

Jornada II: El futuro del hidrógeno verde en Chile



Somos un centro de investigación de carácter privado sin ánimo de lucro creado para promocionar la utilización del hidrógeno como vector energético.



- Instrumento clave para la promoción de proyectos estratégicos en torno al hidrógeno, las energías renovables, el vehículo eléctrico, la eficiencia energética.
- Con el objetivo de propiciar la investigación, el desarrollo tecnológico y la adaptación industrial desde la comunidad de Aragón
- Contribuyendo a la modernización industrial y la mejora de la competitividad.

Creada el 23 de diciembre de 2003

Primera reunión del patronato: 21 de mayo de 2004

Patronato



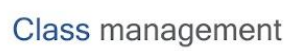
ADMINISTRACIONES PÚBLICAS / ADMINISTRATIONS



CORPORACIONES Y ASOCIACIONES / CORPORATIONS AND ASSOCIATIONS



ENERGÍA / ENERGY



INMOBILIARIA Y OBRA CIVIL / REAL STATE & CIVIL WORK



AUTOMOCIÓN / AUTOMOTIVE



INDUSTRIA QUÍMICA / CHEMICAL INDUSTRY



METAL MECÁNICO / METAL-MECHANIC



INVESTIGACIÓN, ENSEÑANZA E INNOVACIÓN / INVESTIGATION, TRAINING AND INNOVATION



INGENIERÍA Y CONSULTORÍA / ENGINEERING AND CONSULTANCY



SEGURIDAD Y HOMOLOGACIÓN / SAFETY AND RCS



OCIO Y TURISMO / TOURISME AND LEISURE



AGENCIAS PÚBLICAS / PUBLIC AGENCIES



MIEMBRO ASOCIADO / ASSOCIATED MEMBER



TRANSPORTE / TRANSPORT



FINANZAS / INVESTMENTS



PATRONO A TÍTULO NOMINATIVO / INDIVIDUAL MEMBER

Carlos Javier Navarro Espada

PATRONOS DE HONOR / HONORARY MEMBERS

Jeremy Rifkin
Victor Manuel Orera Clemente
Emilio Domingo Arquileú

Algunas actividades

Plan Director del Hidrógeno en Aragón



2007 – 2010



2011 – 2015



2016 – 2020

Consolidación como AEI



Formación, educación, sensibilización y difusión



CONGRESO IBEROAMERICANO DE
HIDRÓGENO Y PILAS DE COMBUSTIBLE



Infraestructuras



Desarrollos Industriales – Proyectos



Algunos proyectos en marcha

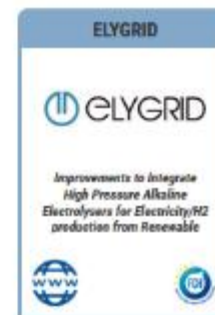
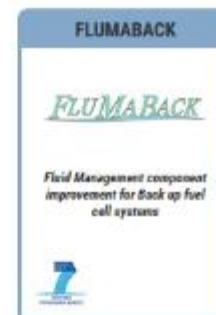
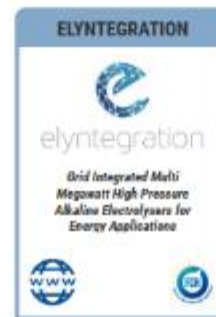
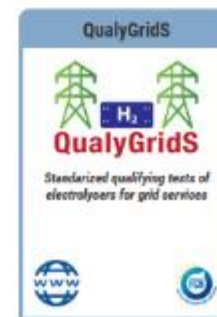
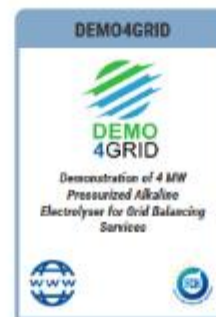
Desarrollo Industrial



