electric vehicle and energy storage industries. For more information, please visit the Company's website at: https://www.neobatterymaterials.com/.

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