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ASX: TLG

Talga's graphite anode powers 5x lifespan in KRI ultra-long life battery breakthrough

- **Talnode®-C natural graphite anode integrated into KRI's ultra-long-life Li-ion cells has achieved over 8,000 cycles in testing to date; approximately 5 times the lifespan of conventional cells**
- **Longer cycle life can maximise value of battery power in high-utilisation applications including fleet/robotaxi and battery energy storage systems**
- **Pilot samples are with KRI's customer evaluation program now; targeting scale up to mass production in 2030**
- **KRI is a wholly owned subsidiary of Osaka Gas, with 30 years of battery R&D**

Battery materials company Talga Group Ltd ("Talga" or "the Company") is pleased to announce that its Talnode®-C natural graphite anode has demonstrated excellent performance in a revolutionary ultra-long-life Li-ion battery developed by KRI, Inc. ("KRI"), a wholly owned subsidiary of Osaka Gas Co., Ltd.

KRI's breakthrough technology has achieved over 8,000 cycles to 75% capacity retention, approximately five times the cycle life of a conventional Li-ion cell (approximately 1,600 cycles), with an estimated potential for ~1 million km cumulative driving range in electric vehicles, and dramatically extended service life in battery energy storage systems.

Sample cells containing Talnode®-C including stacked laminate (10–11 Ah) and 21700 cylindrical (3.0–3.4 Ah) formats (Figure 1), with ~520 Wh/L energy density are now available through KRI for customer evaluation, with commercialisation and production scale-up proposed.

The exceptional cycle-life performance is enabled by KRI's advanced battery cell design, achieving more uniform electrode reactions over time. KRI evaluates battery materials from a range of suppliers on a neutral basis, and Talga's Swedish-made Talnode®-C has shown excellent performance in this cell design, with its low-resistance graphite providing the stability, homogeneity and rate capability required, with lower environmental impact.

Talga Group Managing Director, Mark Thompson, commented: *"Talnode®-C's performance in KRI's ultra-long-life battery is a strong validation of its potential in high-growth mobility and energy storage markets. A five-fold increase in battery lifespan improves economics, reduces battery replacements and lowers emissions, addressing major pain points for sector leaders.*

Natural graphite rarely, if ever, achieves this lifespan. KRI's results show that Talga's highly crystalline, homogenous small-flake graphite, used optimally, can outperform synthetic graphite and deliver less reactivity and greater stability over long lifecycles. We are proud to support Japanese innovation and a highly respected research institute such as KRI, together with its partners, towards commercialisation."

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KRI stated: *"As an independent research organisation, KRI evaluates materials from a wide range of suppliers on a neutral basis, and we are pleased that Talnode®-C has shown excellent performance in our cells. We will continue to work with material suppliers and evaluation partners towards the practical application of long-life batteries that benefit society."*

KRI's ultra-long-life battery technology

KRI has identified non-uniform electrode reactions as a major cause of Li-ion battery degradation. Under fast charging, cold temperatures or as a cell ages, some parts of an electrode work harder than others. Once a cell's "critical load point" is exceeded, secondary degradation such as lithium plating and gas generation follows, accelerating capacity fade.

KRI's solution optimises cell components such as the electrodes, active materials, electrolyte and separator to promote Li-ion transport and reaction uniformity. KRI has reported that:

- non-uniform reaction is reduced by approximately 50% compared with a conventional cell;
- the critical load point is significantly raised compared with a conventional cell, enabling fast and low-temperature charging while suppressing lithium plating; and
- its cells have achieved up to 8,000 cycles to 75% capacity retention, compared with approximately 1,600 cycles for a conventional cell, and rate testing to date includes 25°C, 0.5C charge and 3C to 7.25C discharge, 0–100% state of charge.

The approach uses readily available, scalable materials with a low environmental impact and is designed to be compatible with existing cell-making lines. KRI has built cells in production-relevant stacked laminate (10–11 Ah) and 21700 cylindrical (3.0–3.4 Ah) formats, with ~520 Wh/L energy density.

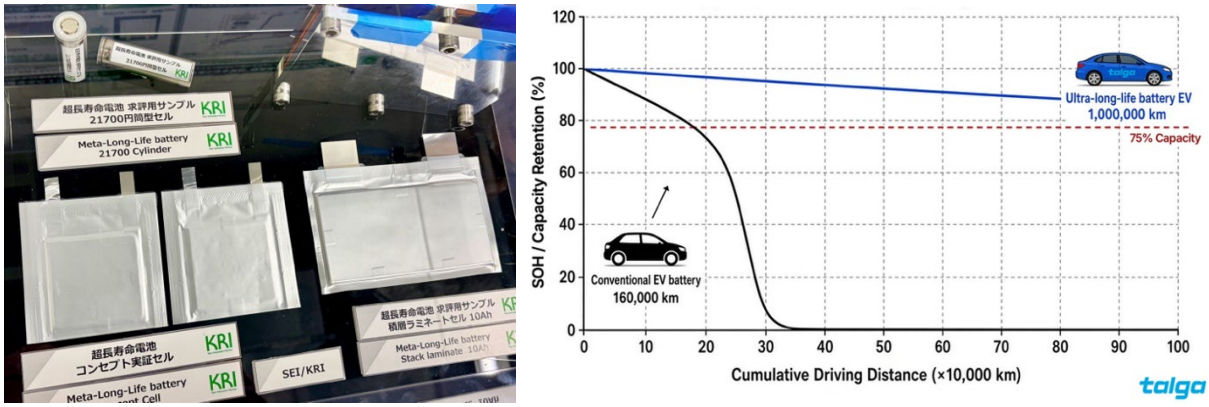


Figure 1: Ultra-long-life battery cells developed by KRI, containing Talga's high-performance anode material Talnode®-C (left) and schematic of 5x battery life comparison in EV cumulative driving range.

