

FOR RELEASE: 08 JUNE 2023

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Exceptional Performance Achieved by Nachu Anode Materials Minus Purification

- Anode Active Material (AAM) samples from Nachu graphite feedstock utilising US pilot equipment were produced for customer testing
- First Cycle Efficiency (FCE) of >94.4% with a reversible capacity of >355 mAh/g
- Purity at or above 99.97% without any harsh chemical, acid or very high-temperature thermal purification
- Additional Tier-1 customer discussions and qualification programs progress
- Several sites shortlisted for US AAM facility

Magnis Energy Technologies Ltd (“Magnis”, or the “Company”) (ASX: MNS; OTCQX: MNSEF; FSE: U1P) is pleased to provide the latest results achieved in its pilot scale production in New York of AAM as part of its customer qualification process.

Active Anode Materials

Graphite has been classified as a critical material by the United States and European Governments. Graphite is the main material used for the battery’s anode, which takes in and holds lithium ions during charging and releases them when energy is needed. Graphite’s inherent unique characteristics of high thermal and electrical conductivity combined with chemical inertness provides stability when you cycle through many energy flows and without any ignition or degrading. A typical 60 kilowatt-hour EV battery holds approximately 70kg of graphite.

Production of AAM and Recent Results

Recently Magnis produced AAM derived from its high-purity Nachu flake graphite for customer qualification.

The materials produced by Magnis’ technology partner, C4V utilising a downstream processing technology at its pilot facility in New York has been undergoing regular product development, optimisation and quality and performance testing exercises. The quality control (QC) and performance testing have been performed as per industry standard protocols including third party analytical tests for purity verifications.

Magnis’ AAM has demonstrated FCE results that meet and outperform the industry standard requirements for both EV’s and energy stationary storage. The exceptional performance results have been achieved **without any chemical/acid purification or high-temperature thermal purification.**

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Recent test results have shown purity of 99.97% with a First Cycle Efficiency (FCE) of >94.4%, less than 6% ICL and a reversible capacity of >355 mAh/g. The performance puts the Nachu AAM in the top quartile of products in the marketplace.

