

## SUSTAINABLE INNOVATIONS AND TEKNIKER PARTICIPATE IN TEMPEST, THE EUROPEAN PROJECT TO PROVIDE LIGHTER BATTERIES FOR THE TRANSPORT INDUSTRY

- SUSTAINABLE INNOVATIONS AND TEKNIKER ARE THE TWO SPANISH ENTITIES PARTICIPATING IN THIS INNOVATIVE INITIATIVE FINANCED WITH €3.6 MILLION BY THE EU COMMISSION UNDER THE RESEARCH AND INNOVATION FRAMEWORK PROGRAMME HORIZON EUROPE.
- THE TEMPEST PROJECT WILL GENERATE A POSITIVE, ENVIRONMENTAL IMPACT, THROUGH A SIGNIFICANT REDUCTION IN CO<sub>2</sub> EMISSIONS IN LARGE INDUSTRIES, SUCH AS THE AUTOMOTIVE, AERONAUTICAL, MARITIME, STATIONERY AND RAILWAY SECTORS.
- THIS PROJECT BRINGS TOGETHER A CONSORTIUM OF 11 ENTITIES FROM 8 DIFFERENT COUNTRIES AND WILL BE IMPLEMENTED UNDER THE SUPERVISION OF THE EUROPEAN EXECUTIVE AGENCY FOR CLIMATE, INFRASTRUCTURE AND ENVIRONMENT (CINEA) UNTIL 2026.

May 9, 2023, Madrid – Europe needs a new generation of batteries that allow for greater durability, without the potential risk of current overcharging, also guaranteeing more sustainable manufacturing. To this end, the TEMPEST project was launched this month, aiming to provide and refine a new generation of safe, recyclable, lightweight and high-performance batteries for as many transport applications as possible before 2026.

SUSTAINABLE INNOVATIONS and TEKNIKER are the two Spanish entities participating in this project, funded by the European Union within the Horizon Europe research and innovation programme with more than 3.6 million euros. TEMPEST brings together a consortium of 11 different organisations from 8 countries, including public institutions, research centres, innovation consultancies and prestigious European universities.

The TEMPEST initiative will develop and mature a new generation of safe by-design, recyclable, high-performance, and lightweight batteries for the largest possible swath of transport applications. To this end, it will enhance the innovation in advanced, module-free battery systems, optimised using artificial intelligence algorithms, and based on new chemistries methods, through different demonstrator battery types selected as the representative for some of the key European transports sectors, such as automotive, aircraft, maritime, rail, and stationery. The TEMPEST action will reduce the costs and manufacturing time of batteries and their structure by 30%, reducing their weight by 15%, and increasing their performance by another 15%. This strengthening of the efficiency in the entire value chain will contribute to generate a 72% reduction in energy grid overload.

### **The TEMPEST Project triple impact: technological, social, and environmental**

This project will have a significant impact at the economic, social, and environmental levels in Europe, and will contribute directly to the European Union's ambition of self-sufficiency in the batteries manufacturing cycle, especially in the cell/pack reinforcement. TEMPEST will advance innovation in module-free battery manufacturing systems, based on current and future applicable chemistry technologies, through three different types of demonstration batteries, crucial for automotive, aeronautical, marine and railway applications, as well as stationary energy storage for companies and individuals.



This European initiative represents a turning point for these sectors and could generate a significant boost in terms of employment. It is estimated that the European battery market will employ more than 300,000 people and be worth up to EUR 250 billion by 2030, of which TEMPEST will indirectly contribute to generating EUR 200 million in revenue and creating more than 10,000 additional jobs in battery manufacturing. However, TEMPEST's greatest impact will be in the environmental field, with an expected increase in battery recyclability of up to 70%. In this sense, the optimisation of the weight of the batteries, their different components and processes in the different sectors mentioned, will allow a reduction of greenhouse gases of up to 62% in the maritime sector compared to their current level; and more than 78.7 tonnes of CO<sub>2</sub> in the aeronautical sector.

### **Two Spanish entities to boost innovation and connection with society**

Within the project, SUSTAINABLE INNOVATIONS is responsible for the Communication, Dissemination and guarantee of Intellectual Property, and access to TEMPEST information, as well as participating in the development of materials to help train the different sectors in this new generation of batteries. For its part, TEKNIKER is the coordinating entity for the manufacture and optimisation of the new generation of the TEMPEST project batteries, intervening in the choice of their composition, design, and development, together with other participating entities.

*"Europe and its citizenship need a new generation of batteries that allow us to advance in the strategic autonomy in their manufacture, but also to improve the sustainability of industries that are part of our day, such as automotive, maritime, air and rail transport. Thanks to TEMPEST there will be an unprecedented advance in the innovation of its entire value chain and SUSTAINABLE INNOVATIONS will contribute to connecting these developments through our experience and capabilities",* stated Jesús Serrano, Deputy General Manager of SUSTAINABLE INNOVATIONS.

*"There is plenty of room for improvement in the composition, performance and circularity of today's batteries. TEMPEST is about materials, but also about standardising better ways of production and downstream management. The environmental, economic, and social impact on key sectors will be superlative. Tekniker will be responsible for the design of a new battery management system (BMS) concept that meets the needs of the new cells while minimising the size and weight of the system. That is why Tekniker is very interested in participating in this European project,"* said Nerea Arandia, Director of the Electronics and Communications Unit of Tekniker.

For 36 months, until 2026, the TEMPEST consortium will work under the supervision of the European Climate, Infrastructure and Environment Executive Agency (CINEA) on different milestones, covering the development of the new generation of lithium-ion batteries and solid-state cells; the implementation of new manufacturing models and the improvement of their circularity, as well as the optimisation of their value chain and improvement of energy efficiency.

### **About TEMPEST**

TEMPEST is the European Project to provide a new generation of batteries needed by Europe and its key sectors. Led by RESCOLL, TEMPEST is made up by ABEE, Fraunhofer, IAAPS, the Kemijski Institute, Tekniker, the Universities of Kaunas, Patras, and Bath, Sustainable Innovations, and Albion Technologies.

This project has received €3,614,902.50 of funding from the European Union's Horizon Europe research and innovation programme under Grant Agreement No. 101103681.

### **About SUSTAINABLE INNOVATIONS**

SUSTAINABLE INNOVATIONS is a Spanish consultancy that provides innovative services to a wide range of sectors across Europe: bio-based industry, renewable energy, and advanced materials, among others.



The capabilities offered by SUSTAINABLE INNOVATIONS are structured around three main pillars that serve as a bridge between the conception of innovative ideas and the market: Innovation Management, Business Development Services and Training. Our main asset is the highly qualified team of engineers, environmentalists, communicators, and business development experts who work with us.

[www.sustainableinnovations.eu](http://www.sustainableinnovations.eu)

### **About TEKNIKER**

Tekniker is a technology centre specialising in Advanced Manufacturing, Surface and Materials Engineering and Information and Communication Technologies for production. Its mission is to provide growth and welfare through R&D&I to society, contributing in a sustainable way to the competitiveness of the business fabric. Tekniker is a member of the Basque Research and Technology Alliance (BRTA).

[www.tekniker.es](http://www.tekniker.es)