Colaboración



Proyectos



Algunos proyectos en marcha



PEM ELECTROLYSERS FOR OPERATION WITH OFFGRID RENEWABLE INSTALLATIONS



03/2016 - 10/2019

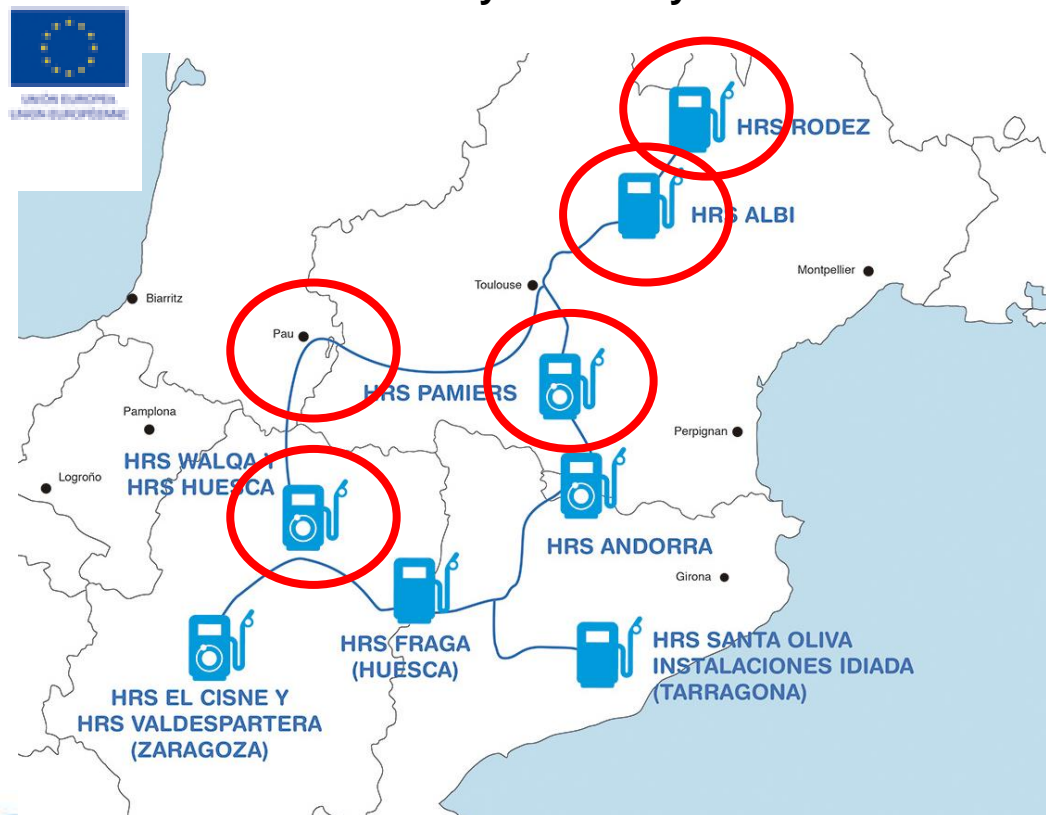
<http://ely4off.eu/>



Algunos proyectos en marcha

INICIATIVA CORREDOR DE HIDRÓGENO DE LOS PIRINEOS Proyecto H2PiyR

Interreg
POCTEFA
H2PiyR



06/2016 - 06/2021

<http://h2piyr.eu/>

Algunos proyectos en marcha



06/2016 - 06/2020

<http://sustainhuts.eu/>





Hydrogen in Gas Grids

01/2020 - 01/2023

HIGGS Hydrogen in Gas Grid



MAIN OBJECTIVES

Potential of hydrogen injection into the transmission high pressure natural gas grid as way to decarbonise the gas system and gas uses.

Knowledge gaps will be covered considering the actual knowhow on how different concentrations of hydrogen gas could affect the infrastructure and its components.

SPECIFIC TECHNICAL OBJECTIVES:

- 1- Implement an injection and admixture system .
- 2- Test gas separation systems based on membrane technology.
- 3- Design/execute a testing loop to validate components and materials identified.
- 4- Elaborate an impact assessment document (operation, maintenance procedures).
- 5- Develop a techno-economic model considering existing and future separation technologies.

Algunos proyectos en marcha



12/2016 - 06/2019

<https://www.hylaw.eu/>

HyLaw stands for Hydrogen Law and removal of legal barriers to the deployment of fuel cells and hydrogen applications. It is a flagship project aimed at boosting the market uptake of hydrogen and fuel cell technologies providing market developers with a clear view of the applicable regulations whilst calling the attention of policy makers on legal barriers to be removed.



