



Innovative Recycling: EU Research Project RELiEF Kicks Off to Give New Life to Previously Unrecovered Lithium in Batteries

By setting up an integrated recycling facility, the consortium of 13 interdisciplinary European partners will provide a solution to greatly reduce Lithium waste and decrease the dependency of the EU on imported battery chemicals and raw materials.

15th July 2022 – Lithium metal has been in high demand. Now more so than ever with the increasing popularity of e-mobility. Despite lithium recycling being an established process, an estimated 27% of the current global lithium production still turns into waste. The new research project RELiEF, a consortium of 13 partners from seven European countries, sets out with the very clear goal of reducing lithium waste by more than 70% through the use of previously unused secondary lithium sources. Funded through the European Union’s Horizon Europe Framework Programme for Research and Innovation, the project will receive EUR 6 million over the next three years. RELiEF is coordinated by Avesta Battery & Energy Engineering and the consortium kicks off its activities today with a virtual meeting.

The demand for lithium has almost quadrupled over the last decade paired with a staggering price hike. Supply still seems to be keeping up with the increasing demand, yet experts fear future supply chain bottlenecks, especially due to the limited geographic concentration of lithium production. More than 90% of global production results from four countries with deposits forecast to be depleted by 2055. Effective reuse and recycling of the raw material is therefore paramount across all stages of the production and use cycle to mitigate any possible future risks. It ensures maximum usage of available resources cost-effectively while reducing the environmental impact of primary lithium production and decreasing dependency on imports of raw materials.

“By revolutionising the Lithium recycling process through the inclusion of unused secondary materials, the RELiEF project plays a crucial role in avoiding future supply chain disruptions and in closing the loop for a circular economy,” explains Rajapandian Rajagopal, Head of Recycling – Battery Materials, of Avesta Battery & Energy Engineering and coordinator of the project.

With the development of an integrated Lithium recycling facility at a pilot plant site in Belgium, the RELiEF team will establish a process to produce battery materials from secondary and low-grade lithium sources, previously not recycled. These sources may be solid materials such as waste slag from the lithium metal production or liquid such as wastewater containing lithium generated during battery recycling.





Press Release

Mr Rajagopal adds: “Battery precursor production in the EU is very new to the industry and due to the dependency on raw materials there is a technological and knowledge gap to be closed, especially as raw material processing within the EU will grow in importance. With RELiEF we will be able to bridge that gap from initial supply issues to closing the loop of battery materials. Most importantly, this will be done sustainably and in a socially acceptable fashion.”

Technically, central to the project is the development of safe and efficient pre-processing unit operations for solid input materials, while ensuring a selective and high rate of lithium leaching as well as the recovery of lithium selectively from the liquid stream. This also includes the recovery of high-purity lithium derivatives. Battery materials will be developed in a continuous process to recover functional battery-grade material. This will be complemented by improved process flow sheets and a new business model that ensures the economic competitiveness of the newly developed process.

The RELiEF consortium responsible for this novel recycling process comprises small and medium-sized enterprises, non-profit Research and Technology Organisations, universities and an associated industrial partner from Belgium, Finland, France, Germany, Portugal, Romania and The Netherlands. The project officially kicks off its activities with a first meeting taking place virtually on the 15th July 2022.

Project Key Facts

Full Name: RELiEF – Recycling of Lithium from Secondary Raw Materials and Further

Start Date: 15th July 2022

Duration: 36 months

Budget: 6 million €

Coordinator: Avesta Battery & Energy Engineering, Belgium

Website: www.lithium-relief.eu

Social Media: [LinkedIn](#) | [Twitter](#)

Project Partners

Belgium

- Avesta Battery & Energy Engineering
- Université Libre De Bruxelles

Finland

- Lappeenranta-Lahden Teknillinen Yliopisto - LUT

France

- Extractive
- Isatis Partners



Funded by
the European Union

Press Release



Germany

- Eurice - European Research And Project Office GmbH
- Zentrum für Sonnenenergie- und Wasserstoff-Forschung Baden-Württemberg - ZSW

Portugal

- INEGI - Instituto de Ciência e Inovação em Engenharia Mecânica e Engenharia Industrial
- Pegmatítica - Sociedade Mineira de Pegmatites, Lda
- Universidade Nova De Lisboa

Romania

- Institutul Național de Cercetare-Dezvoltare Pentru Metale Neferoase și Rare- IMNR

The Netherlands

- TechConcepts BV

Contact

Project Coordinator

Avesta Battery & Energy Engineering, Belgium

Noshin Omar

Phone: +32 486 99 74 51

Mail: noshin.omar@abeegroup.com

Project Management

EURICE GmbH

Samuel Hoefman

Phone: +49 6894 388 1341

Mail: s.hoefman@eurice.eu



Funded by
the European Union