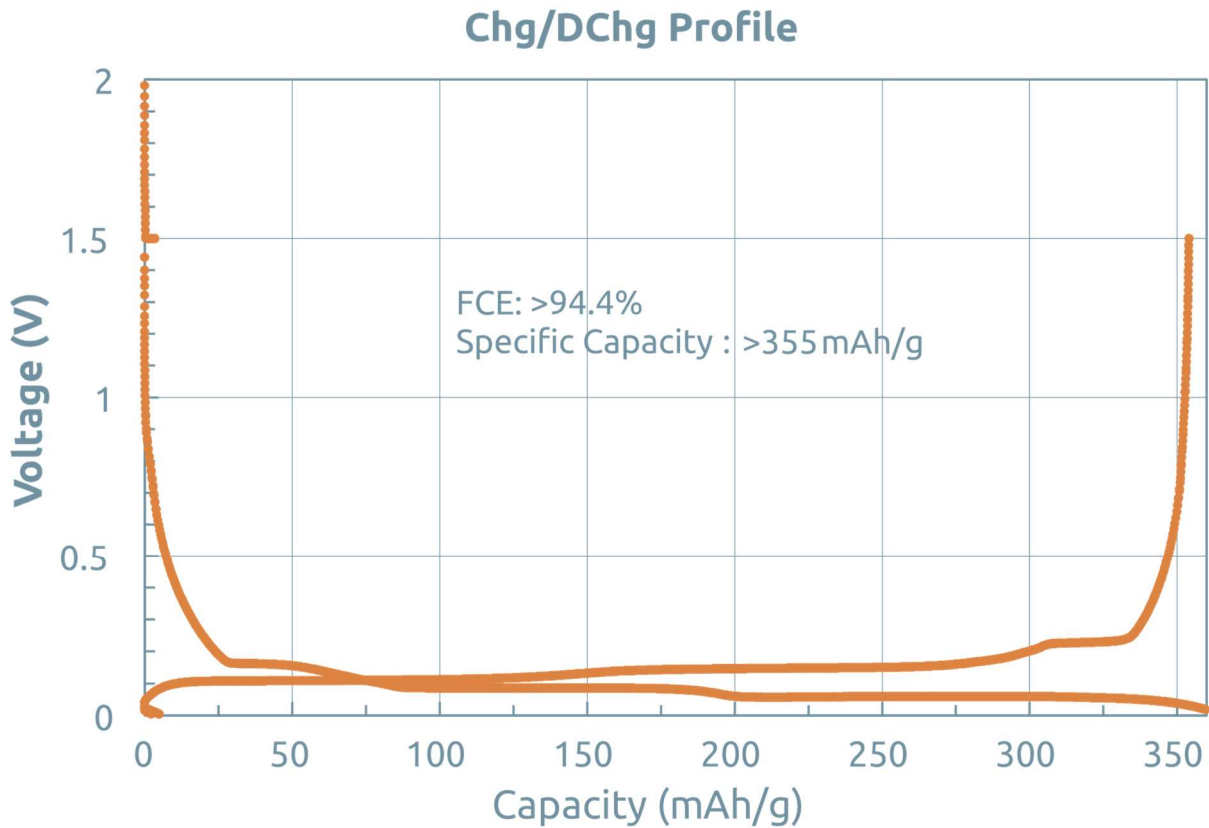


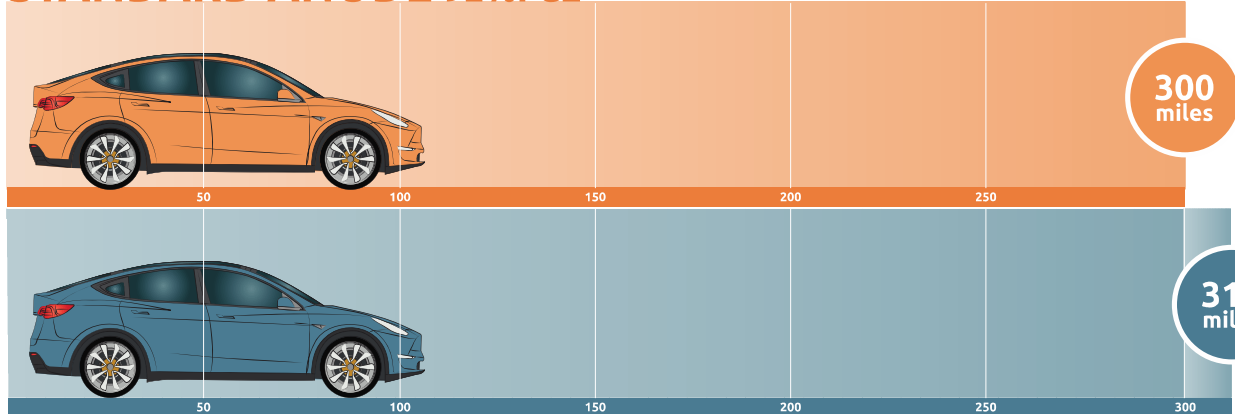
Figure 1: Initial charge-discharge curve of Magnis' CSPG product

Significance of Results

FCE plays a critical role in the lithium-ion cell manufacturing process. A higher first-cycle efficiency indicates a lower amount of loss in lithium when the first cycle (also known as the formation cycle in cell manufacturing) is performed on the production floor.

Standard natural graphite anode products in the marketplace have a FCE of 91%. Nachu AAM provides benefits to EV and ESS manufacturers with a higher energy density cell resulting in a longer average range.

STANDARD ANODE 92%FCE



NACHU ANODE 94.4%FCE

Figure 2: Comparison range of an electric vehicle built with 91% FCE Anode versus Nachu Anode that delivers 94.4% FCE using the exact chemistry and all other electrochemical properties such as the electrolyte

Competitive Cost

The innovative downstream processing technology developed by C4V, which requires high-purity, low-cost Nachu concentrate feedstock and the 'Mechanical Process Only' approach to produce AAM have bypassed any chemical/acid and energy-intensive thermal purification. Therefore, the overall (Capex and Opex) processing cost to produce per tonne of Magnis' AAM will be significantly reduced.

US AAM Plant and Potential Customers

The site selection process for the US Commercial AAM plant has progressed significantly with a shortlist of sites with existing buildings.

Several potential customer discussions are currently underway with tier-1 groups. **Currently, the Company has a Tier-1 offtake with the world's largest Battery/EV company as announced on 21 February 2023.**

Magnis Chairman Frank Poullas commented: "There is no doubt that our graphite and anode product contains key advantages in the marketplace. Producing a high-performing product minus any chemical/acid purification with a sustainable manufacturing approach allows for the competitive cost of Magnis' AAM product and puts Magnis into a strong position to be a leading CSPG anode supplier outside China."

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About Magnis

Magnis Energy Technologies Ltd (ASX: MNS; OTCQX: MNSEF; FSE: U1P) is a vertically integrated lithium-ion battery technology and materials company in the Lithium-ion battery supply chain. The company's US based subsidiary Imperium3 New York, Inc ("iM3NY") operates a Gigawatt scale Lithium-ion battery manufacturing plant in Endicott, New York. Magnis together with their US based technology partner, C4V LLC has produced high-performance active anode materials for lithium-ion batteries utilising Magnis' high purity graphite feedstock from their Nachu Graphite project in Tanzania. The company's vision is to enable, support and accelerate the mass adoption of Electric Mobility and Renewable Energy Storage critical for the green energy transition.

This announcement has been authorised for release by the Board of Magnis Energy Technologies Ltd (ACN 115 111 763).

FOR FURTHER INFORMATION

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