Battery X Metals Announces Advancements in Eco-Friendly Lithium-ion Battery Material Recovery Technology with Global Top 20 University Partnership

News Release Highlights:

- **Significant advancements in eco-friendly lithium-ion battery material recovery from black mass achieved through Battery X's proprietary froth flotation process.**

- **Battery X plans to conduct assays to quantify graphite recovery rates from black mass and shift focus toward validating oxide and phosphate recovery from remaining tailings.**

- **Collaboration with a Global Top 20 University yields promising results in graphite recovery, focusing on refining multi-stage flotation protocols for improved process design.**

VANCOUVER, British Columbia – October 30, 2024 – **Battery X Metals Inc. (CSE:BATX) (OTCQB:BATXF) (FSE:R0W, WKN:A3EMJB)** ("**Battery X Metals**" or the "**Company**") announces significant advancements by its wholly-owned subsidiary, Battery X Recycling Technologies Inc. ("**Battery X**"), in developing sustainable technology for recovering battery-grade materials from lithium-ion batteries. In collaboration with a globally recognized Top 20 University (the "**Global Top 20 University**"), this initiative has shown promising results in optimizing graphite recovery through Battery X's proprietary froth flotation process, using standardized protocols for black mass recovery.

Advancing the Clean Energy Transition and EV Revolution Through Battery-Grade Material Recovery

Battery X is advancing eco-friendly battery recycling technology in collaboration with a Global Top 20 University to efficiently and economically recover battery-grade materials such as graphite, lithium, nickel, and cobalt, from the residual material of shredded, end-of-life lithium-ion batteries, called "black mass".

Unlike traditional hydrometallurgical and pyrometallurgical methods, which do not recover graphite—despite it comprising roughly 95% of the battery anode[6]—Battery X's innovative froth flotation technology has shown promising results in recovering battery-grade graphite from black mass. This key breakthrough addresses a critical gap in the rapidly growing battery recycling market.

Preliminary results have successfully recovered the majority of graphite in the black mass samples, demonstrating the flotation process's effectiveness. These results lay a foundation for further validation, with plans to conduct chemical assays to quantify graphite recovery rates, assess purity levels, and confirm the separation of oxides and phosphates from the graphite.

Upon successfully validating and quantifying graphite recovery rates, Battery X and the Global Top 20 University will focus on validating oxide and phosphate recovery from the remaining tailings. Upon successful validation, Battery X intends to file provisional patents, securing intellectual property (IP) for these advancements. Battery X's future business strategy centers on licensing this IP to battery recyclers with existing infrastructure, aiming to establish itself as a downstream technology partner with a low-capex, scalable model.

Breakthrough in Graphite Recovery and Preliminary Observations

In controlled laboratory tests, the Global Top 20 University conducted multiple experiments to optimize black mass flotation in a Denver Cell with a 500g sample size for each experiment, assessing various frother and collector dosages across single- and multi-stage flotation protocols. Initial single-stage tests focused on frother-only trials to stabilize bubbles, followed by adding a collector to enhance graphite's hydrophobicity. The frother-alone trials produced dark froth that lightened over time, while the addition of a collector created a more stable, thicker froth, extending flotation duration and enhancing graphite separation.

Multi-stage flotation protocols with adjusted frother and collector dosages further refined the separation process. Multi-stage flotation showed that each stage's froth thinned and lightened over time, with flotation effectively concluding more rapidly.

Preliminary assays confirmed that the black mass sample used in the experiments consisted of approximately 45% graphite, with oxides and phosphates comprising the remainder. Initial separation tests successfully floated approximately 45% of the black mass sample (mainly graphite), while oxides and phosphates remained in the tailings, underscoring the efficiency of the flotation process in isolating battery-grade graphite, a fundamental component to lithium-ion anodes. These promising results serve as a baseline for validating the recovery technology.

Process Design Advancements and Multi-Stage Flotation Benefits

Battery X and the Global Top 20 University have made strides in process design through lab-scale trials, demonstrating that multi-stage flotation achieves more efficient material separation than single-stage methods. Trials incorporated varied reagent dosages to stabilize froth formation, maximize graphite yield, and manage oxide and phosphate separation in specific stages. Ongoing R&D efforts focus on consistent trial results that align with industry metrics, providing a solid foundation for future potential scalability.

