

IREC contributes to Marbel to produce more sustainable and efficient electric batteries

- The European Marbel consortium has the objective to accelerate the mass market take-up of electric vehicles.
- The consortium of the Marbel project is formed by 16 partners from Spain, Italy, France, Denmark, Turkey, Germany, Norway and Greece.

The Catalonia Institute for Energy Research (IREC) takes part in the European Marbel consortium that is to develop an innovative and competitive lightweight battery with increased energy density and shorter recharging times with the objective to accelerate the mass market take-up of electric vehicles.

Specifically, Marbel will design, develop and demonstrate a new compact, modular, weight-optimised and high-performance battery pack with longer life, greater energy efficiency in charging and energy use based on a robust and flexible battery management system (BMS) along with ultra-fast battery charging and cooling. Modularity will make possible to streamline repair, servicing and recycling processes, while preserving the value of new batteries and reducing hazards for operators and environmental impact.

In the words of Eduard Piqueras, European Programme Manager at Eurecat and Marbel project coordinator, the project “will have a major impact in electric vehicles, in battery innovation and light vehicle construction”. The project is also expected to foster the acceptance and use of this type of vehicles by solving two of the main critical points in consumer’s decision-making, limited vehicle autonomy and charging time, enabling travelling longer distances.

Marbel project implements sustainability and circular economy principles at the center of all activities and goals. In this sense, within Marbel “partners will use secondary raw materials, work on developing a more resource-efficient battery system and ensure its easy dismantling, refurbishment and repurposing for second life applications”, explains Alberto Gómez, Head of Eurecat’s Electric Mobility and Energy Storage research line and Marbel project technical coordinator.

IREC contributes to the Marbel project with the development of a flexible advanced BMS with enhanced functionalities aimed to improve the battery operation and its safety. Its flexible architecture yields a system adaptable to several cell chemistries and different battery pack size and voltage, thus, applicable to a large range of electric mobility solutions.

The project receives funding from the European Union’s H2020 programme. The Marbel consortium brings together 16 partners from eight countries. The consortium is formed by six

research centres (Eurecat, the project's coordinator, Energy Research Institute of Catalunya (IREC), SINTEF, Institute of Communication and Computer Systems ICCS Athens, Technische Hochschule Ingolstadt and Fraunhofer IWU), one automotive engineering company (IDIADA Automotive Technology), two SMEs (Powertech Systems and OTC Engineering); one OEM (Centro Ricerche Fiat - CRF) and five component manufacturers (FICOSA and AVL Thermal, HVAC and AVL Italia, ASAS Aluminyum Sanayi Ve Ticaret Anonim Sirketi, Agrati and Tes-Recuply).

Project key facts

Full Project Title: MANUFACTURING AND ASSEMBLY OF MODULAR AND REUSABLE EV BATTERY FOR ENVIRONMENT-FRIENDLY AND LIGHTWEIGHT MOBILITY

Project Acronym: MARBEL

Start: 1 January 2021

Duration: 42 months

Budget: 11,703,385 €

Coordinator: Eurecat Technology Center

Contact

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