

Avalon Advanced Materials confirm the widespread adoption of lithium ion battery technology

Avalon Advanced Materials {TSX: AVL} have published an industry study of the growing adoption of the lithium ion battery as the preferred choice for technology companies.

This includes the motor and energy storage sectors.

INDUSTRY BULLETIN:

Major industrials jockey for position in rapidly evolving energy storage and electric vehicle markets

Recent announcements from major international companies confirm the widespread adoption of lithium ion battery technology in automotive and energy storage applications. This is accelerating and creating increased interest in securing new supplies of lithium.

It has long been rumoured that Apple Inc. plans to enter the electric vehicle ("EV") market and is actively developing its own product. It is also rumoured that Magna International Inc. will partner with Apple to build EVs in Austria, and is currently working from a "secret" facility in Berlin. Magna's

recent acquisitions of two German automotive supply businesses, including Telemotive AG and their five German plants, is a major step toward improving Magna's vehicle electronics capacity and European footprint.

Application of lithium ion energy storage technology to utility power (grid) systems is also growing, although some technical challenges remain. Growth potential is enormous, with New York based Lux Research Inc. seeing the energy storage systems market (based on lithium technology) growing from approximately 700 MWh deployed in 2015 to 10,000 MWh (10 GWh) annually by 2025; a cumulative annual growth rate ("CAGR") of 30%. Saudi Arabia has committed to building 9.5 GWh in renewable energy capacity, in all likelihood supported by lithium battery storage, by 2030 at the latest, or approximately 700 MWh a year. Significantly, global aerospace technology giant Lockheed Martin announced recently that it is entering the business toward the integration of lithium ion systems.

Preference for lithium ion technology over other competing technologies, such as fuel cells, was indicated by global electronics technology conglomerate Samsung Group ("Samsung"), when the company announced recently that they will no longer be active in the fuel cell business, stating simply, "the outlook of the market isn't good." Samsung had been active in the fuel cell business; however, it now sees lithium ion batteries as "more affordable, usable, efficient and competitive in terms of costs." Samsung plans to invest more than \$2.6 billion in batteries for EVs and the EV-related parts businesses over the next five years alone. This move echoes a realization made by others in the industry, including the head of Daimler, Dieter Zetsche, commenting that EV technology "has more answers" related to range and costs as it

is as yet unclear how to make hydrogen cheap and widely available.

These developments have left numerous companies scrambling to secure future lithium supply. Recently BYD, one of the world's largest battery manufacturers and China's largest electric car and bus manufacturer, announced plans to secure supplies of lithium by investing in mining to guard against increasing costs of raw material..

Lithium ion batteries are emerging as the leading energy storage technology for EVs and grid energy storage. There is little doubt that this rapid expansion in demand will require secure, sustainable and high quality sources of lithium compounds. Avalon is well-positioned with its advanced Separation Rapids Lithium Project to participate in the growing lithium ion battery supply chain.

For questions or feedback, please email ir@AvalonAM.com

About Avalon Advanced Materials Inc.

Avalon Advanced Materials Inc. {TSX: AVL} is a Canadian mineral development company specializing in niche market metals and minerals which are in growing demand in new technology.

The Company has three advanced stage projects, all 100%-owned, providing investors with exposure to lithium, tin and indium, as well as rare earth elements, tantalum, niobium, and zirconium. Avalon is currently focusing on its Separation

Rapids Lithium Project, Kenora, ON and its East Kemptville Tin-Indium Project, Yarmouth, NS. Social responsibility and environmental stewardship are corporate cornerstones.

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[Potentially Game-Changing Saudi Arabian Government Restructuring Bolsters 9.5 GW Renewable Energy Target by 2023](#)

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