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HORIZON 2020 PROGRAMME - TOPIC H2020-LC-BAT-2019
Affordable High-Performance Green Redox Flow Batteries

GRANT AGREEMENT No. 875613



HIGREEW – Deliverable Report

D5.1 – Communication and control system (advanced
BMS + PCM) demonstrator

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| Written By | Antonio Riesco, Sergio Macías (SGRE) | 2023-04-25 |
| Checked by | Maddi Sanchez (GAMESA) | 2023-04-26 |
| Reviewed by (if applicable) | Michael Schäffer (Fraunhofer) Aitor Beloki and Eduardo Sánchez (CICe) | 2023-04-27 |
| Approved by | Eduardo Sánchez (CICe) | 2023-04-28 |
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Publishable summary

The HIGREEW project aims to design, build and demonstrate a prototype based on a new generation aqueous organic redox flow battery (AORFB) with a low cost water soluble organic electrolyte, low cost components and long lifetime. One of the main outcomes of the project would be a fully functional AORFB prototype, which has been designed and built in the previous WPs.

During the design of the prototype, some important aspects have been considered for the successful integration of the prototype, given the previous experience in the integration of other devices in the hybrid plant.

In WP5 the necessary tasks for the integration of this battery prototype in a hybrid power plant will be performed. In this way it can be tested in a real environment together with renewable generation sources and other storage systems. Since it is a prototype, the necessary systems for data acquisition have also been configured, which will make possible its subsequent analysis in the validation phase.

This deliverable summarizes the work done in the establishment of communications and the EMS control. Testing of functional control and communication of the set up at "La Plana" including the plant EMS, PCS, and BMS are included. The testing protocol of the communication system between BMS, inverter and main plant controller (EMS) is also discussed.

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Project partners:

| # | Partner | Partner Full Name |
|----|------------|--------------------------------------------------------------------------------------------------|
| 1 | CICe | CENTRO DE INVESTIGACIÓN COOPERATIVA DE ENERGÍAS ALTERNATIVAS FUNDACIÓN, CIC ENERGIGUNE FUNDAZIOA |
| 2 | GAMESA | GAMESA ELECTRIC SOCIEDAD ANÓNIMA |
| 3 | UAM | UNIVERSIDAD AUTÓNOMA DE MADRID |
| 4 | CNRS | CENTRE NATIONAL DE LA RECHERCHE SCIENTIFIQUE CNRS |
| 5 | C-TECH | C-TECH INNOVATION LIMITED |
| 7 | UWB | ZAPADOESKA UNIVERZITA V PLZNI |
| 8 | PFES | PINFLOW ENERGY STORAGE, S.R.O. |
| 9 | UNR | UNIRESEARCH BV |
| 10 | SGRE | SIEMENS GAMESA RENEWABLE ENERGY |
| 11 | FRAUNHOFER | FRAUNHOFER-GESELLSCHAFT ZUR FÖRDERUNG DER ANGEWANDTEN FORSCHUNG E. V. |



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