Achieving the 1000-Mile EV Battery with Silicon Anode Materials
Cautionary Statements Regarding Forward Looking Information

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Leadership with Proven Track-Record

Mr. Spencer Sungbum Huh
Director, President & Chief Executive Officer
- More than 25 years of financial and operational experience in Canada and South Korea
- GTM and strategic management for mining, medical device, and high-tech companies
- Previously with TD, BMO, and publicly-listed companies

Mr. Sung Rock Hwang
Director, Chief Operating Officer
- Over 30 years of experience working for Samsung SDI as Executive Director and Chief of Purchasing
- Expertise in supply chain management, procurement planning, and advanced battery business development

Dr. Seong Gi Kim
Chief Technology Officer
- Former Executive Vice President and Head of R&D of Hanwha Solutions – Multibillion Korean Conglomerate
- Global R&D leader at second largest silicon product manufacturer – Momentive Performance Materials
- Ph.D. from University of Toronto & Held roles in Dow Chemical, LG Innotek, and Samsung Fine Chemicals

Dr. Basudev Swain
Chief Science Officer
- Over 20 years experience in Li-ion battery materials and recycling development
- Critical R&D role in sustainable mass-production system commercialization
- Held key research positions in South Korea, Japan, and Singapore

Dr. Dongmok Whang
Scientific Advisor
- Expertise in fabrication and manufacturing of low-dimensional nanomaterials and graphene for lithium-ion battery and ESS applications
- Co-owns patents with Samsung Electronics; Professor at Sungkyunkwan University with Post-Doc at Harvard University

Dr. Jinhyuk Lee
Scientific Advisor
- Expertise in field of rechargeable batteries, sustainable battery materials & known as cobalt-free disordered-rock salt cathode materials
- High-impact author in Science and Nature Journals
- Received PhD from MIT and Assistant Professor of Materials Engineering at McGill University
Executive Summary

Is the Forerunner for Cost-Effective, Long-Lasting EV Battery Technology

NBMSiDE™ - Silicon Anode Material

- Longer EV Driving Range with Ultra-Fast Charging
- Energy-Efficient, Inexpensive Manufacturing Process
- First-Mover to Use Cheapest Silicon Raw Material

~60 NDAs with Global Battery Cell Manufacturers & EV Automakers for Collaboration + Supply

Management Team with Proven Track-Record in Battery Industry

>70% Reduction in Silicon Anode Downstream Selling Price Compared to Competitors
NBM Silicon Anode Global Expansion Plan

Aims to Become Among the Top 10 Suppliers of Silicon Anode Materials

NEO Battery Materials Ltd.
To Open R&D Facility in 2024 & Construct Commercial Plants in Ontario & B.C. by 2026

NBM America LLC
To Open Ohio R&D Facility in 2H 2023 & Construct Ohio Commercial Plant by 2026 & Subsequently in Kentucky, Tennessee, and LA

Europe
Considering Multiple Locations for Commercial Plant Expansion in Europe with JV Partners

NBM Korea Co.
5K Ton Final Capacity South Korean Commercial Plant to Be Completed by First Half of 2024

Stage 1: Product Validation
Ongoing 20+ Active Evaluations with Global Battery Manufacturers & EV Automakers To Establish Strategic Partnerships

Stage 2: First Commercial Plant
To Commercialize Proprietary Silicon Anode Technology by the First Half of 2024 & To Undertake Mass Production Validation

Stage 3: Global Expansion
To Duplicate Commercial Plant in Canada, U.S., and Europe to Operate as Global Silicon Anode Supplier in the EV Battery Industry
Key Developments

- Appoints Mr. Sung Rock Hwang as Chief Operating Officer
  - Former Executive Director and Chief of Purchasing at Samsung SDI (Mkt. Cap: CAD $56.3B)

- Licensing Agreement with University-Industry Foundation of Yonsei University
  - Granted exclusive worldwide license for three patents regarding proprietary nanocoating technology for silicon anode materials

- Launch of Flagship NBM Silicon Anode Materials – NBMSIDE™
  - 3 Types of Silicon Anode Materials Developed for EV Li-Batteries
  - Based on Metallurgical-Grade Silicon with High Specific Capacity of > 2,500 mAh/g
  - Produced from Simple, Energy-Efficient Single-Step Nanocoating
  - Improved Life Span & Cycling Stability of Silicon

- Construction Permit Approval for South Korea Commercial Plant
  - Proceed to Next Stages of Construction that Includes Civil Engineering, Site Clearance & Contractor Invitation for Bid Process

- Completion of NBM Korea R&D Scale-Up Centre for In-House Production
  - Installed Pilot-Scale Equipment to Manufacture Silicon Anode Materials
  - Capable of Independent Production & Evaluation of Coin Full Cells