02/2019 - 02/2022

<https://hytunnel.net/>



Acknowledgements

This project has received funding from the Fuel Cells and Hydrogen 2 Joint Undertaking (JU) under grant agreement No 826193. The JU receives support from the European Union's Horizon 2020 research and innovation programme.



HORIZON 2020





FOUNDATION FOR THE
DEVELOPMENT OF NEW
HYDROGEN TECHNOLOGIES
IN ARAGON

BIG HIT

A new concept, hydrogen Territories

www.bighit.eu



BIG HIT

Cómo llegamos hasta aquí

Memorandum of Understanding SHFCA – FH_a

September 2015



BIG Hit Project

FCH JU Call 2015



Trade Mission SHFCA – FH_a in Aragon

February 2017

Participation Scottish and Aragonese Governments





Building Innovative Green Hydrogen systems in an Isolated Territory: a pilot for Europe



BIG HIT Project – Many Supporters

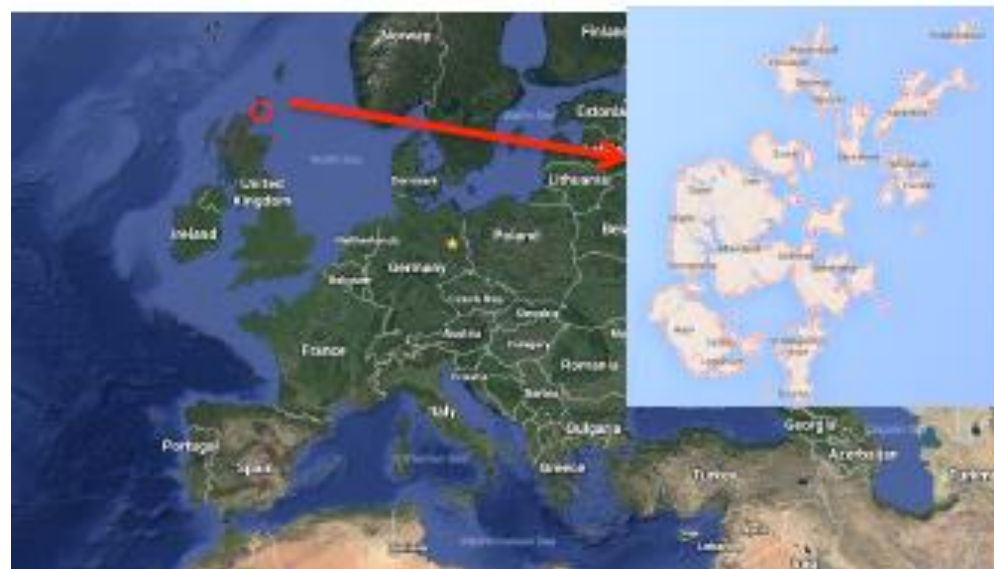


Rationale



■ Orkney Islands:

- 20 inhabited islands.
Population: 21 000
- 56 MW of RES (11
MW wave/tidal + 45
MW wind)
- Orkney-Scotland
interconnector 30MW
capacity



Electricity grid overloaded: **Curtailment** (In 2016 renewable electricity generation in the Orkney Islands produced the equivalent of 120% of their annual electricity demand)

Transition to hydrogen economy, meeting electricity, transport and heat needs

H2 Local Energy System

- ✓ Supply: green H₂ from wind & tidal
- ✓ Transport/distribution H₂ by road and ferry
- ✓ End-use: H₂ for heat, power & transport



