eGHOST

ESTABLISHING ECO-DESIGN GUIDELINES FOR HYDROGEN SYSTEMS AND TECHNOLOGIES

Project ID:	101007166
PRD 2023:	Panel 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:	1.1.2021–31.12.2023
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, Symbio France, Institute of Applied Energy, Univerza v Ljubljani

https://eghost.eu/

PROJECT AND 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 learned will be integrated into the eGHOST white book: a reference guidance book for any future ecodesign project on FCH systems. The project addresses the eco(re)design of mature products (proton-exchange membrane fuel cell (PEMFC) stacks) and those emerging with low technology readiness level (TRL) (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 designed.

FUTURE STEPS AND PLANS

- Product concepts will be assessed and prioritised as a function of the reduction goals (month 30).
- Methodological and technical ecodesign guidelines for the PEMFC stack will be issued (month 33).
- Methodological and technical ecodesign guidelines for the solid oxide electrolysis cells will be issued (month 33).
- The eGHOST white book will contain the main recommendations for FCH products' eco(re)designing, drawing on the lessons learned (month 36).

QUANTITATIVE TARGETS AND STATUS

Target source	Parameter	Unit	Achieved to date by the project	Target achieved?
AWP 2020	Cumulative cost reduction	%	3	
	Cumulative environmental reduction	%	10	
	Ecoefficiency improvement	%	10	

Clean Hydrogen Partnership
Co-funded by the European Union