- U.S. Ohio Expansion Strategy through NBM America Ltd.
  - Aim for U.S. Production of Silicon Anode Materials & Value-Added Projects
  - Non-Dilutive Funding Efforts from State-Level Programs, DoE, DoD, IRA, and other Federal-Level Programs

- Appoints Dr. S. G. Kim as Chief Technology Officer
  - Former Executive Vice President & Head of R&D at Hanwha Solutions’ Advanced Materials Division
  - Responsibilities from New Chemical Product Development to Commercial Plant Construction

- Appoints Dr. Basudev Swain as Chief Science Officer
  - Expert in Green Material Science Engineering & Lithium-Ion Battery Recycling
  - Research & Project Management Roles for Over 20 Years
  - Former Senior Researcher in R&D Institutes
Q: What Stops Consumers from Purchasing Electric Vehicles?
Problem with EVs

Inflating EV Prices
Rising Battery Metals & Materials Price are Discouraging Mass Adoption

Slow Charging Time
Consumers Not Receptive to Longer Charging or “Fueling” Time

Limited Driving Range
“Range Anxiety” Driving EVs to Point A to B
Anatomy of Batteries

Lithium-Ions Move from Positive Electrode (Cathode) to Negative Electrode (Anode) During Charging and Back During Discharging/Use
Solution: Integrate Silicon with Graphite

Source of Problem

<table>
<thead>
<tr>
<th>Anode Material</th>
<th>Graphite (28.1%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Aluminum (18.9%)</td>
</tr>
<tr>
<td></td>
<td>Nickel (15.7%)</td>
</tr>
<tr>
<td></td>
<td>Manganese - 5.4%</td>
</tr>
<tr>
<td></td>
<td>Cobalt - 4.3%</td>
</tr>
<tr>
<td></td>
<td>Lithium - 3.2%</td>
</tr>
<tr>
<td></td>
<td>Other - 24.2%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Cathode Material + Other</th>
</tr>
</thead>
</table>

Solution: Silicon

- Ultra-Fast Charging
- More Capacity Stored
- 10x
- $\downarrow$
- EV Battery Cost Reduction

Source: Visual Capitalist, Transport & Environment
Critical Problem of Silicon Anode

Volume Expansion Breakdown Problem

Initial Si → ~300% Volume Expansion → After Broken Silicon

Poor Runtime, Slow Charging & Unusable
Silicon Anode Market

Energy Density of the Lithium-Ion Battery is **Highly Dependent on the Anode Material**

**300K MT**

Global Silicon Anode Annual Production by 2030

**45% Expected CAGR**

Silicon Anode Market Size & Growth

**Source:** QY Research, SNE Research, Shinhan Securities

Silicon Anode Competitors

**No Dominant Competitor/Technology**
Silicon Anode: Industry Problem

Lack of Scalability + Unattractive Selling Price

1. Expensive Manufacturing
2. High-Cost Inputs

Silicon and Graphite Price Comparison

Average Graphite Price: USD 10 / kg

Average Silicon Price: USD 80 / kg

Only Added in High-End EV Models, or Limited Amounts in Lower-End Vehicles

Average Silicon Anode Selling Price

Source: QY Research, SNE Research, Shinhan Securities
NBM Silicon Anode Technology
NBMSiDE™: Cost-Effective Silicon Anode

8 Patents
Issued & Pending Across South Korea, United States & WIPO PCT

70% – 80%
More Initial Energy Capacity Compared to Competitors

5 Min
Safe Ultra-Fast Charging Realized in Tests

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Robust Polymer Nanometer-Thick Coating
Nanocoating Layers Effectively Resolve Volume Expansion Problem to Enable Automotive-Level Use
NBMSiDE™: Manufacturing Advantage

- Raw Material Silicon Input
- Simple & Energy-Efficient Wet Solution Process
- No High Temperature / Pressure / Vacuum

One-Step Manufacturing

First to Use & Enable

10x Cheaper Input Feedstock Metallurgical-Grade Silicon

Industry

Nano Silicon

SiOx, Si-C Si Nanowire

VS.

Micro MG Silicon
### SiAnode Performance Comparison Chart

<table>
<thead>
<tr>
<th>Products</th>
<th>Initial Capacity (mAh/g)</th>
<th>Initial Coulombic Efficiency (%)</th>
<th>Type</th>
<th>Manufacturing Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>NBMSiDE P100</td>
<td>2,695</td>
<td>89.4</td>
<td>Metal Si</td>
<td>Low</td>
</tr>
<tr>
<td>NBMSiDE P200</td>
<td>2,130</td>
<td>86.0</td>
<td>Metal Si</td>
<td>Low</td>
</tr>
<tr>
<td>Competitor A</td>
<td>1,408</td>
<td>80.0</td>
<td>SiOx</td>
<td>High</td>
</tr>
<tr>
<td>Competitor B</td>
<td>1,506</td>
<td>88.1</td>
<td>Si-C</td>
<td>Medium</td>
</tr>
<tr>
<td>Competitor C</td>
<td>1,108</td>
<td>89.4</td>
<td>Si-C</td>
<td>Medium</td>
</tr>
</tbody>
</table>