EDAY

Hydrogen Storage



0.5 MW Electrolyser

Tidal Turbines



30 kW H₂ Boiler

Community Wind Turbine

1 MW Electrolyser

SHAPINSAY



Hydrogen Storage

75 kW Fuel Cell



STON

KIRKWALL

ORKNEY
MAINLAND



BIG HIT Project



LOGISTICS: Transportation of Hydrogen Across Islands



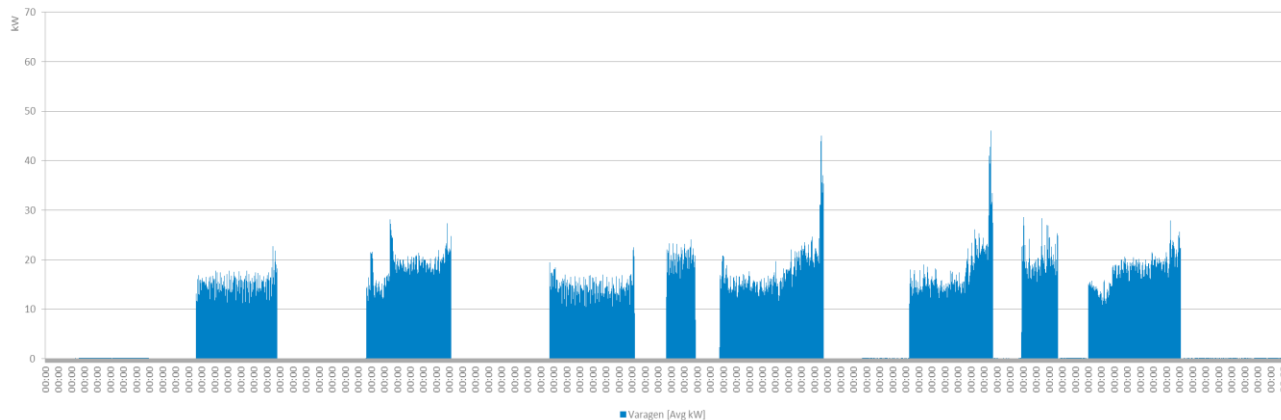
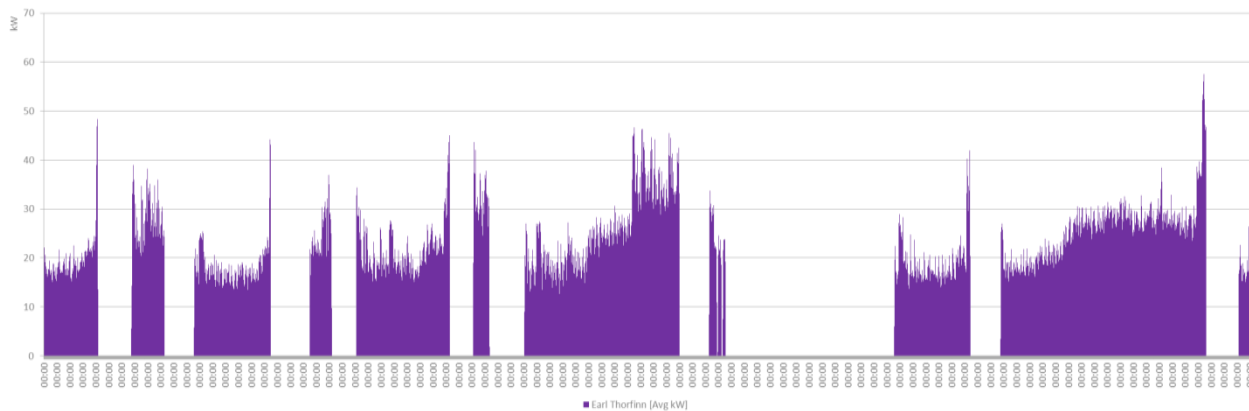
- ADR & Maritime certification – new legislation/standards being created!
- Weight, space & safety restrictions
- Training - ferry crews and emergency services

Lessons learnt replicable to other demo projects & regions!