Next Steps in the Collaborative Research and Development Program

Battery X and the Global Top 20 University intend to conduct comprehensive chemical assays to quantify graphite recovery rates, assess material purity, and verify oxide and phosphate separation. With the current black mass sample being primarily oxide-based, the next phase will focus on optimizing oxide and phosphate recovery, testing additional surfactants in dedicated flotation stages to validate oxide and phosphate recovery, for future patent applications and commercial use. To further support this phase, Battery X plans to provide the Global Top 20 University with phosphate-based black mass samples to test in tandem with its existing oxide-based sample. Upon successful validation Battery X and the Global Top 20 University plan to pursue provisional patents to secure IP for these advancements, with the Company's future business strategy centered on licensing this IP to battery recyclers with existing infrastructure, aiming to establish itself as a downstream technology partner with a low-capex, scalable model.

Lithium-Ion Battery Recycling Industry Tailwinds and Significance of Graphite Recovery

Mercedes-Benz (FSE:MBG) recently opened Europe's first battery recycling plant, incorporating an integrated mechanical-hydrometallurgical process and becoming the first automotive manufacturer

worldwide to establish an in-house battery recycling loop[1]. This development underscores the industry's shift toward sustainable battery recycling as an essential component of the clean energy transition.

The global shift toward electrification is driving the clean energy transition, with lithium-ion batteries playing a central role in reducing reliance on fossil fuels[2]. Global demand for lithium-ion batteries is projected to increase by 670% by 2030[3], with energy storage needs rising from 700 GWh in 2022 to 4.7 TWh[3], largely driven by electric vehicles (EVs)[3]. Regulatory initiatives like the U.S. Inflation Reduction Act, Europe's "Fit for 55" program, and the EU's 2035 ban on internal combustion engine vehicles bolster this demand[2]. Despite these efforts, less than 5% of lithium-ion batteries are currently recycled[4]. As EVs and battery storage are projected to account for nearly half of the mineral demand growth from clean energy technologies over the next two decades[5], the need for battery materials such as graphite, lithium, nickel, cobalt, manganese, and copper becomes paramount.

As governments and corporations emphasize battery recycling, Battery X's eco-friendly lithium-ion battery-grade material recovery technology becomes increasingly relevant. Unlike traditional hydrometallurgy and pyrometallurgy methods, which do not recover graphite—despite it comprising approximately 95% of the battery anode[6]—Battery X's technology uniquely targets battery-grade graphite recovery. This approach positions Battery X to address a significant gap in the growing battery recycling market.

Currently at lab scale, Battery X's collaboration with the Global Top 20 University is focused on refining recovery processes, metrics, and evaluating economic factors essential for future commercial applications. As part of its licensing-based future business strategy, Battery X plans to avoid high-capital expenditures in infrastructure, instead enabling industry partners to adopt its eco-friendly battery recycling technology. With this approach Battery X aims to lead sustainable battery recycling technology, contributing to a circular economy by making the recovery and reintegration of critical battery materials into the supply chain both efficient and environmentally responsible.

Management Commentary

"Our progress in developing proprietary eco-friendly technology is a significant step forward in sustainable battery recycling, particularly by addressing graphite recovery, which is often overlooked in conventional methods," said Massimo Bellini Bressi, CEO of Battery X Metals. "The positive preliminary results from our collaboration with a Global Top 20 University highlights our potential to meet the increasing demand for battery materials in a sustainable way. We look forward to advancing this partnership, validating our technology, applying for provisional patents, and ultimately exploring strategic opportunities to license our technology to industry partners."

1 Mercedes-Benz

2 EnergyX

3 McKinsey & Company

4 CAS

5 Mining Review Africa

6 ECGA

About Battery X Metals Inc.

Battery X Metals Inc. (CSE:BATX) (OTCQB:BATXF) (FSE:R0W, WKN:A3EMJB) is committed to advancing North America's clean energy transition through the development of proprietary technologies and domestic battery and critical metal resource exploration. The Company focuses on extending the lifespan of electric vehicle (EV) batteries, through its portfolio company, LIBRT[1], recovering battery grade metals from end-of-life lithium-ion batteries, and exploring domestic battery and critical metals resources. For more information, visit batteryxmetals.com.

1 49% owned Portfolio Company

On Behalf of the Board of Directors

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