

Northern light on Finnish lithium

Keliber Oy explains how its green process has given it a footing to become Europe's first producer of lithium carbonate

OLLE SIRÉN, THE general manager of Finnish lithium company Keliber Oy was recently awarded InnoFinland's prize for its new green processing method to produce lithium carbonate (Li_2CO_3) from spodumene.

The new process, developed by Oslo-based Nordic Mining owned Keliber, is said to be an environmentally friendly and energy efficient production method for Li_2CO_3 with use of biogas made from biological waste. With it Keliber is looking to become the Europe's sole high purity Li_2CO_3 producer.

Biogas from waste is used both as energy and raw material in a continuous production process for Li_2CO_3 . The processing method has been developed in cooperation with various technological partners including Outotec Oy. Keliber's concept has

processing perspectives beyond a crystallised carbonate product high in lithium (>99.9%) and the company has started to investigate the potential for downstream processing of lithium-based chemicals as a direct or indirect continuance of the processing route.

Biogas fuelled Li

Keliber's Li_2CO_3 production plant will be located in Kalavesi of Kaustinen municipality with the first spodumene mine at Lättä some 25km away. Keliber has recently expanded its territories in the Ostrobothnia lithium province and plans to explore for further resources.


The Kalavesi plant will have a covered storage for crushed ore, a concentration plant, a unit for spodumene conversion, a leaching plant and necessary packing

and storage units. Advanced laboratory facilities and systems will be integrated with production.

The Finnish waste fuels and environmental management company Lassila & Tikanoja Oy will build its own biogas plant adjacent to Keliber's plant utilising biogas for the process. Raw materials for producing biogas are abundantly available in the region.

Biogas contains 60-70% methane and 30-40% carbon dioxide (CO_2). Biomethane is used for heating in the conversion of spodumene. CO_2 is used for the refinement process of Li_2CO_3 .

The symbiotic relation between production of bio-energy and lithium as the future core material in advanced energy storage systems add to the sustainability and environmental attractiveness of the project for Keliber and Nordic Mining.

In addition, the leaching process has "unique environmental and product quality advantages compared with alternative sulphur based methods" according to the company. Keliber expects that customer requirements will have a total value chain approach also when it comes to environmental footprints regarding this a significant competitive advantage of increasing international awareness. 

Keliber's lithium carbonate process

