

HEROES, A PROJECT THAT AIMS TO DEVELOP AN ENERGY STORAGE SYSTEM FOR FAST ELECTRIC VEHICLE CHARGING

- SUSTAINABLE INNOVATIONS AND ENSO ARE THE TWO SPANISH PARTNERS OF HEROES, A PROJECT FINANCED UNDER THE HORIZON 2020 RESEARCH AND INNOVATION PROGRAMME
- HEROES HAS RECEIVED MORE THAN €4 MILLION IN FUNDING

Madrid, May 11th, 2021 - [SUSTAINABLE INNOVATIONS](#) and [ENSO](#) are the Spanish partners involved in HEROES (acronym of Hybrid EnerGy stOragE Stations), a new project funded under the European Union's Research and Innovation Programme Horizon 2020, that will last 36 months. The objective of HEROES is the development and demonstration of a disruptive hybrid high power/high energy stationary storage system for **fast charging of Electric Vehicles (EV)** to be used in medium-size charging stations connected to the low voltage grids, without the need to invest in improving the grid power.

To achieve this overall objective, the project will include Research, Development and Demonstration Activities. The research activities will focus on **increasing the power and energy density of Li-ion capacitor (LiC) cells**, their advanced characterization and upscaling their production. The development activities will focus on the **optimization and production of the LiC modules** and the development of a new **Battery Management System**, including new SoX (state-of-charge, state-of-health, and state-of-power) algorithms for the LiC cells. They will also cover the integration and assembly of the full system, including a Direct Current (**DC**) /**DC converter** specifically developed for high input and output voltage ranges. Finally, it will also include the development of the **Energy Management System** for control of the HEROES hybrid system. The prototype system will be demonstrated for the fast charging of EVs in operational environment (charging station). The project outcomes will be key enablers for the **cost-effective deployment** of electric vehicles fast-charging stations and will contribute to the wide adoption of electric vehicles. HEROES project will have a strong impact on **Europe's energy storage sector**, employment, and industrial competitiveness, as well as at the European Union level.

SUSTAINABLE INNOVATIONS and ENSO are part of a consortium formed by a total of ten partners coming from five different European countries. All of them will be working together for 36 months, developing an energy storage system for fast electric vehicle charging.

The main responsibilities of SUSTAINABLE INNOVATIONS in HEROES are to lead the **exploitation** of the project results, **market research strategies**, and the development of e-learning materials for **training** programmes.

"We are proud to be part of a project that seeks the electrification of transport and higher uptake of renewable energy" states Jesús Serrano, Deputy General Manager of SUSTAINABLE INNOVATIONS. "The energy industry is a key sector where we have been gaining experience thanks to other projects such as DEFACTO"

For their part, ENSO will be in charge of developing a detailed assessment of the life cycle costing of the HEROES storage system prototype. In terms of environmental impact, ENSO will evaluate all aspects regarding sourcing, production, use, and waste of most critical materials.

"Economic and environmental assessments are key to ensure the feasibility of innovative solutions for energy storage on the electromobility field," remarks Toni Pons, Founding Partner of ENSO. "It is an important milestone

in the company and a great challenge to apply our knowledge and expertise on Life Cycle Assessment and Life Cycle Cost on the EV and batteries areas to assess HEROES solution on the future of transport and mobility.”

Fast charging infrastructure technical upgrade for the wide adoption of electric vehicles

Electric vehicles are expected to play a key role towards a decarbonised transport system and thus contribute to meet the European Union’s ambitious goal to reduce greenhouse gas emissions. However, the wide adoption of electric vehicles has been hampered by key barriers, including high prices due to the costly batteries, their limited range, and the lack of infrastructure for fast and widespread charging. Given this, there is a need to develop technological improvements in the sense of upgrading the buffer system with high power and high energy to allow fast charging. Stationary batteries represent a perfect match for fast-charging stations as they can increase the capacity of the station cost-effectively.

About HEROES

Led by Beyonder, the HEROES consortium is formed by the Institute for Energy Technology, Siemens AG, ElringKlinger, Lithium Balance, Bestoraged, ENSO, Sustainable Innovations, European Association for Storage of Energy, and Aalborg University.

In total, more than €4 million in funding has been granted to HEROES under the European Union’s research, and innovation programme Horizon 2020. For their part, the Spanish partners have received more than €350,000 in total.

About SUSTAINABLE INNOVATIONS

SUSTAINABLE INNOVATIONS is a Spanish consultancy company that provides innovative services to a wide range of sectors throughout Europe: biobased industry, renewable energy, or advanced materials, among others. The capabilities that SUSTAINABLE INNOVATIONS offers are structured around three main pillars that serve as a bridge between the conception of innovative ideas and the market: Innovation management, Market Uptake, and Capacity Building. Our main asset is the highly qualified team of engineers, environmentalists, communication experts, and business strategists who work with us.

www.sustainableinnovations.eu

About ENSO

ENSO is a technology-based company whose main activity revolves around the research and development of new processes, technologies, products and services applied to industry aiming at the circular economy and advanced materials and biomaterials. R&D, sustainability, and circular economy are our hallmarks. Committed to environment and innovation, we promote sustainability in the use and production of new materials, the improvement of processes and technologies, and the valorization of resources, covering our clients and technological partners needs.

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