Northern Graphite and Rain Carbon Announce Agreement to Jointly Develop Natural Graphite Battery Anode Material

09.10.2024 | Newsfile

- Northern and RAIN to develop and commercialize advanced natural graphite-based Battery Anode Material with reduced electrode swelling, an extended cycle life and an improved charging speed of lithium-ion battery cells
- New products will improve the performance of natural versus synthetic graphite-based battery anode materials
- Joint Development enables RAIN to further expand and fine-tune its portfolio of LIONCOAT® battery-grade carbon precursor materials and coating technologies
- Joint Development supports integrated mine-to-battery graphite solution for critical mineral supply chains in the Western World

Ottawa, October 9, 2024 - Northern Graphite Corp. (TSXV: NGC) (OTCQB: NGPHF) (FSE: 0NG) (XSTU: 0NG) ("Northern") and Rain Carbon Inc. ("RAIN"), a leading supplier of carbon precursor and carbon products derived from the upcycling of industrial by-products, are pleased to announce a Joint Development Agreement ("JDA") to develop and commercialize advanced battery anode material ("BAM") used in lithium-Ion batteries for electric vehicles.

Under the terms of the JDA, Northern and RAIN will jointly develop and commercialize natural graphite BAM products designed to extend cycle life, enhance charging speed and reduce electrode swelling in lithium-ion battery cells. This innovation addresses the stability gap between natural and synthetic graphite, enabling increased use of natural graphite in Electric Vehicle ("EV") battery cells.

The JDA follows the launch of Northern's Battery Materials Group ("NGCBM") in February and RAIN's announcement of its new Technology Innovation Center for Energy Storage Materials ("Innovation Center") in August. NGCBM included the acquisition of a fully equipped, state-of-the-art carbon and battery laboratory in Frankfurt, Germany capable of both producing BAM derived from the Northern's Lac-des-Îles graphite mine in Canada and of building lithium-ion batteries according to the specifications of automakers seeking critical characteristics, ranging from cycle life and driving range to charging speed.

RAIN's Innovation Center in Hamilton, Canada allows product and application development activities of battery-grade carbon and carbon precursor products in a 30,000 sq. ft. development facility including demonstration plants for the pilot-scale processing of carbon and carbon precursor materials along with laboratories dedicated to the carbon material analysis with state-of-the-art powder and electrochemical testing equipment.

"This exclusive JDA is a significant milestone for our companies and the industry, as it enables increased use of natural graphite in battery anode materials by lowering costs and addressing the environmental concerns linked to synthetic graphite, while enhancing key performance metrics such as cycle life, charging speed and stability," said Northern's Chief Executive Officer, Hugues Jacquemin. "By leveraging Northern's expertise in mining, milling, shaping and purifying natural graphite alongside RAIN's advanced coating capabilities, we are positioned to produce the lower-cost, higher-quality BAM which battery manufacturers and consumers are demanding."

"We are delighted to partner with Northern in this development collaboration, which will allow us to expand and tailor our existing portfolio of LIONCOAT® battery-grade carbon precursors, while also advancing new, efficient and sustainable coating technologies through our Innovation Center in Hamilton, Canada," said RAIN's President, Gerard Sweeney. "This partnership enables us to combine our strengths in raw material integration and processing to produce high-performance battery anode materials, accelerating the development of innovative solutions for the rapidly growing lithium-ion battery market."

Product and Processing Chart

To view an enhanced version of this graphic, please visit:
https://images.newsfilecorp.com/files/4186/226086_6a44f77784808839_001full.jpg

Battery Cell Focus	Advantages to Customers
Extended battery cycle life and increased driving range over the vehicle's lifespan	● Lower cost of ownership due to ● Enhanced vehicle reliability and ● Longer-lasting batteries reduce the environment
Improved fast charging	● Faster charging supports the us fuel vehicles ● Reduced charging times enhan significant barrier to adoption ● Automakers gain a competitive with longer charging times
Reduced electrode swelling	● Increased battery stability and s ● Enhanced vehicle performance ● Improved consistency and pred ● Narrow the performance gap to inherent CO_2 footprints than na

"Combining graphite from our Lac-des-Îles mine and our expertise in graphite shaping (spheroidization) with RAIN's expertise in carbon precursors and coating processes will enable us to develop a high-quality, natural graphite battery anode material for our customers," said Northern's Dr. Moritz Hantel, VP Innovation and Product Management. "Working out of Northern's Battery Materials Group laboratory in Frankfurt, we will be able to demonstrate and verify the electrochemical performance of the products per the needs of our customers to speed up the design-in process in the market."

Tailoring carbon coating to spherical natural graphite and developing efficient and sustainable coating technologies are critical steps in the production of Battery Anode Material, the largest component of Li-Ion batteries, enabling batteries to operate safely, charge quickly, deliver power efficiently and extend battery life. The process involves the application of a protective carbon layer at the surface of the graphite anode active material, to form a more stable solid electrolyte interface ("SEI") which enhances and calibrates what is known as the coulombic efficiency of the first and subsequent cycles, while tuning the performance of Li-Ion insertion into and out of the active material.

At a time when the world is striving for a net zero emitting economy, battery makers are seeking ways to minimize their carbon footprints and natural graphite-based electrode materials produced by ecologically sustainable manufacturing processes support this endeavor.

