

PROJECT

## **i-HeCoBatt**

# **Intelligent Heating and Cooling solution for enhanced range EV Battery packs**

**Funding:** European (Horizon 2020)

**Duration:** Jan 2019 - Jun 2022

**Status:** Ongoing

**Total project cost:** €4,192,705

**EU contribution:** €3,287,012



**Call for proposal:** H2020-LC-GV-2018

[CORDIS RCN : 219765](#)

### **Background & policy context:**

The envisaged European CO2 fleet emission limits for 2025-2030 already require a massive market introduction of EVs. However, there are still some obstacles for user acceptance of EVs: high cost, slow charging, limited range, perceived lack of added value and concerns of limited mobility.

### **Objectives:**

In this context, i-HeCoBatt stands for Intelligent Heating and Cooling solution for enhanced range EV Battery packs. The aim of i-HeCoBatt is to achieve a smart, cost bursting industrial battery heat exchanger to minimize the impact on full electric vehicle range in extreme conditions.

The proposed solution will remove the currently used expensive and heavy gap filler between the heat exchanger and the battery pack and will replace the aluminium interface plate in contact with the battery pack with a thin polymer layer. This design enhances the efficiency of the heating and cooling system that will be supported by a heating actuator in direct contact to the battery pack. Customized printed sensors will be embedded to the heat exchanger and will feed the battery management control unit as well as an external early diagnostic and safety system connected to the cloud. Different interfaces will be created to access these data according to user profiles: designers, testers, maintenance teams or driver. Finally, the industrialization of the patented innovative heat exchanger concept will contribute to the cost reduction of the heating and cooling system and the EV.

### **Methodology:**

The Consortium gathers know-how from a multidisciplinary group of research centres, SME and industrial partners, including an automotive OEM, with expertise in battery pack and thermal systems design, testing and manufacturing for automotive applications. Partners behind the intelligent heat exchanger concept are European TIERS that intend to position with an unbeatable environmental compliant product that will be introduced in OEMs value chain in a maximum period of 2 years after the closure of the project.

### **Parent Programmes:**

[H2020-EU.3.4. - Horizon 2020: Smart, Green and Integrated Transport](#)

**Institute type:** Public institution

**Institute name:** European Commission

**Funding type:** Public (EU)

**Other programmes:** LC-GV-01-2018 Integrated, brand-independent architectures, components and systems for next generation electrified vehicles optimised for the infrastructure

### **Lead Organisation:**

**Fundacion Cidetec****Address:**

PASEO MIRAMON 196 PARQUE TECNOLOGICO DE MIRAMON  
20014 SAN SEBASTIAN  
Spain

**Organisation Website:**

<http://www.cidetec.es>

**EU Contribution:** €549,563

**Partner Organisations:****Datik Informacion Inteligente S.I.****Address:**

PS MIKELETEGI EDIF B8 661  
20009 DONOSTIA SAN GIPUZKOA  
Spain

**EU Contribution:** €165,550

**Epi Gmbh****Address:**

LEOPOLDAUER STRASSE 173-181  
1210 WIEN  
Austria

**EU Contribution:** €341,898

**Commissariat A L Energie Atomique Et Aux Energies Alternatives****Address:**

RUE LEBLANC 25  
75015 PARIS 15  
France

**Organisation Website:**

<http://www.cea.fr>

**EU Contribution:** €624,166

**Miba Aktiengesellschaft****Address:**

DR MITTERBAUER STR 3  
4663 LAAKIRCHEN  
Austria

**EU Contribution:** €960,029

**Audi Aktiengesellschaft****Address:**

-  
85045 Ingolstadt  
Germany

**EU Contribution:** €344,807

**Vertech Group****Address:**

11 RUE DEFLY  
06000 NICE  
France

**Organisation Website:**

<http://www.vertech-group.com>

**EU Contribution:** €301,000

**Technologies:**

Electric vehicle batteries (and energy management)  
Heat recovery for cooling systems

**Development phase:** Research/Invention

**STRIA Roadmaps:**

Cooperative, connected and automated transport, Transport electrification, Vehicle design and manufacturing

**Transport mode:** Road transport

**Transport sectors:** Passenger transport

**Transport policies:** Environmental/Emissions aspects

**Geo-spatial type:** Other