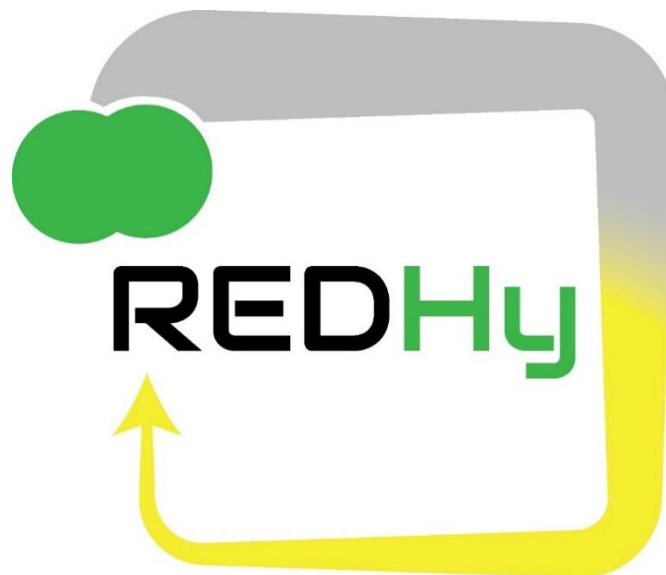


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TOPIC HORIZON-CLEANH2-2023-01-01

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REDHY

**Redox-Mediated economic, critical raw material free,
low capex and highly efficient green hydrogen
production technology**



REDHY - Deliverable report

D5.1 - Heterogeneous catalysts development

Deliverable No.	D5.1	
Related WP	WP5	
Deliverable Title	Heterogeneous catalysts development	
Deliverable Date	2024-12-31	
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Author(s)	Fausta Giacobello, Maria Mancuso, Veronica Ciccì, Alessandra Muscolino, Carmine Arnese, Giuseppe Monforte, Maria Bottari, Stefania Siracusano, Antonino Salvatore Aricò (CNR)	02-12-2024
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V2			
V3			
Final			

Public Summary

The aim of the project is to develop a proof of concept for an innovative water electrolysis technology featuring a high-performance, stable, and efficient single cell utilizing redox mediators and external heterogeneous catalysts for O₂ and H₂ evolution; validate robust, high-throughput electrochemical processes that incorporate bipolar membranes, redox mediators, heterogeneous catalysts, and advanced high surface area electrodes, all designed with non-critical raw materials.

In particular, for the development of heterogeneous catalysts, the activity concerns the demonstration of their effectiveness in the regeneration of redox mediators, favouring the evolution of hydrogen and oxygen. In Deliverable 5.1 titled “Heterogeneous catalysts development” a first screening of different heterogeneous catalysts developed at CNR was presented. All catalysts based on non-critical raw materials were synthesized by co-precipitation and hydrothermal processes and analysed by physico-chemical and electrochemical characterizations.

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Participant No. *	Participant organisation name	Short Name*	Type	Country
1 (Coordinator)	Deutsches Zentrum fur Luft – und Raumfahrt EV	DLR	RTO	DE
2	Centre National de la Recherche Scientifique	CNRS	RTO	FR
3	Uniresearch B.V.	UNR	SME	NL
4	Universitat Politecnica de Valancia	UPV	HES	ES
5	Industrie De Nora S.p.A.	IDN	IND	IT
6	Cutting-edge Nanomaterials CENmat UG	CENMAT	IND	DE
7	Consiglio Nazionale Delle Ricerche	CNR	RTO	IT

*IND-Industry; SME-Small and medium enterprise; RTO-Research organization; HES-Higher Educational Establishment

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