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Affordable High-Performance Green Redox Flow Batteries

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HIGREEW – Deliverable Report

D2.5 – Single cell validated at lab scale

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Publishable summary

The goal of the HIGREEW project is to design, build, and demonstrate a prototype of a new high-energy density generation of aqueous organic redox flow battery based on a water-soluble low-cost organic electrolyte featuring low-cost components and long service life. To achieve this goal, every aspect of the battery from material selection to battery management system must be optimized.

The final selection of the active materials/components (felt, bipolar plate, membrane, electrolyte composition) made within WP2 needs to be tested in a single cell for a longer period and larger number of cycles. Such testing should validate a combination of materials as candidate for further scale up of the technology from laboratory single cell to pilot stack in WP3. Selected materials were incorporated to flow battery single cell with optimized felt compression and this. Demonstrator single cell was tested for more than 750 cycles. Results from cell testing shows sufficient performance and promising stability for further development of the technology.

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Project partners:

#	Partner	Partner Full Name
1	CICe	CENTRO DE INVESTIGACION COOPERATIVA DE ENERGIAS ALTERNATIVAS FUNDACION, CIC ENERGIGUNE FUNDAZIOA
2	GAMESA	GAMESA ELECTRIC SOCIEDAD ANONIMA
3	UAM	UNIVERSIDAD AUTONOMA DE MADRID
4	CNRS	CENTRE NATIONAL DE LA RECHERCHE SCIENTIFIQUE CNRS
5	C-TECH	C-TECH INNOVATION LIMITED
6	HEIGHTS	HEIGHTS (UK) Limited (Termination report ongoing)
7	UWB	ZAPADOCESKA UNIVERZITA V PLZNI
8	PFES	PINFLOW ENERGY STORAGE, S.R.O.
9	UNR	UNIRESEARCH BV
10	SGRE	SIEMENS GAMESA RENEWABLE ENERGY
11	FRAUNHOFER	FRAUNHOFER ICT



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