
# NEW EU-FUNDED PROJECT PROPOSES INNOVATIVE TECHNOLOGIES FOR SUSTAINABLE REUSE AND RECYCLING OF PV SOLAR PANELS AND EV BATTERIES

Brussels, 30 January 2024

**A new Innovation Action (IA) project was launched to demonstrate the sustainable reuse and recycling of solar photovoltaic (PV) panels and electric vehicle (EV) batteries. The project, titled SOLMATE, has received funding from the European Health and Digital Executive Agency (HADEA) under the Horizon Europe programme.**

SOLMATE project – short for *Reuse of SOLar PV Panels and EV Batteries for low-cost decentralised energy solutions and effective Recycling of critical raw MATErials from their EoL products,* was officially set in motion on 30 January 2024 in Brussels, in the company of all project partners and representatives of the funding authority. Building on industrial insights and knowledge previously generated within other EU-funded projects, SOLMATE aims to shape a future where clean energy is accessible, affordable, and environmentally conscious. The project addresses the waste management challenges raised by the increasing number of end-of-life (EoL) electric vehicle (EV) batteries and decommissioned photovoltaic (PV) panels, giving these a second life.

This circular initiative is designed to prioritise reuse before recycling, aligning with the "waste hierarchy" principles indicated in the EU's Waste Framework Directive. The project will achieve its goal following two main routes: firstly, by extending the lifespan of solar PV panels and EV batteries through the implementation of low-cost decentralised energy solutions across three different use cases; secondly, by showcasing efficient recycling processes for critical raw materials (CRMs) available in EoL PV panels and EV batteries that cannot be reused.

SOLMATE **will address all challenges in developing low cost decentralised energy systems**. These challenges include: developing automated and cost-effective dismantling technologies and certification protocols to ensure the prolonged operation of PV panels and EV batteries beyond their initial utilisation, addressing the unregulated 2nd life PV market, establishing green and economically viable recycling processes for valuable CRMs available in batteries.

## TOWARDS CIRCULAR AND INTEGRATED BUSINESS MODELS FOR 2ND LIFE PV PANELS AND EV BATTERIES

Europe's pursuit of climate neutrality by 2050 depends on the availability of CRMs requested by the adoption of clean technologies. SOLMATE responds to this urgency by proposing innovative strategies for the sustainable reuse and recycling of PV panels and EV batteries. It ensures adequate management of valuable resources contained in these decommissioned applications, thus

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contributing to the circularity of the EU market and fostering a sustainable supply chain for the green transition. The project is designed to lay the foundations of new sustainable business models, with partners focusing on five distinct objectives:

1. Decrease costs for decentralised energy systems' components for the main components (PV panels and batteries), providing solutions for farmers, plug-in systems, and low-income households and communities.
2. Optimise processes related to the automation technologies for low-cost PV dismantling, sorting, and certification.
3. Reduce expenses associated with testing, repurposing, and warranting of EV batteries.
4. Enhance sorting and purification of PV glass containing CRMs from EoL industrial PV panel recycling lines.
5. Improve the refining and purification of CRMs for EoL EV batteries recycling, targeting a payback period reduction of the CROCODILE process to under 3 years.

Founded on an interdisciplinary approach, the SOLMATE consortium includes four research organisations and universities, eleven industrial partners, and one consultancy company. With a total budget of € 7,3 million, of which € 6,1 million EU contribution, the project will run for the next four years, under the coordination of the VLAAMSE INSTELLING VOOR TECHNOLOGISCH ONDERZOEK N.V. (VITO). The other partners are: TECNALIA, CEA, KU Leuven, ENGIE Laborelec, SUNCRAFTER, SOREN, COMET, TREEE, WATT4EVER, REVOLTA, CERTISOLIS, SOLARCLEANO, Inflights, PNO Innovation, OUT OF USE.

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**Official website ➞** https://www.solmate-project.eu/

**SOLMATE Consortium partners**

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