EGHOST

ESTABLISHING ECO-DESIGN GUIDELINES FOR HYDROGEN SYSTEMS AND TECHNOLOGIES

Project ID	101007166
PRR 2024	Pillar 5 – Cross-cutting
Call topic	FCH-04-3-2020: Development of eco-design guidelines for FCH products
Project total costs	EUR 1 133 541.25
Clean H_2 JU max. contribution	EUR 998 991.25
Project period	1.1.2021–31.5.2024
Coordinator	Fundación IMDEA Energía, Spain
Beneficiaries	Commissariat à l'énergie atomique et aux énergies alternatives, Fundación para el Desarrollo de las Nuevas Tecnologías del Hidrógeno en Aragón, Institute of Applied Energy, Symbio, Symbio France, Univerza v Ljubljani

https://eghost.eu/

PROJECT AND GENERAL OBJECTIVES

eGhost will reach the first milestone in the development of ecodesign criteria in the European hydrogen sector. Two guidelines for specific fuel cell and hydrogen (FCH) products are being prepared, and the lessons learnt will be integrated into the eGhost white book: a reference guidance book for any future ecodesign project on FCH systems. It addresses the eco(re) design of mature products (proton-exchange membrane fuel cell (PEMFC) stacks) and those emerging with low technology readiness levels (solid oxide electrolysers) in such a way that sustainable design criteria can be incorporated from the earliest stages of product development.

NON-QUANTITATIVE OBJECTIVES

- eGhost aims to contribute to FCH systems' sustainability. Ecodesigning products will improve their sustainability performance.
- The project aims to contribute to social acceptance. Sustainable products are better accepted by end users and stakeholders, including civil society.

PROGRESS AND MAIN ACHIEVEMENTS

- The preliminary life-cycle sustainability assessment of the PEMFC stack is complete.
- The preliminary life-cycle sustainability assessment of the solid oxide electrolysis cell stack is complete.
- The PEMFC stack has been evaluated in accordance with the EU ecodesign directive.
- Product concepts have been completed.
- Product concepts will be assessed and prioritised as a function of the reduction goals.

FUTURE STEPS AND PLANS

- Methodological and technical ecodesign guidelines for the PEMFC stack will be issued (month 39).
- Methodological and technical ecodesign guidelines for the solid oxide electrolysis cells will be issued (month 39).
- The eGhost white book will contain the main recommendations for FCH products' eco(re)design, drawing on the lessons learnt (month 41).

PROJECT TARGETS

Target source	Parameter	Unit	Target	Target achieved?	SOA result achieved to date (by others)	Year for reported SOA result
AWP 2020	Ecodesign guidelines	number	2		N/A	N/A
	Cumulative environmental reduction	%	10		18–44 % carbon footprint reduction	2013
	Cumulative cost reduction	%	3		From 2.6 % reduction to 46 %	2013
	Eco-efficiency improvement	%	10		N/A	N/A

PRR 2024 PILLAR
Cross-cutting

Clean Hydrogen Partnership
Co-funded by the European Union