"At Northern, our driving purpose is to work together to enable a greener tomorrow," said Michael Grimm, President of NGCBM. "In joining forces with an industry leader like RAIN, we are adding cutting-edge coating technology to our toolbelt to help build cleaner and greener lithium-ion batteries for the EV industry."

About Northern Graphite
Northern is a Canadian, TSX Venture Exchange listed company that is the only flake graphite producing company in North America. Northern is focused on becoming a world leader in producing natural graphite and upgrading it into high-value products critical to the green economy, including anode material for lithium-ion batteries/EVs, fuel cells and graphene, as well as advanced industrial technologies. The Company's mine-to-battery strategy is spearheaded by its Battery Materials Division, which has a fully equipped, state-of-the-art laboratory in Frankfurt. The Division is focused on developing advanced anode materials to improve the cycle life and increase the charging rate of lithium ion batteries and on marketing

Northern's patented Porocarb® product. Porocarb® is a carbon based material that enhances the performance of both solid state and lithium-ion batteries and is currently being evaluated by leading global battery manufacturers with very positive results.

Northern's graphite assets include the producing Lac des Iles mine in Quebec where the Company is boosting output to meet growing demand from industrial customers and coming demand from North American battery makers. The Company also owns the large-scale Bissett Creek project in Ontario and the fully permitted Okanjande graphite mine in Namibia, which is currently on care and maintenance and represents an opportunity to substantially increase graphite production at a lower cost and with a shorter time to market than most competing projects. All projects have "battery quality" graphite and are located close to infrastructure in politically stable jurisdictions. Please visit the Northern's website at www.northerngraphite.com/home/, the Northern profile on www.sedarplus.ca, our Social Channels listed below or contact Northern by phone at +1-613-271-2124.

About Rain Carbon Inc.
Rain Carbon Inc., a company with headquarters in Dover, Delaware, USA, is a wholly owned subsidiary of Rain Industries Limited (NSE: RAIN) and is a global, vertically integrated supplier of a diversified portfolio of carbon-based and chemical products that are essential raw materials for staples of everyday life. The company's Carbon segment converts industrial by-products of oil refining, steel production, bio-based and recycling sources into high-value carbon materials and intermediate chemicals. The Advanced Materials segment extends the value chain of its carbon processing through the down-stream refining of a portion of its output into eco-friendly, specialized chemical products. RAIN products enable customers in the aluminum, green steel, graphite, energy storage, tire, adhesive, coatings, pigment and specialty chemicals industries to transform by-products into usable, valuable products. RAIN's LIONCOAT® battery-grade carbon precursor materials are world-wide used ingredients for graphite and silicon-carbon composite materials used in lithium-ion batteries. Learn more about Rain Carbon's innovative technical product solutions at www.raincarbon.com.

For media inquiries contact
Pav Jordan, VP of Communications
Email: pjordan@northerngraphite.com

Matthew Scott-Hansen, EVP - Corporate
Email: raincorpcomms@raincarbon.com

LinkedIn
YouTube
Twitter
Facebook

Cautionary Note Regarding Forward-Looking Statements
This news release contains certain "forward-looking statements" within the meaning of applicable securities laws, including within the meaning of the safe harbor provisions of the Ontario Securities Act, R.S.O. 1990, c. S.5 and U.S. Private Securities Litigation Reform Act of 1995. Forward-looking statements and information are matters that are not historical facts including financial and growth projections as well as statements concerning plans, strategies, intentions and beliefs concerning business and applicable markets. Such forward-looking statements are frequently characterized by words such as "plan", "expect", "project", "intend", "believe", "anticipate", "estimate", "potential", "possible" and other similar words, or statements that certain events or conditions "may", "will", "could", or "should" occur. All such forward-looking statements are based on assumptions and analyses made by management based on their experience and perception of historical trends, current conditions and expected future developments, as well as other factors they believe are appropriate in the circumstances. Although the forward-looking statements contained in this news release are based on what the applicable company's management believes are reasonable assumptions, the companies cannot assure investors that actual results will be consistent with them with those beliefs and assumptions. Further, these statements are subject to a variety of risks and uncertainties and other factors that could cause actual events or results to differ materially from those projected including, but not limited to, unexpected changes in laws, rules or regulations, or their enforcement by applicable authorities; the failure of other parties to perform as agreed; social or labour unrest; changes in commodity prices; unexpected failure or inadequacy of infrastructure and the failure of ongoing and contemplated studies to deliver anticipated results or results that would justify and support continued studies, development or operations and the inability to raise required financing. Readers are cautioned not to place undue reliance on forward-looking information or statements.

These forward-looking statements are made as of the date of this news release and are expressly qualified in their entirety by this cautionary statement. Subject to applicable securities laws, the companies do not assume any obligation to update or revise the forward-looking statements contained herein to reflect events or circumstances occurring after the date of this news release.

Neither the TSX Venture Exchange nor its Regulation Services Provider (as that term is defined in the policies of the TSX Venture Exchange) accepts responsibility for the adequacy or accuracy of this news release.

To view the source version of this press release, please visit https://www.newsfilecorp.com/release/226086