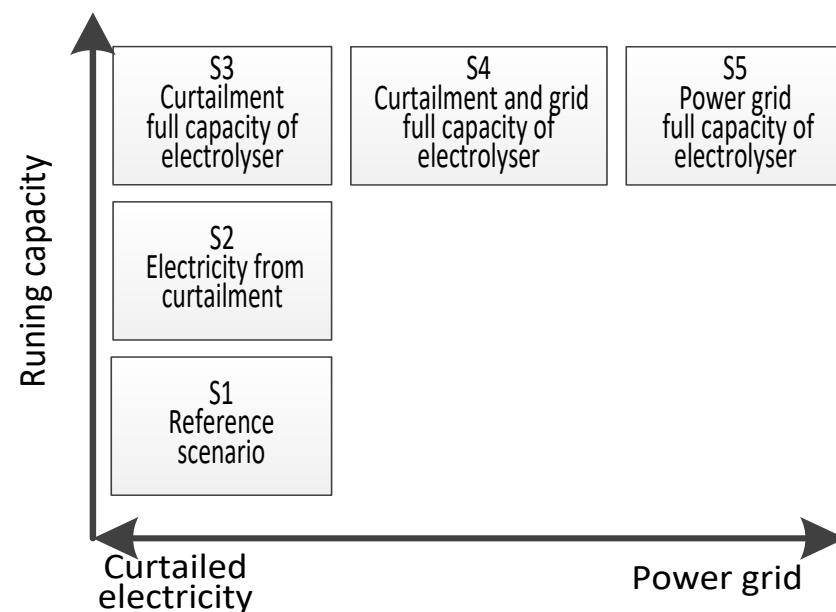
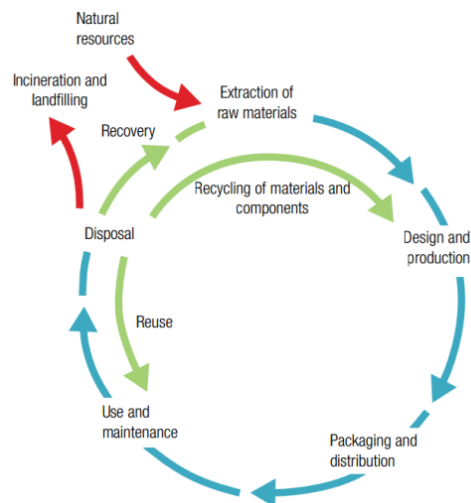
Ferries & H2 transport logistics – Training & crew familiarization



Deployment in Kirkwall Harbour for On-shore power (cold ironing) Fuel Cell delivers 15-50kW to ferries when berthed at pier



SOCIO-ECONOMIC IMPACT ANALYSIS COMMERCIAL & LOCAL BUSINESS MODELS



Social impact survey to partners / suppliers of BIG HIT project
Based on the questions are mandatory, and all of them can be left unanswered.

1. Which company/organization are you at?
Name of the company/organization: _____ location (country and city): _____

2. How many employees are engaged in the BIG HIT project in your company/organization?
No. of employees: _____ (Just full-time and part-time)

3. What are the nationalities of the engaged employees? Please provide nationalities and number of employees.

4. What is the age of the engaged employees?

5. Which type of employment do the employees involved in BIG HIT have? How many of each?

6. Classify total and average working hours per week at your company?
Please provide the number: _____ (hours/week)

8. How long have your company had contracts with materials/components suppliers for the BIG HIT project? Please specify the type of contracts and the number of suppliers.

9. How long have your company had contracts with non-material product suppliers (e.g. services, communication) for the BIG HIT project? Please specify the type of contracts and the number of suppliers.

10. Do you think the BIG HIT project can help with the technological innovation in your company?

11. Do your company take part in community engagement activities regarding this project?

12. Other kind of engagement activities:

Hydrogen Fuel Cell Technology in the Local Community Heat and Power

Demographic

This section is reserved for the sole purpose of defining different categories and areas.

Sex
☐ Male
☐ Female
☐ Other

What age are you?
25 or over

Where is your current home?
☐ Mountain (Mts)
☐ Mountain (Other)
☐ City
☐ Shoreline

Where were you raised?
City

- [illegible]

DISSEMINATION ACTIVITIES – Hydrogen Territories Platform (HTP)

- Scope: exchange of information to exploit replication possibilities of the BIG HIT platform to other remote regions/territories
- Members' benefits – access to:
 - Key project deliverables, key conclusions & best practices
 - Methodology & recommendations for project replication
- Members' role: feedback on replication methodology (data for development/validation)
- First results:
 - Outreach dissemination and engagement with interested regions
 - Development of HTP online structure and replication methodology ongoing

BIG HIT BUDGET



Budget:

- Total Budget: 10.9000.000 €
- Funded by Europe FCH JU (**H2020**): 5.000.000 €
- Funded by Regional Government: 3.400.000 €
- Own Funding : 2.500.000 €





FUNDACIÓN PARA EL
DESARROLLO DE LAS NUEVAS
TECNOLOGÍAS DEL HIDRÓGENO
EN ARAGÓN

MUCHAS GRACIAS POR SU ATENCIÓN

Para más información puede consultar nuestra página web:
www.hidrogenoaragon.org

O enviar un correo electrónico a la siguiente dirección:
director@hidrogenoaragon.org

