



Company News

Metso introduced a sustainable Battery Black Mass Recycling Process

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Helsinki, Finland -

Battery black mass recycling is becoming an important means to complement virgin battery metals supply and to reduce the carbon footprint of the battery supply chain. To respond to these needs, Metso is launching an advanced sustainable battery black mass recycling process. The process complements Metso's extensive battery minerals technology offering, which covers concentration and hydrometallurgical processing as well as related services.

"The demand for battery minerals is increasing sharply with the ongoing transition to clean energy sources. For example, an electric car battery weighs approximately 200 kilos and is made of several metals. To cater for this demand, the world will need to produce more minerals and metals, but we also need to strive to close the loop and extend the life cycle of these valuable materials through efficient recycling. With Metso's technology, the critical metals can be sustainably extracted from black mass and re-used in new battery production or in other applications. Recycling of black mass from batteries with Metso's process can reduce up to 60% of embedded carbon compared to use of virgin materials," explains Don Simola, Director, Battery Chemicals Technology at Metso.

Metso's hydrometallurgical black mass recycling process enables the treatment of mechanically separated and shredded batteries for recovering battery raw materials like nickel, cobalt, and lithium, as well as manganese and copper. The process is based on Metso's proprietary VSF® X Solvent extraction technology and complemented with OKTOP® reactors, Larox® PF filters, Dual Media (DM) and LSF filters, and thickeners and scrubbers. Many of these technologies are part of Metso's Planet Positive offering. The process flowsheet can be tailored according to feed materials and desired end products with a possible phased approach for adding equipment also for the recovery of less valuable materials.

Industry's largest Scope for Battery Minerals Processes

"With the launch of the battery black mass recycling process, our offering for the battery minerals value chain covers 90% of the end-to-end production process. We can provide sustainable technology and equipment for the entire lithium, nickel, and cobalt production chain from the mine to battery materials and black mass recycling with project scopes ranging from equipment packages to plant deliveries. We can also support our customers in the design of the process with our comprehensive testing and research capabilities," says Mikko Rantaharju, Vice President, Hydrometallurgy at Metso.