- Higher Initial Energy Capacity compared to Competitors

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**NBMSiDE™: Performance Advantage**

Long Lasting NBMSiDE Silicon Anodes for EVs – Minimal Volume Expansion During Use

**Higher Initial Energy Capacity compared to Competitors**
NBMSiDE™: Performance Advantage

Robust Durability & Ultra-Fast Charging – Performance Reliability & Charging-Time Relief

Robust Structural Durability for Electronics Applications

Ultra-Fast Charging through Nanocoating

Solves Slow Charging Issue of Batteries Today
Commercialization Pathway
1. In-House Manufacturing + JV Expansion

[Initial Step]
South Korean Commercial Plant
→ Full Capacity: 5,000 T/year

[Next Step]
North America + Europe Expansion with JV Partners

2. Process Licensing Agreements

Licensing Agreement

Battery Manufacturers

EV OEM

Toyotomi
SAMSUNG
LG Energy Solution
SK Innovation
northvolt
ACC
Britishvolt
Ford
Hyundai
Tesla
VW
Stellantis
Validation Pipeline + Major Catalysts

Business Development & Network

~60
Relationships Established within Battery Industry

NBMSiDE™ Validation

Feedback

Optimized Anode

EV Battery Supply Chain Players

Global Battery Manufacturers
Electric Vehicle Automakers
Chemical Material Companies

Expected Milestones

Joint Development Agreement
Offtake Agreement
Collaboration Agreement
Joint Venture
Commercial Plant Progress

Binding Contract with Preferred Contractor +
Ground Break in Mid-August 2023

- Plant Completion by First Half of 2024
- Initial Site Clearance & Civil Engineering
- Detailed Design Process
## Commercial Plant Economic Analysis

**South Korean Silicon Anode Commercial Plant Construction**

<table>
<thead>
<tr>
<th>Phase Expansion Timeline</th>
<th>Phase I - 2024</th>
<th>Phase II - 2025</th>
<th>Phase III - 2026</th>
<th>Phase IV – 2027-28</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum Annual Production Capacity (in tonnes per annum)</td>
<td>240 TPA</td>
<td>1,000 TPA</td>
<td>2,500 TPA</td>
<td>5,000 TPA</td>
</tr>
</tbody>
</table>

### Commercialization Details

- With initial 240 TPA capacity, NBMSiDE™ will supply ~160K EVs

- Final Annual Capacity Estimated:
  
  **5,000 T = 3.5M EVs**

- Optimization with Large Battery Manufacturers and Chemical Material Companies

### Financial Criterion

<table>
<thead>
<tr>
<th>Financial Criterion</th>
<th>Value</th>
<th>Financial Criterion for Phase IV</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average Selling Price</td>
<td>US$ 50,000 / tonne</td>
<td>Pre-Tax NPV @ 8% Cost of Capital</td>
<td>US$ 434.4 M</td>
</tr>
<tr>
<td>Max. Revenue – Phase I</td>
<td>US$ 12.0 M</td>
<td>Post-Tax NPV @ 8% Cost of Capital</td>
<td>US$ 316.2 M</td>
</tr>
<tr>
<td>Max. Revenue – Phase II</td>
<td>US$ 50.0 M</td>
<td>Pre-Tax IRR</td>
<td>40.6 %</td>
</tr>
<tr>
<td>Max. Revenue – Phase III</td>
<td>US$ 125.0 M</td>
<td>Post-Tax IRR</td>
<td>33.3 %</td>
</tr>
<tr>
<td>Max. Revenue – Phase IV</td>
<td>US$ 250.0 M</td>
<td>Pre-Tax Payback Period</td>
<td>4.5 Years</td>
</tr>
<tr>
<td>Total CAPEX for Phase I to IV</td>
<td>US$ 80.6 M</td>
<td>Post-Tax Payback Period</td>
<td>5.0 Years</td>
</tr>
<tr>
<td>Average Annual OPEX – Phase IV</td>
<td>US$ 72.8 M</td>
<td>EV Battery Supply at Phase IV</td>
<td>3.5 M EVs</td>
</tr>
</tbody>
</table>
Financing & Expansion Strategy

Financial Position

South Korean Non-Dilutive Funding

Strategic Debt Financing + Investments

Joint Venture Activities

Funded Expansion
Share Performance & Structure

1-Year Historical Price Performance

Financial Overview

(as of July 10, 2023)

Current Share Price $0.40
52-Week Low $0.12
52-Week High $0.50
Basic Shares Outstanding 101.17mm
Warrants 7.04mm
Options 6.23mm
Fully Diluted Shares Outstanding 114.44mm
Market Capitalization (Basic) $40.47mm
Market Capitalization (FDSO) $45.78mm
For More Information:

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