

Avalon Expands Partnership Agreement with Metso of Finland for Its Lithium Processing Facility and New Technology and Innovation Centre in Ontario

Toronto, Ontario--(Newsfile Corp. - October 19, 2023) - Consistent with its strategic objective to build Ontario's first vertically integrated lithium supply chain serving the North American EV battery market, [Avalon Advanced Materials Inc.](#) (TSX: AVL) (OTCQB: AVLNF) ("Avalon" or the "Company") has entered into an expanded partnership agreement with **Metso Corporation** ("Metso") to advance the construction of a full-service lithium processing facility in Thunder Bay, Ontario. The parties have also agreed to co-develop a Technology & Innovation Centre to be located on-site in Thunder Bay, accelerating an Industrial Park concept that will co-locate key supply chain partners.

Partnership Highlights:

- Metso to provide testing and engineering equipment procurement and related services to develop and commercialize Avalon's Thunder Bay lithium processing facility.
- Create a testing laboratory for research and development on lithium and clean technology solutions.
- Avalon and Metso to cooperate on the recycling of used batteries and the refining of battery chemicals for recycle use.



From left: Giuseppe Campanelli, Metso President, North and Central America, Mikko Rantaharju, Metso Vice President, Hydrometallurgy, Zeeshan Syed, Avalon President, Rickardo Welyhorsky, Avalon Chief Operational Officer.

To view an enhanced version of this graphic, please visit:
https://images.newsfilecorp.com/files/3386/184489_img_8476.jpg

The expanded partnership agreement follows a memorandum of understanding from July 2023 that

enabled Metso and Avalon to develop an innovative, sustainable methodology to produce commercial lithium hydroxide from petalite mineral feeds.

"Avalon is proud to import world-leading innovation and processing technology solutions to help ensure that Canada leads the NetZero economy of the future. This agreement is the next step in leveraging Metso's market-leading expertise and technology to build a processing facility that will serve as a regional destination not just for Avalon's joint venture lithium deposit, but for other lithium projects across northwestern Ontario — thus unlocking the province's lithium resources for use in the expanding EV battery manufacturing base in Southern Ontario," said Zeeshan Syed, President of Avalon.

"The expanded scope of our partnership will create supply chain efficiencies and increase the value of previous investment commitments in the province of Ontario," Mr. Syed added.

Mikko Rantaharju, Vice President, Hydrometallurgy at Metso noted: "Metso is proud to partner with Avalon on their bold vision for Thunder Bay, and help co-create novel processing, training, recycling and research capacity. Metso has successfully worked with Avalon in this remarkable project to develop a sustainable process to produce battery grade lithium using our proprietary alkaline pressure leach process. This agreement marks yet another key milestone between the parties as we advance forward to build a wide scope of economic benefits for the future."

Innovative, Sustainable Processing

Through the R&D efforts undertaken by Avalon and Metso, the proprietary lithium hydroxide process represents a far more sustainable conversion method compared to conventional acid roasting. The process operates in an alkaline state and utilizes pressure leaching, which is unique for lithium conversion, eliminating the use of sulfuric acid, and with no production of sodium sulphate as a byproduct. Instead, a substance called Analcime — an inert solid aluminium silicate—is produced, as well as calcium carbonate. Importantly, both substances have commercial uses in industrial building applications and other industries. The method also reduces overall air emissions compared to conventional lithium processing.

In addition, this process is expected to be a safer for operating personnel, the environment and the community in general compared to the traditional acid roasting method which is used in jurisdictions with less stringent commitments to environmental safety and stewardship compared to North America.

The planned Thunder Bay processing facility and Avalon's upstream joint venture lithium project located near Kenora, ON are expected to create an estimated 500 full-time jobs. It will also enable broader development of northwestern Ontario's regional lithium assets by other producers seeking to utilize the proximity of Avalon's processing capacity. The facility is also expected to help foster new economic development opportunities for local and regional Indigenous communities.

The Company anticipates the Thunder Bay facility to commence commercial activity in 2028.

Technology & Innovation Centre (TIC)

Avalon and Metso are also planning to co-develop, along with regional educational institutions such as Lakehead University and Confederation College, a Technology & Innovation Centre on-site to conduct research and development in the areas of critical minerals and clean technologies, which will contribute to Canada's transition to a NetZero economy.

The TIC intends to house the following:

- A bench-scale testing lab for research and development on lithium and clean technology.
- An assaying lab for research analysis and daily assaying of production and performance.
- A full demonstration plant for piloting, testing and verification of various lithium pegmatite minerals.
- A training facility to support the full-scale commercial process, furthering the Sustainable Jobs Act

announced in June of this year to create the NetZero workforce of the future.

Metso has further agreed to provide instructional training for testing, investigation, design, and engineering to maximize the recycling of waste product as well as determine new uses in other industrial applications. Overall, this initiative will support Avalon's commitment to minimizing environmental impacts and accelerate Canada's environmental leadership on the world stage.

About Avalon Advanced Materials Inc.

Avalon Advanced Materials Inc. is a Canadian mineral development company focused on vertically integrating the Ontario lithium supply chain. The Company, through its joint venture with Sibelco NV, is currently developing its Separation Rapids lithium deposit near Kenora, ON, while also continuing to advance the Lilypad and Snowbank lithium projects located near Fort Hope, ON. Avalon is also working to develop its Nechalacho rare earths and zirconium project located in the Northwest Territories. This deposit contains critical minerals for use in advanced technologies in the communications and defense industries among other sectors.