The role of Talnode®-C

Talnode®-C is a coated spherical purified natural graphite produced by Talga from its Swedish graphite resources using renewable energy and wholly owned process technology, giving a low emissions footprint, competitive cost and defense-grade supply chain resilience.

In KRI's evaluation, the smaller, highly crystalline and homogeneous natural graphite particles of Talnode®-C, when used in an optimised electrode, have shown low reactivity and high stability throughout the anode, contributing to very long cycle life.

KRI's technology combined with Talga's Talnode®-C anode demonstrates a practical and sustainable path towards long-life batteries, with the potential for batteries that outlast the vehicle and deliver associated positive impacts for society.

Why this is significant for Talga

- **Performance validation.** Long cycle life is a demanding test of an anode and one where artificial graphite has been the incumbent. Success of Talnode®-C in KRI's ultra-long-life cell to date is a third-party validation of its capability in one of the most demanding applications in the battery market.
- **Value proposition.** Higher cycle life supports better total cost of ownership for fleet and robotaxi operators (via lower cost per kilometre) and for battery energy storage systems (via lower cost per kilowatt-hour delivered), primarily by extending service life and reducing replacement requirements.
- **Expanded customer and qualification route.** KRI's sample program provides evaluation cells to users including automotive manufacturers and energy supplier companies. This offers an opportunity for Talnode®-C to be recognised by a wider range of Japanese and Asian customers, supported by the cell-making capability of KRI and its group companies, SEI Corporation and ENAX, Inc.
- **Lower lifecycle emissions.** A battery that lasts five times longer needs fewer replacements per vehicle-kilometre, reducing the embedded carbon footprint per kilometre driven. This complements Talnode®-C's renewable-energy production route and Talga's Swedish, traceable supply chain.

Development timetable

KRI is currently supplying sample cells to evaluation users and is progressing towards commercialisation and production scale-up. Talga will support KRI and its evaluation users through the sample and pilot phases. The timetable is subject to the outcome of customer evaluation and there is no assurance that the collaboration will result in commercial supply of Talnode®-C.

Authorised for release by the Board of Directors of Talga Group Ltd.

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About Talga

Talga Group Ltd (ASX: TLG) is a leader in the development of sustainable battery materials. Via innovative technology and vertical integration of our 100% owned Swedish graphite resources, Talga offers a secure supply of products critical to the green transition.

Talga's flagship product, Talnode®-C, is a natural graphite anode material made using renewable energy for a low emissions footprint. Battery materials under development include an advanced silicon anode product, recycled graphite anode material and conductive additives for cathodes.

Website: www.talgagroup.com

About KRI

KRI is a Kyoto-based contract research and development company, founded in 1987 as Kansai Research Institute and wholly owned by Osaka Gas Co., Ltd., a major Japanese energy group. From its base at Kyoto Research Park, KRI has approximately 190 staff and has been engaged by more than 2,000 corporate clients since its founding, over 90% of them listed on Japan's Prime market, across the automotive, chemical, electrical, steel, ceramics and energy industries.

KRI has around 30 years of experience in lithium-ion battery evaluation, analysis and development. Battery material manufacturers, cell makers, automotive manufacturers, infrastructure companies and government agencies are among more than 400 organisations that have used its battery services. Together with its group companies SEI Corporation and ENAX, Inc., KRI also has its own cell prototyping capability.

Website: https://www.kri-inc.jp/english/

Forward-Looking Statements & Disclaimer

Information in this announcement relating to KRI, its technology, test results and development timetable has been provided by KRI, has not been independently verified by Talga and is subject to change. Cycle life, driving range and lifespan figures are results reported by KRI under specific test conditions or KRI targets, and actual performance in commercial applications may differ.

Statements in this document regarding the Company's business or proposed business, which are not historical facts, are forward-looking statements that involve risks and uncertainties, such as estimates and statements that describe the Company's future plans, objectives or goals, including words to the effect that the Company or management expects a stated condition or result to occur. Those risks and uncertainties include factors and risks specific to the industries in which the Company operates and proposes to operate as well as general economic conditions, prevailing exchange rates and interest rates and conditions in the financial markets, among other things. Since forward-looking statements address future events and conditions, by their very nature, they involve inherent risks and uncertainties. Actual results in each case could differ materially from those currently anticipated in such statements. Investors are cautioned not to place undue reliance on forward-looking statements.

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the plans of the directors and management of Talga will proceed as currently expected or will ultimately be successful.

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