In addition to these upstream activities, Avalon is executing on a key initiative to develop Ontario's first midstream lithium hydroxide processing facility in Thunder Bay, ON, a vital link bridging the lithium resources of the north with downstream EV battery manufacturing customers and markets in the south. Social responsibility and environmental stewardship are corporate cornerstones. Avalon is listed on the (TSX: AVL) and (OTCQB: AVLNF).

About Metso Corporation (Finland)

Metso is a leader in providing sustainable technologies, end-to-end solutions and services for the aggregates, minerals processing and metals refining industries globally. With process and product expertise, Metso helps customers increase productivity, improve energy and water-use efficiency and raise their overall environmental performance.

For battery minerals, Metso provides sustainable technology and equipment for the entire production chain, from the mine to battery materials and black mass recycling with project scopes ranging from equipment packages to plant deliveries. Headquartered in Helsinki, Finland, Metso employs over 16,000 people in close to 50 countries with sales in 2022 of EUR 5.3 billion. The company is listed on the Nasdaq Helsinki.

For more information and media inquiries, Zeeshan Syed, President of Avalon, is available for comment at (647) 300-4706 or IR@AvalonAM.com.

Forward-Looking Information

This release contains "forward-looking information" within the meaning of applicable Canadian securities legislation. Forward-looking information includes, but is not limited to, information with respect to the development of the Company's material lithium projects, including the construction of the Company's lithium processing facility', expected capital expenditures, operations outlook, procurement and related services to develop and commercialize the proposed processing facility, successful use and implementation of novel battery recycling technology, including anticipated environmental and cost benefits, expected benefits from the facility the transition to a green economy, job creation, successful development of a lithium supply chain, governmental support, sustainable processing practices, environmental benefits, requirements for additional capital, the Company's capital allocation, development of a technology and innovation centre and its expected benefits, and government regulation of mining operations. Generally, forward-looking information can be identified by the use of forward-looking terminology such as "add" or "additional", "advancing", "anticipates" or "does not anticipate", "appears", "believes", "can be", "conceptual", "confidence", "continue", "convert" or "conversion", "deliver", "demonstrating", "estimates", "encouraging", "expand" or

"expanding" or "expansion", "expect" or "expectations", "forecasts", "forward", "goal", "improves", "increase", "intends", "justification", "plans", "potential" or "potentially", "promise", "prospective", "prioritize", "reflects", "robust", "scheduled", "suggesting", "support", "top-tier", "updating", "upside", "will be" or "will consider", "work towards", or variations of such words and phrases or state that certain actions, events or results "may", "could", "would", "might", or "will be taken", "occur", or "be achieved".

Forward-looking information is subject to known and unknown risks, uncertainties and other factors that may cause the actual results, level of activity, performance or achievements of the Company to be materially different from those expressed or implied by such forward-looking information, including risks associated with the ability to raise sufficient capital to construct the Company's proposed processing facility, receipt of all required regulatory approvals and permits for the development and construction of the Company's processing facility, success of Metso's novel battery technology, mineral exploration and development operations such as: environmental hazards and economic factors as they affect the cost and success of the Company's capital expenditures, the ability of the Company to obtain required permits and approvals, the ability of the Company to obtain financing, uncertainty in the estimation of mineral resources, uncertainty with respect to the ability to successfully construct and develop the Company's lithium processing facility, the price of lithium, no operating history, no operating revenue and negative cash flow, land title risk, the market price of the Company's securities, the economic feasibility of the Company's mineral resources and the Company's commercial viability, inflation and uncertain global economic conditions, uncertain geo-political shifts and risks, successful collaboration with indigenous communities, future pandemics and other health crises, dependence on management and other highly skilled personnel, title to the Company's mineral properties, the ongoing war in Ukraine, extensive government and environmental regulation, reliance on artificial intelligence technology to influence mining operations, volatility in the financial markets, uninsured risks, climate change, threat of legal proceedings, as well as those risk factors discussed or referred to in the annual information form of the Company dated November 28, 2022 (the "AIF") under the heading "Description of the Business – Risk Factors". Forward-looking information is based on the reasonable assumptions, estimates, analysis and opinions of management made in light of its experience and perception of trends, current conditions and expected developments, as well as other factors that management believes to be relevant and reasonable in the circumstances at the date that such statements are made, but which may prove to be incorrect. Although the Company believes that the assumptions and expectations reflected in such forward-looking information are reasonable, undue reliance should not be placed on forward-looking information because the Company can give no assurance that such expectations will prove to be correct. In addition to other factors and assumptions identified in the AIF, assumptions have been made regarding, among other things: management of certain of the Company's assets by other companies or joint venture partners, the Company's ability to carry on its exploration and development activities without undue delays or unbudgeted costs, the ability of the Company to obtain sufficient qualified personnel, equipment and services in a timely and cost-effective manner, the ability of the Company to operate in a safe, efficient and effective manner, the ability of the Company to obtain all necessary financing on acceptable terms and when needed, the accuracy of the Company's resource estimates and geological, operational and price assumptions on which these are based and the continuance of the regulatory framework regarding environmental matters. Readers are cautioned that the foregoing list is not exhaustive of all factors and assumptions that may have been used. Although the Company has attempted to identify important factors that could cause actual results to differ materially from those contained in forward-looking information, there may be other factors that cause results not to be as anticipated, estimated or intended. There can be no assurance that such information will prove to be accurate, as actual results and future events could differ materially from those anticipated in such information. Accordingly, readers should not place undue reliance on forward-looking information. The Company does not undertake to update any forward-looking information, except in accordance with applicable securities laws.



To view the source version of this press release, please visit
<https://www.newsfilecorp.com/release/184489>